Personalized human resource management via HR analytics and artificial intelligence: Theory and implications

Xiaoyu Huang [a], Fu Yang [b], Jiaming Zheng [c], Cailing Feng [d, 1, *], Lihua Zhang [c]

[a] Jack H. Brown College of Business and Public Administration, California State University San Bernardino, San Bernardino, CA, USA
[b] School of Business Administration, Southwestern University of Finance and Economics, Chengdu, Sichuan Province, China
[c] School of Labor and Human Resources, Renmin University of China, Beijing, China
[d] College of Public Administration, Nanjing Agricultural University, 1 Weigang Road, Nanjing, Jiangsu, 210095, China

ABSTRACT

This conceptual paper theorizes the emerging concept of personalized human resource management (HRM), which refers to HRM programs and practices that vary across individuals within an organization. As a subset of high-performance work practices (HPWPs), personalized HRM is implemented at the individual level and represents the next generation of HRM, which is characterized by the adoption of advanced HR analytics and artificial intelligence (AI) to provide tailored HR solutions. We argue that personalized HRM constitutes a unique source of sustained firm competitive advantage and offers additional beneficial performance effects on top of other HPWPs. Drawing on the theories of individual differences and person-organization fit, we explain why personalized HRM outperforms traditional standardized HRM in terms of productivity, favorable HR climate, flexibility, return on investment of HRM, and firm financial performance. We also suggest that business strategy is a moderator of the relationship between HRM and firm performance. Building on the AI job replacement theory, we further propose that the mechanical and analytical intelligence (intuitive and empathetic intelligence) required for personalized HRM tasks is positively (negatively) related to the adoption of AI. Lastly, we elaborate on the implications and explain how advanced HR analytics and AI can facilitate the transition toward personalized HRM.

In the face of today's highly uncertain business environment, as highlighted by the recent US-China trade war, many organizations are moving away from strictly standardized human resource management (HRM) systems or one-size-fits-all HRM approaches and are shifting toward personalized HRM approaches in order to enhance the flexibility and effectiveness of HRM. Just as Facebook, Amazon, Netflix, and Google (FANG) use personalization to build stronger bonds with customers, personalized HRM enables organizations to better serve and connect with their employees and better attract external talent. As the 2018 Deloitte *Global Human Capital Trends* report suggested (Deloitte, 2018), "Most organizations now recognize the need to reshape rewards with a more personalized, agile, and holistic approach, matching other talent management strategies." Deloitte further pointed out that personalized incentives and talent management strategies have been gaining in popularity. However, despite the growing importance of personalized HRM, theoretical development of the concept has lagged behind its adoption and applications in practice. This paper seeks to fill the research gap by offering an initial theorization of personalized HRM and providing the conceptual framework for future empirical examinations of personalized HRM.

We broadly define personalized HRM as HRM programs and practices that vary across individuals within an organization. Personalized HRM can be broadly grouped into three types: (1) personalized HR recommendations, such as personalized career planning, rewards, and learning advice, (2) personalized HR choices, such as personalized flexible work arrangements and cafeteria-style benefit plans that give individual employees the ability to choose the HR practices that best suit their needs and individual preferences, and (3) actual personalized HR programs

and practices, such as personalized recruitment, personalized learning, personalized talent management, and personalized rewards. Personalized HRM is essentially a form of high-performance work practice (HPWP) that is tailored to employees' individual needs and preferences and that often involves the use of advanced HR analytics and artificial intelligence (AI) to bring the flexibility and effectiveness of HR to the next level. In particular, human resource analytics (HR analytics) comprise "the use of statistical tools, measures and procedures, which can be used in employing and masking the most effectual decisions such as HRM strategies and practices" (Mohammed, 2019). Following Kaplan and Haenlein (2019), we define AI as "a system's ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation." Although the empirical research on the application of AI in HRM remains relatively limited (Edwards, Charlwood, Guenole, & Marler, 2022), AI technologies have been applied to some aspects of HRM, such as to serve as an enabler in the application of HR analytics (Margherita, 2022), because AI is efficient and effective in data mining and predictive tasks (Ting & Lin, 2011), which are essential parts of HR analytics. A recent survey showed that 22 percent of companies have implemented HR analytics, and 11 percent have already developed and are using HR analytics themselves (LinkedIn, 2018). As Qamar and Samad (2021) suggested, several studies have demonstrated a positive link between the implementation of HR analytic technology and improved organizational outcomes. For instance, as predicted by Allied Market Research (Pramod, Kashinath, & Vineet, 2021), the global HR analytics market size is expected to increase from $2.4 billion in 2021 to $11 billion in 2031, reaching a high Compound Annual Growth Rate of 16.6 percent during the period. The increasing adoption of HR analytics across the globe is allowing more HR practitioners to make data-driven and evidence-based decisions rather than relying on unreliable intuitions (Qamar & Samad, 2021). As the founder and president of a consulting firm, John Rubino, noted, personalized HRM is one of the most promising trends in the practice of strategic HRM (Gulati, 2016).

The success of personalized HRM depends largely on organizations' ability to collect relevant data in a timely manner and to use HR analytics and AI to optimize their performance. This paper argues that personalized HRM – enabled by HR analytics and AI – can enhance individual motivation and performance, and that organizations can leverage personalized HRM to gain a sustained competitive advantage. We also provide suggestions for HR professionals on how to use HR analytics and AI to deliver effective personalized HRM that adds value to organizations on top of the positive impacts from other HPWPs.

This paper makes several theoretical contributions to the strategic HRM literature. Despite decades of strategic HRM research, little attention has been paid to the important question of why HRM quality varies significantly across organizations. For organizations offering similar sets of HPWPs, as institutional isomorphism suggests (Huang & Verma, 2018), we need to know what causes the disparity in the positive effects of HPWPs across organizations. This inquiry is at the core of strategic HRM research into the fundamental question of "What is (or can be) strategic about HRM?"

From a resource-based view of firms (Barney, 1986, 1991), we argue that personalized HRM – enabled by HR analytics and AI – is a unique source of competitive advantage and offers beneficial performance impacts on top of those from other HPWPs. We attempt to explain how advanced HR analytics and AI can facilitate the implementation of personalized HRM and take its quality (Becker, Huselid, & Beatty, 2009) and effectiveness (Huselid, Jackson, & Schuler, 1997) to new heights.

In the following sections, we provide a conceptual framework of personalized HRM, propose its potential impacts, discuss theoretical and managerial implications, and, finally, identify the limitations of current knowledge and discuss the implications for future research.

1. A conceptual framework of personalized HRM

Strategic HRM refers to "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals" (Wright & McMahan, 1992). Most of the previous research on strategic HRM has focused on the differences in HRM across different organizations, whereas personalized HRM centers on the differences in HRM within organizations.

Several seminal studies have explored the variations in HRM within organizations. Pearce, Tsui, Porter, and Hite (1995) showed that multiple types of employment modes can exist within firms. Lepak and Snell (1999) further developed the concept of HR architecture to capture four employment codes, employment relationships, and HR configurations that are based on the value and uniqueness of human capital. Previous research on strategic HRM differentiation (Becker & Huselid, 2006; Huselid & Becker, 2011; Zhou, Zhang, & Liu, 2012) has suggested that HRM practices are not always applied consistently to all groups of employees and that such a differentiation in the application of HRM may lead to the differences noted in HRM quality across organizations.

Although a large body of previous strategic HRM research on HPWPs has used a cross-sectional design to focus on the between-firm variances of HPWPs' impacts on a variety of HR and organizational outcomes (e.g., job satisfaction, turnover, absenteeism, productivity, innovation, and financial performance), relatively few truly longitudinal strategic HRM studies have examined how changes in HPWPs within organizations over time impact performance (Wall & Wood, 2005). For instance, Uen & Chien, 2010 recently showed that knowledge workers' perceived that their commitment-based HR system enhanced their in-role and extra-role behaviors via relational psychological contracts; unfortunately, the cross-sectional design did not allow causal interpretations. Cross-sectional and longitudinal approaches both center on the adoption of HPWPs and their impacts, in contrast to personalized HRM, which focuses on the implementation of HPWPs toward different individuals within organizations. Personalized HRM is actually an extreme form of HRM differentiation, in which HR programs and practices vary at the individual level. In other words, drawing on the concepts of HRM differentiation (Becker & Huselid, 2006; Huselid & Becker, 2011), personalized HRM examines how a differentiated HR architecture that varies at the individual level within organizations influences HR and organizational outcomes.

We argue that personalized HRM represents the next generation of HRM and is characterized by the integration of advanced HR analytics and AI to optimize a variety of HR and organizational outcomes. This conceptual paper contributes to the literature on strategic HRM by providing a conceptual framework for personalized HRM. We argue that personalized HRM, which is facilitated by HR analytics and AI, provides additional beneficial performance effects on top of the positive effects of other HPWPs, and that it is a unique source of competitive advantage for organizations.

The discussion of personalized HRM also contributes to the theoretical debates over HRM fit and flexibility in the strategic HRM literature. In accord with the complementary view of HRM fit and flexibility (Wright & Snell, 1998), personalized HRM improves organizational ambidexterity and can strategically enhance both horizontal and vertical fit. Consequently, it can improve or even optimize HRM flexibility for organizations, because personalized HRM strives to provide the optimal HR solutions to ensure that

organizations have the right person in the right location to perform needed tasks at the right time.

We group personalized HRM broadly into three types: (1) personalized-HRM-related recommendations, (2) HRM options from which employees can choose, and (3) actual personalized HRM programs and practices that vary at the individual level. Examples of personalized HRM abound, such as IBM's use of AI to recommend appropriate training for individual employees (Tambe, Cappelli, & Yakubovich, 2019). Just as is the case with the personalized content that Netflix provides, personalized recruiting helps in researching background information (including locations, experience, education, and interests tailored to organizations' specific needs); such personalized content improves the chances that the organization will find the right candidates at the right times and in the right places: "Any initial outreach to a candidate should include at least one personalized element that demonstrates you've taken the time to explore their background" (Schmidt, 2016). As Osburn (2019) discussed, sending tailored messages and using personalized communication significantly improves the effectiveness of employee recruitment, compared with the traditional one-size-fits-all templates, and personalized recruiting matters now more than ever as companies face tough competition in hiring the best talent in today's economy. Virtual recruiters for AI further assist human recruiters in screening and shortlisting candidates and scheduling interviews with human recruiters. Yet another well-known example of personalized HRM programs is the so-called "cafeteria-style" benefit plan, or flexible benefits plan, which, rather than providing a standard one-size-fits-all benefits package for all employees, gives employees the opportunity to choose their own benefits packages (Barringer & Milkovich, 1998; Cole & Flint, 2004; Lin, Kelly, & Trenberth, 2011). Such plans understandably have become highly popular. Moreover, in addition to simply providing available options, actual personalized HRM is also on the rise. Personalized adaptive learning, for example, uses artificial intelligence to provide the best individualized training solutions on the basis of employees' differing learning styles and paths. For instance, HR analytics help to identify the most effective and efficient solutions for different employees (Fernandez & Gallardo-Gallardo, 2021). Individualized HRM, defined as "an HR system where managers have the opportunity and actually use the opportunity to individually negotiate agreements about work arrangements with individual employees" (Bal & Dorenbosch, 2015), is another form of personalized HRM, which in this case centers on individualized contracts.

Table 1 displays examples of personalized HRM in multiple functional areas of HRM (employee recruitment and selection, training and development, performance management, succession and career planning, compensation and benefits, employee participation, employee well-being, health and safety, and international HRM) and in the potential applications of advanced HR analytics and AI. In particular, personalized communications and messages are fundamental aspects of personalized HRM that can be applied to multiple functional areas of HRM.

Fig. 1 provides a conceptual framework for personalized HRM. Notably, there are several key similarities and also differences between the causal chain of personalized HRM described in Fig. 1 and the prior causal links that unlock the "black box" of HRM and organizational performance. The most obvious distinction is that the unit of analysis is at the individual level – personalized HRM provides different HRM treatments to different employees. Indeed, both individual-level and organizational-level variables are important for personalized HRM.

Second, similar to prior causal chains of HRM impacts (e.g., Becker & Huselid, 2006; Messersmith, Patel, Lepak, & Gould-Williams, 2011), personalized HRM first influences employees'

ability and motivation, those influences subsequently shape HR outcomes, and then, ultimately, those HR outcomes impact organizational performance.

Third, theoretically, personalized HRM can be implemented at all five levels of HRM (Arthur & Boyles, 2007). Employees' shared interpretation and perception of personalized HRM constitute the organization's HR climate. The most commonly seen personalized HRM occurs at the HR practice level. For example, personalized adaptive learning and gamification are training practices implemented by managers and individual employees. As Trung and Swierczek (2009) argued, managers should, to at least some extent, allow employees to freely determine the method and the content that they will learn in order to cope with changes. Theoretically, personalized HRM could also be applied at the HR program level. For example, the entire training program could be personalized. Individual employees could receive personalized recommendations regarding what they should learn, employees could have the ability to select personalized training programs, and organizations could provide platforms for personalized learning.

Although theoretically possible, however, at this stage completely personalized HR systems are administratively and practically difficult to develop and maintain. Still, personalized HRM can potentially be part of an organization's HR principle of emphasizing individuality and employee preferences and choices.

2. Impacts of personalized HRM

We conceptualize personalized HRM as a subset of HPWPs that are implemented in a personalized manner. For instance, training is a well-examined HPWP that positively influences employee ability, motivation, and productivity (e.g., Batt & Colvin, 2011; Chuang & Liao, 2010; Delery & Doty, 1996; Litz & Stewart, 2000). Personalized training is a subset of training that provides personalized learning experiences which are tailored to individuals' different needs, preferences, learning paths, and styles. The individual-differences perspective (e.g., Ackerman & Humphreys, 1990; Judge & Ilies, 2002; Sackett, Lievens, Van Iddekinge, & Kuncel, 2017) suggests that knowledge, skill, ability, personality (including personal integrity and motivational attributes), and vocational interests (i.e., peoples' interests regarding work environment and how their interests can be supported by the work environment) differ among individuals (Sackett et al., 2017). From this perspective, the various individual characteristics and vocational interests held by employees correlate not only to job choices made by employment candidates, but also to their job and performance outcomes as workers, and even to their intention to leave (Le, Robbins, & Westrick, 2014; Van Iddekinge, Roth, Putka, & Lanivich, 2011). Individual employees need to obtain knowledge and skills not only to meet their personal needs, but also to fulfill organizational requirements. Therefore, it is important for HRM managers to recognize the differences among individuals, in terms of their cognitive abilities, knowledge, and skills, and also how they are motivated. We argue that personalized HRM has great potential to optimize individual job performance outcomes and minimize turnover, because its programs not only recognize but also adequately address important individual differences.

Person-organization fit (e.g., Cable & Judge, 1996; Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005; Morley, 2007; Verquer, Beehr, & Wagner, 2003) involves matching the individual's interests, values, and needs to those of the organization (Chatman, 1989; Werbel & DeMarie, 2005), and we further argue that personalized HRM has the potential to enhance person-organization fit because personalized HRM programs are able to train and motivate individual employees to best align each person's knowledge, skills, abilities, interests, and career goals with the

Table 1
Examples of personalized HRM and artificial intelligence applications.

Functions of HRM	Personalized HRM	Potential HR analytics and AI Applications
Recruitment and selection	• Personalized recruitment; • Personalized messages and communications; • Personalized sourcing and screening etc.	Use HR analytics, chatbots and AI to • Engage in personalized communication. • Send personalized messages. • Develop and use an AI recruiter. • Create and deliver customized, targeted recruitment and selection. • Use AI to schedule interviews with human recruiters and provide recommendations.
Training and development	• Personalized learning; • Personalized gamification; • Personalized adaptive learning • Personalized orientation; • Personalized onboarding etc.	Use HR analytics, chatbots and AI to • Develop and use an AI trainer. • Use recommendation engines to provide personalized learning recommendations. • Provide personalized training recommendations. • Deliver personalized adaptive learning. • Conduct personalized gamification. • Create an adaptive onboarding program.
Performance management	• Personalized performance review; • Personalized messages and communications; • Personalized rewards; • Personalized promotions etc.	Use HR analytics, chatbots and AI to • Monitor and analyze individual performance. • Provide timely or real-time personal feedback. • Provide a personalized talent management system. • Conduct surveys.
HR planning, succession planning and career planning	• Personalized succession planning; • Personalized career planning; • Personalized career pathing etc.	Use HR analytics, chatbots and AI to • Collect and analyze data for HR planning. • Conduct HR planning and forecasting. • Facilitate succession planning using HR analytics. • Create and design personalized career planning. • Prepare students for interviews with AI in universities. • Conduct HR and workforce planning.
Compensation and benefits	• Personalized rewards and reorganizations; • Personalized incentives; • Personalized compensation and benefits; • Flexible benefit plans; • Personalized messages and communications etc.	Use HR analytics, chatbots and AI to • Provide personalized compensation and benefit recommendations. • Collect and analyze market data. • Conduct personalized job evaluations. • Carry out repetitive and routine payroll functions. • Deliver personalized rewards through an interactive process in which AI helps employees maximize their unitality based on their different preferences.
Employee participation	• Personalized empowerment; • Personalized communications; • Personalized participation etc.	Use HR analytics, chatbots and AI to • Analyze how to improve employee empowerment and participation via personalized HRM. • Deliver more effective communication approaches for individual employees and to optimize the effectiveness of communication.
Employee well-being, health and safety	• Personalized health and safety training; • Personalized messages and communications; • Personalized work-life balance programs; • Personalized wellness programs etc.	Use HR analytics, chatbots and AI to • Provide personalized health and wellness recommendations. • Analyze work-life balance programs and employee preferences to maximize the return of such programs. • Maximize individual employees' utility gained from personalized wellness programs. • Analyze and predict potential health- and safety-related risks. • Provide adaptive training in health and safety issues.
International HRM	• Personalized relocation, orientation, translation services; • Personalized international recruitment; • Personalized language training; • Personalized cultural training; • Personalized career development; • Personalized repatriation plans; • Personalized expatriate compensation and benefit plans etc.	Use HR analytics, chatbots and AI to • Engage in personalized communication. • Send personalized messages. • Develop and use an AI recruiter. • Collect and analyze data for HR planning. • Create and deliver customized, targeted recruitment and selection. • Develop and use an AI trainer. • Use recommendation engines to provide personalized learning recommendations. • Provide personalized training recommendations. • Deliver personalized adaptive learning.

organization's objectives and strategic goals.

Drawing on these theories, we therefore argue that personalized HRM outperforms traditional standardized or one-size-fits-all HRM practices in terms of their potential impacts on employee ability, motivation, productivity, HR climate, flexibility, HRM return on investment (ROI), and firm financial performance, because personalized HRM is tailored to individual employees' differing needs and preferences and therefore results in enhanced HRM effectiveness. Organizations can use personalized HRM to offer the differentiated HR solutions that best motivate individual employees and meet their unique preferences and needs, since managers can use tailored HR practices that are based on the employees' personal characteristics. By doing so, organizations can also enhance the person-organization fit, because the individual employees are better motivated and served by their personalized HRM systems.

Given the additional administrative and managerial work that is associated with the implementation of personalized HRM, however, organizations often must use advanced HR analytics and technologies, including AI, to facilitate personalized HRM. By comparing personalized HRM with traditional standardized HRM approaches and weighing the pros and cons of each approach, we therefore propose the following impacts of personalized HRM.

2.1. Employee ability, motivation, and productivity

As is shown in Table 1, personalized HRM has been emerging in several key functional areas of HRM. The essence of personalized HRM is to collect and analyze key HR data and to utilize the results to optimize performance outcomes. The personalization of each functional area of HRM requires an investment in the introduction
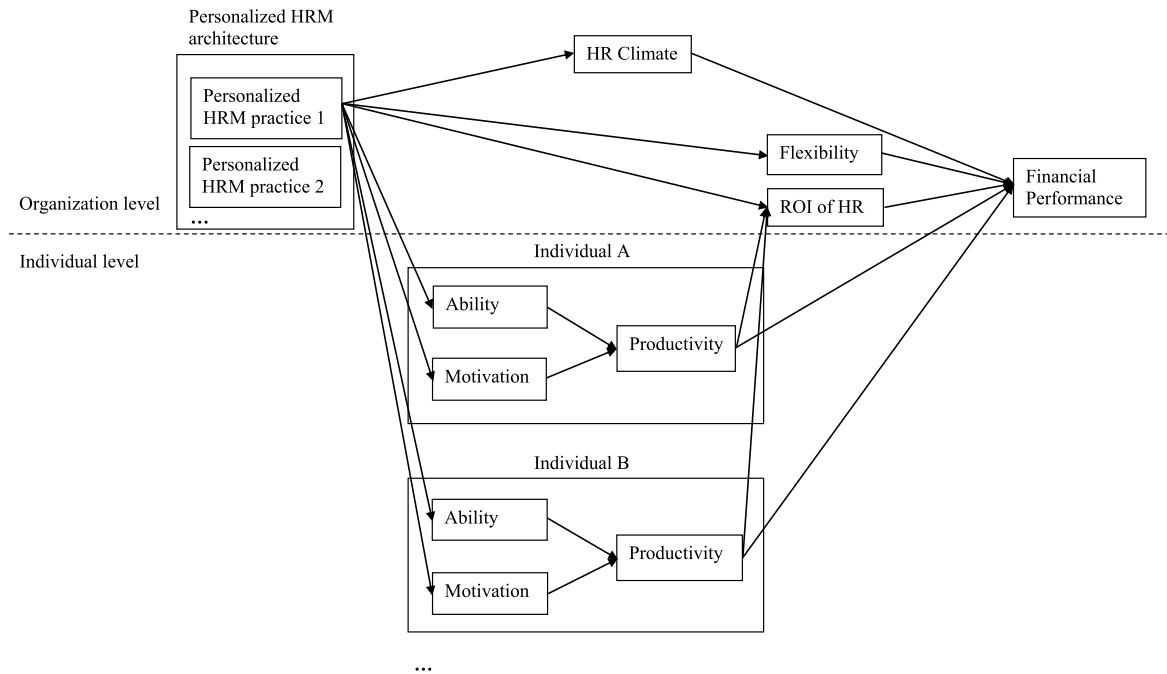
X. Huang, F. Yang, J. Zheng et al.

Fig. 1. A conceptual model of personalized HRM

and maintenance of data-driven HRM approaches. In other words, the success of personalized HRM depends largely on two things: HR professionals' ability to collect, interpret, analyze, and utilize HR data, and the quality of those data. The ability-motivation-opportunity model of HRM (Jiang, Lepak, Hu & Baer, 2012) suggests that HPWPs positively affect employees' ability, motivation, and opportunity (AMO) to contribute, and those factors influence distal organizational outcomes such as innovation and financial performance via specific HRM outcomes in the form of employee job satisfaction, turnover, absenteeism, and productivity. Building on the AMO framework, we argue that personalized HRM can outperform comparable standardized HRM systems by more effectively enhancing the AMO of individual employees.

Indeed, the positive impacts of HPWPs in terms of employee ability and motivation have been well-established in the field. Consistent with previous research on HPWPs (Sun. Aryee & Law, 2007; Takeuchi, Lepak, Wang, & Takeuchi, 2007; Youndt & Snell, 2004), personalized recruitment and training are known to positively influence employees' ability, whereas personalized training, performance management, succession and career planning, and rewards positively affect employees' motivation. Thus, because personalized HRM is conceptualized as a subset of HPWPs that are implemented at the individual level, it can positively impact both employee ability and motivation. That said, why is personalized HRM likely to outperform traditional, standardized HRM?

First, given recent technological advances, personalized recruitment and selection have become increasingly popular. The key objective of such practices is to approach "the right candidate at the right time with a customized recruitment strategy" (Karra, 2019). Compared with traditional staffing strategies, personalized recruitment and selection are more proactive in reaching out to candidates who are highly interested in the job and who have the highest potential to deliver outstanding performance. By optimizing the staffing process, personalized recruitment and selection indirectly contribute to higher productivity, as the personalized approach helps to bring in the best potential candidates and

maximize person-organization fit. For example, the U.S. Army has used an advanced "interactive virtual agent" SGT Star AI system for recruitment purposes, employing it to answer questions, evaluate qualifications, and assign shortlisted candidates to human interviewers (Kaplan & Haenlein, 2019). Consequently, "SGT Star does the workload of more than 50 recruiters with a 94 percent accuracy rate and boosted engagement time for applicants from 4 min to over 10 min" (Kaplan & Haenlein, 2019). Another recent study showed that by applying a Linguistic Inquiry Word Count across 75 various language features to 441 simulated job interview transcripts, machine-learning techniques could provide much better predictions — occasionally twice as accurate — of interviewer personality than self-reported personality ratings could (Hickman et al., 2021). That study further argued that automated algorithms — such as the ones used by HireVue — could substantially streamline the hiring process by offering automated selection recommendations.

Second, personalized training can outperform comparable standardized, or one-size-fits-all, training programs. Personalized training can take on one of three different forms: using a recommendation engine to create personalized recommendations regarding what should be learned, providing multiple training options from which individual employees can choose, and using technologies and AI to offer personalized learning experiences. With its flexibility of tailored learning experiences, personalized learning can outperform traditional training in terms of its positive effects on an employee's ability, motivation, and productivity, because personalized training best meets each individual's needs by taking into account the differences in people's knowledge, skills, abilities, preferences, requirements, and learning paths and styles. Similarly, personalized career planning advice can surpass the efficacy of traditional approaches in terms of enhancing motivation and productivity. From the perspectives of person-organization fit and individual differences, the advantage that personalized training programs are tailored to the different training needs of individual employees makes them optimally able to enhance the

congruence between individual employees and the organization. These differentiated training programs allow individual employees to obtain knowledge and skills not only to meet their personal needs, but also to best fulfill the organizational requirements.

Third, personalized rewards and recognitions can outperform traditional one-size-fits-all compensation and benefit programs, because personalized programs and practices address employees' unique individual needs and help optimize utility. For instance, using a sample of 324 Chinese companies, Lin et al. (2011) suggested that firms should adopt flexible benefit plans because of their potential for cost containment, superior recruitment and retention prospects, and greater productivity. Another study showed that the adoption of human capital management software was highest among firms that implemented performance pay and HR analytics, and that such adoption was related to higher productivity premiums when it was an integral part of firms' incentive systems (Aral, Brynjolfsson, & Wu, 2012). In addition to improving the availability and actual utilization of personalized rewards, organizations can adopt AI to provide personalized compensation and benefit recommendations that help improve employee motivation and productivity.

Taken together, we propose the following.

Proposition 1. *Personalized HRM is more positively related to employee* (*a*) *ability and* (*b*) *motivation than is comparable standardized HRM.*

Proposition 2. *Personalized HRM is more positively related to productivity than is comparable standardized HRM.*

2.2. HR climate

Organizational climate refers to employees' shared perception of the formal and informal policies and practices within an organization. Applying the concept of organizational climate to HRM, Bowen and Ostroff (2004) coined the concept of "strength of the HRM system" − which is analogous to Mischel's (1973) "strong situation" − to describe employees' interpretations and perceptions of the HRM system. They further showed that HRM strength was a key mediator of the HRM-performance relationship. Collins and Smith (2006) found that HRM practices were positively related to the social climate in terms of trust, cooperation, and shared codes and languages, which themselves influence knowledge exchange and combination and, consequently, affect firm financial performance. In accord with these studies on climate, Arthur and Boyles (2007) reviewed the literature and defined HR climate as "shared employee perceptions and interpretations of the meaning of HR principles, policies and programs in their organization." Understandably, employees' perceptions of their HRM systems and work climates influence their job satisfaction and organizational commitment (Wang & Hwang, 2012). Moreover, Gelade and Ivery (2003) showed that work climate partially mediated the positive relationship between HR practices and firm financial performance. Furthermore, those findings are also consistent with the concept of person-organization fit, which contains the idea that shared characteristics between individuals and the organization create culturally based competencies (Werbel & DeMarie, 2005).

We argue that personalized HRM is more positively related to a favorable HR climate than comparable standardized HRM is, because a key feature of personalized HRM is its ability to address an individual employee's needs and preferences and provide tailored HRM practices that best serve each employee. For instance, unlike traditional standardized training programs, personalized learning is tailored to individual employees' different learning paths and styles and is more effective than traditional approaches. Similarly, personalized rewards maximize employees' preferences

by allowing them to select compensation and benefit plans that best meet their individual needs. Personalized HRM can also give employees a stronger sense of control, which can positively influence the HR climate. Consequently, we expect the HR climate of personalized HRM to be better than the HR climate of comparable standardized HRM.

Proposition 3. *Personalized HRM is more positively related to a favorable HR climate than is comparable standardized HRM.*

2.3. Flexibility

Human resources flexibility refers to the skills and behaviors required to achieve firms' strategic goals (Wright & Snell, 1998). In particular, drawing on Sanchez (1995), Wright and Snell (1998) distinguished two types of HR flexibility: resource flexibility, which refers to the applicability of HRM across different situations (i.e., "the extent to which they [resources] can be adapted and applied across a variety of situations"), and coordination flexibility, which denotes the malleability of HRM (i.e., "how quickly the practices can be resynthesized, reconfigured and redeployed").

Personalized HRM allows organizations to provide personalized training, performance management, and rewards that best suit the unique needs of individual employees and effectively support the organizations' goals. By best addressing an individual's specific needs and preferences, personalized HRM is applicable to a variety of situations and, hence, enhances the resource flexibility of HRM. Personalized HRM can also lead to more flexible coordination of HRM, because it allows organizations to quickly and effectively implement targeted practices that meet their strategic goals.

Organizational flexibility refers to the capability to "scan the environment, evaluate markets and competitors, and to quickly accomplish reconfiguration and transformation ahead of competition" (Teece, Pisano, & Shuen, 1997). By improving firms' HR flexibility, personalized HRM also enhances the flexibility of its organizations, because HR flexibility is a strong predictor of organizational flexibility. We propose that employees' ability to quickly adapt to the fast-changing environment at the micro level significantly relates to their firms' organizational flexibility at the macro level. For example, personalized recruitment offers a targeted and customized approach that enables organizations to find "the right candidate at the right time" (Karra, 2019). Personalized performance management provides continuous, responsive, and individualized feedback, or real-time feedback, and also the toolkits that best suit employees' career development goals. By quickly meeting the developmental goals of employees, organizations can swiftly close the skill gap and develop an appropriate skill reservoir to achieve greater flexibility.

Proposition 4. *Personalized HRM is positively related to* (*a*) *HR flexibility and* (*b*) *organizational flexibility.*

2.4. The returns on investment of HRM

Due to the significant initial investment and potential costs associated with monitoring and maintaining personalized HRM systems, personalized HRM is a form of high-investment HRM (Chadwick, Way, Kerr, & Thacker, 2013). However, many believe that the benefits of implementing personalized HRM can outweigh the costs, even in the short run. This can result in higher ROI than traditional HRM approaches do, because personalized HRM is better at serving individual employees' needs, helps organizations optimize HRM flexibility, and improves the overall effectiveness of HRM.

Still, due to personalized HRM's individualized approach, establishing and maintaining its systems requires a substantial

initial investment. For example, to implement effective personalized recruitment and selection, organizations must gather or purchase relevant data, and that can require substantial upfront costs. Artificial intelligence and the ability to conduct appropriate HR analytics are essential to the success of personalized staffing. For a personalized performance management and rewards system to function properly, organizations must regularly collect data or monitor employee performance at the individual level, and that may require AI to reduce the substantial workload associated with such personalized performance management.

Similarly, personalized training provides personalized learning solutions that are based on individuals' different learning paths and progress. Adaptive personalized learning utilizes AI to continuously improve the experience and effectiveness of learning. However, personalized learning − especially adaptive learning using AI − requires considerable initial investment and continuous data collection to deliver the most effective and efficient training. Although there are no empirical studies on the ROI of personalized HRM to date, Ben-Gal (2019) offered an ROI-based review of HR analytics and showed that workforce planning, selection, and recruitment tended to result in the highest ROI, which suggests a high potential ROI from personalized HRM via HR analytics and AI in those areas. In addition, one recent study on information technologies, Big Data, and cloud technologies for Taiwanese accounting firms has shown that investment in these technologies improved the services they offered and thus enhanced organizational performance (Lee, 2021).

Despite the high upfront costs, however, personalized HRM is highly effective at recruiting, motivating, and training talent, and we expect organizations to recoup its costs even in the short run. Similarly to the ways that FANG uses personalization to connect with their customers, organizations can use personalized HRM to better serve their employees and attract, develop, and retain top talents. For instance, Rockwood (2017) noted that a cloud-based personalized learning system, Amplifire, which involves "short, frequent multiple-choice quizzes and games" using adaptive AI, helped a 2800-employee helicopter company named Air Methods to "reduce by half the number of in-person, instructor-led training sessions" and also "halved the duration of its new onboarding program from 10 days to five," as Amplifire replaced the firm's previous, traditional webinar system. In summary, we argue that although an organization may incur substantial initial upfront costs in setting up personalized HRM programs and practices, that organization is likely to recoup its high initial investment, even in the short run, because of the potential benefits derived from more effective and efficient HRM, which optimizes productivity and performance using AI or advanced HR analytics. Such performance benefits can outweigh the costs of the personalized HRM system and yield greater ROI than traditional approaches do.

We propose that whereas the initial investment in setting up personalized HRM is higher than it is in introducing standardized HRM, the net returns on the investment in personalized HRM are likely to be higher in the long run − even in short periods of time for some organizations. For instance, personalized learning has been shown to be more effective and efficient than traditional one-size-fits-all training programs. The computer giant IBM uses machine learning to give employees advice on which training programs they should take (Tambe et al., 2019). In recent years, there has been a growing interest in adaptive learning, which refers to a technology-based educational method which uses computers as interactive teaching and training devices which provide individual learning programs to learners based on data which is gathered throughout the training/learning process (ELM Learning, 2022). As ELM Learning suggested, adaptive learning creates personalized learning experiences that best suit individuals' different learning paths, improve efficiency and effectiveness, and save considerable time for trainees through personalized approaches. Therefore, personalized learning enhances employees' productivity by improving their knowledge, skills, and abilities in an effective and efficient manner.

Personalized performance management and career planning are also becoming increasingly popular. Deloitte (2017) reported that 79 percent of surveyed executives regarded the redesign of performance management toward greater flexibility as being a high priority. It has been argued that continuous personalized performance management is more effective than traditional annual performance evaluation because employees benefit most from timely and specific feedback and consequently are likely to be highly motivated to deliver superior performance. Human resource technologies also enable managers to provide real-time feedback using online platforms. Similarly, personalized career planning or career pathing can outperform traditional approaches because it addresses employees' differing personal career development goals and better serves their career advancement needs, which, according to the perspective of person-organization fit (Kristof, 1996), should enhance the compatibility between employees and the organization. For example, the computer program Quine uses the career progression of previous employees to provide career advice to current employees (Tambe et al., 2019). Artificial intelligence can potentially create personalized career recommendations. Career development centers at universities can also use AI to conduct and analyze mock interviews using emotion recognition technology, thereby improving students' interview skills (Kaplan & Haenlein, 2019).

In summary, we propose.

Proposition 5. *The initial investment in personalized HRM is higher than it is in comparable standardized HRM.*

Proposition 6. *The ROI of personalized HRM is higher than it is in comparable standardized HRM.*

2.5. Firm financial performance

Previous strategic HRM research has shown the robust positive impact of HPWPs on firm financial performance through causal chains linking HPWPs, HR, and organizational outcomes (e.g., Batt & Colvin, 2011; Delery & Doty. 1996; Han, Kang, Oh, Kehoe, & Lepak, 2019; Huselid, 1995; Sun, Aryee, & Law, 2007). For example, Jiang et al.'s (2012) meta-analysis demonstrated that the ability-motivation-opportunity dimensions of HR systems have been shown to be positively related to firm financial performance through the improvement of human capital and employee motivation, and in turn, that improved motivation subsequently reduces voluntary turnover and enhances operational outcomes such as productivity, innovation, and customer service.

Most of the previous strategic HRM research has adopted a cross-sectional research design to analyze the impacts that particular HPWPs, HR dimensions, or overall HR systems have on firm financial performance across organizations, but rarely has previous research examined whether HPWPs are consistently implemented as standardized HR practices for all employees, or as customized or personalized HR practices that vary across individuals within organizations. Although previous strategic HRM research has shown the well-established, robust, positive impacts that training programs, performance management, incentives, rewards, and participation have on firm financial performance (e.g., Chuang & Liao, 2010; Delery & Doty, 1996; Fey, Björkman, & Pavlovskaya, 2000; Wright, McCormack, Sherman, & McMahan, 1999), a research gap remains in terms of how personalized HRM affects firm financial performance.

As already noted, we conceptualize personalized HRM as a subset of HPWPs that varies across employees. In accord with prior strategic HRM research, we expect that personalized HPWPs will have a significant positive impact on firm financial performance. As is illustrated in Fig. 1, following prior causal chains linking HRM and firm financial performance, we argue that personalized HRM leads to superior firm financial performance by improving employee productivity via enhancing employees' ability and motivation and by maximizing a favorable HR climate, HR flexibility, and the ROI of HRM. Personalized HRM essentially consists of HPWPs that meet individual employees' specific needs and preferences. Using advanced HR technologies and AI, personalized HRM helps to optimize the attraction, development, and retention of top talent.

Proposition 7. *Personalized HRM is more positively related to firm financial performance than is comparable standardized HRM.*

2.6. Strategy as a moderator

Porter (1980) distinguished differentiation and cost leadership as two generic competitive strategies for firms. Differentiation focuses on innovation and strives to produce higher-quality or differentiated products and services, whereas cost leadership centers on reducing costs and competing to offer lower prices. The success of differentiators depends largely on a pool of highly skilled and innovative employees (e.g., Youndt, Snell, Dean, & Lepak, 1996). For example, Pham and Jordan (2009) argued that information technology (IT) human resources are among the most important factors that influence organizational competency and performance differentiation. For firms that are differentiators, employees must have heightened flexibility and competency in order to be innovative. Personalized best supports the differentiation strategy by optimizing both fit and flexibility. By contrast, firms that are cost leaders compete to offer low prices by minimizing labor costs and making minimal investment in their employees. Those firms tend to emphasize managerial control and cost minimization by adopting standardized practices and using relatively low-skilled employees (MacDuffie, 1995).

Relatedly, Neal, et al , (2005) showed that competitive strategies moderate the positive HRM-productivity link. Following that line of research, we argue that the positive impacts of productivity are greater in firms with a differentiation strategy than the impacts are in firms with a cost leadership strategy. Although personalized HRM creates a greater ROI, its benefits are especially pronounced for differentiators because personalized HRM, in such forms as personalized talent management, is a worthwhile investment intended to serve a highly skilled and motivated workforce. Meanwhile, such positive impacts are less prominent for cost leaders, who typically rely on a low-skilled workforce.

Proposition 8. *The positive relationship between personalized HRM and productivity is stronger for organizations pursuing a differential strategy than for organizations pursuing a cost leadership strategy.*

3. Implications of AI job replacement theory for personalized HRM

The AI job replacement theory (Huang & Rust, 2018) suggests that four types of intelligence (i.e., mechanical, analytical, intuitive, and empathetic) are required for service jobs, and that organizations choose appropriate combinations of humans and machines to complete their objectives and tasks. In particular, as Huang and Rust (2018) explained, mechanical intelligence refers to "the ability to automatically perform routine, repeated tasks," analytical intelligence refers to "the ability to process information for problem-solving and learn from it (Sternberg, 1984, 2005),"

intuitive intelligence refers to "the ability to think creatively and adjust effectively to novel situations," and, last, empathetic intelligence refers to "the ability to recognize and understand other peoples' emotions, respond appropriately emotionally, and influence others' emotions (Goleman, 1996)." In this section, we use the AI job replacement theory to analyze HR tasks associated with personalized HRM and to discuss how HR professionals and AI can work jointly to effectively and efficiently provide personalized HRM.

Many HR functions involve a significant amount of repetitive, routine tasks, such as screening job applicants, preparing employment records, and processing payroll. Such mechanical tasks in HRM are susceptible to outsourcing, offshoring, and automation. Given the recent significant growth in HR-related technologies and software systems, analytical HR tasks, such as analyzing rewards policies and HR planning, are becoming candidates for automation. Although HR analyses are often required to perform HR tasks that are mainly analytical in nature, the successful completion of analytical HR tasks often depends on advanced HR analytics and AI. One primary type of personalized HRM uses AI-facilitated recommendation engines and machine learning to provide employees with personalized HRM advice on training, compensation, and career planning.

Because AI-related technologies are growing at an exponential rate, the timeframe of the discussion is also extremely important. In accord with Sueyoshi's (2002) remarks on AI and human intelligence, we expect that AI's main competitive advantage over human HR professionals will be in the area of mechanical and analytical intelligence, both now and in the near future. Although AI may be capable of intuitive and empathetic intelligence and thus able to fully replace HR professionals, we believe that will happen only in the distant future, because computerization and AI currently face three key bottlenecks: perception and manipulation, creative intelligence, and social intelligence (Frey & Osborne, 2017), which are key aspects of intuitive intelligence. Currently, HR professionals are essential to the performance of the intuitive and empathetic tasks that constitute a significant portion of HR jobs, such as addressing employee relations issues, dealing with complaints and disputes, administering disciplinary actions, and firing employees. Many such HR functions require an understanding of why problems arise and an ability to empathize with employees. However, it remains unclear when AI will be able to perform these intuitive and empathetic tasks competently without sacrificing the quality of HRM. For example, intuitive intelligence is required in order to understand why employees are underperforming and then to create effective, innovative solutions to address that issue. Although AI may be able to accomplish such intuitive tasks in the future, it has difficulty achieving them today.

Furthermore, many HR jobs require high empathetic intelligence. Undoubtedly, interacting with people is a primary function of HR jobs. Drigas and Papoutsi (2019) argued that emotional intelligence — a key component of empathetic intelligence — is essential to the success of HR professionals. For example, to resolve disputes or deal with difficult situations, HR professionals often must engage in emotional labor — defined as "the act of expressing organizationally desired emotions during service transactions" (Morris & Feldman, 1996). Empathetic AI is the most advanced type of AI, and currently its applications are extremely limited (Huang & Rust, 2018) — it simply is not able to perform emotional labor and communicate with employees in an empathetic manner. Therefore, we expect the amount of intuitive and empathetic intelligence required for personalized HRM tasks to be negatively related to the adoption of AI, meaning that currently such tasks should be performed by human HR professionals instead of by AI.

In summary, we argue that, for today and the near future.

Proposition 9. *The mechanical and analytical intelligence required for personalized HRM tasks is positively related to the adoption of AI in HRM.*

Proposition 10. *The intuitive and empathetic intelligence required for personalized HRM tasks is negatively related to the adoption of AI in HRM.*

4. Discussion

4.1. Theoretical contributions

Despite the growing popularity of personalized HRM in recent years, few conceptual and empirical studies have systematically theorized and tested its impacts. In response, this conceptual paper sets the theoretical groundwork for future empirical research on personalized HRM. By best serving employees' differing individual needs and preferences, as well as optimizing the effectiveness of recruitment, training and development, performance management, and rewards and recognitions, personalized HRM can create additional value on top of the positive impacts of other HPWPs. In essence, personalized HRM shifts the focus of strategic HRM research away from whether certain HRWPs are implemented and what their impacts are, and directs it toward how HPWPs are implemented and whether personalized HRM approaches are more effective than standardized HRM approaches are. We contribute to the literature on HR analytics and AI by demonstrating that these advanced technologies can enable the implementation of personalized HRM, which in turn can positively impact individual motivation and performance, and subsequently, can enhance organizational performance.

The resource-based viewpoint (Barney, 1991; Wright, Dunford, & Snell, 2001; Wright, McMahan, & McWilliams, 1994) suggests that HRM can provide a competitive advantage for firms. Proponents argue that a set of barriers then may prevent the competitors from acquiring the same or similar resources — barriers such as the causal ambiguity of the competitive advantage, path dependence, the high costs of imitation, and so forth (Acedo, Barroso, & Galan, 2006; Barney, 1991; Boxall, 1996; Wright et al., 1994). Causal ambiguity refers to the complexity that exists not only in the external competitive environment but also within the daily operational processes of the firm, and it leads to an ambiguity of the causal relationship between various resources and different levels of performance. The condition of path dependence is associated with the social complexities within a firm and the time-bound value and attributes of the firm's resources. The high cost of imitation reflects the large amount of time and the high capital consumption that are needed for imitating the competitive advantage resources and therefore may prevent other firms from imitating.

The resource-based view can actually be applied as a bridge between HR and strategic management (Barney, 1991; Wright et al., 2001). A firm's human capital pool, which contains a skillful and highly motivated workforce, is thus considered to have a strong potential to form sources of a sustainable competitive advantage (Wright et al., 1994, 2001). Drawing on a resource-based view of firms (Barney, 1986, 1991), we argue that personalized HRM, enabled by HR analytics and AI, offers a sustained competitive advantage for organizations because its type of HRM system is much more difficult for other organizations to imitate than traditional one-size-fits-all HRM systems are, as a result of high causal ambiguity and path dependence created via the complex personalized HRM system. By using the personalized process and principles of recommendation, HRM options, and HRM programs and practices, a firm will be able to build a highly differentiated and customized human capital pool that can be expected to be exceedingly valuable, rare, inimitable, and sustainable. In accord with the resource-based view (Barney, 1991; Wright et al., 1994), highly favorable employee and organizational outcomes can be achieved by personalized HRM systems, because such systems are much more complex to imitate and possess greater causal ambiguity than comparable standardized HRM systems do. Because individual employees may experience or choose different HPWPs, it is nearly impossible for other organizations to replicate the same HRM experience for their employees. Because the core competencies created through these operational adjustment and system-building processes likely can be sustained for a longer cycle (Wright et al., 2001), we argue that personalized HRM can bring sustained advantages in the long run.

Furthermore, an organization may gain a competitive advantage through matching individuals to its operational and cultural needs (Werbel & DeMarie, 2005), and therefore, one can see that person-organization fit possesses strategic value to an organization. Personalized selection, training, assessment, and reward processes can form a system that can provide support according to individual employees' needs and values, and it can ensure that the individuals' knowledge, skills, abilities, and values meet organizational expectations. In this paper, we argue that by tailoring their HR to individual employees' unique needs, organizations should be able to better align employees' knowledge, skills, abilities, and interests with the organization's objectives, and that tailored approach can enhance the person-organization fit and in so doing create strategic values.

Becker and Huselid (2006) urged scholars to carefully examine the important question of why the quality of human resource management systems varies significantly across organizations. In other words, why do firms reporting similar sets of HPWPs differ significantly in terms of the beneficial effects of HPWPs? This paper helps to answer that question by suggesting that firms differ significantly in terms of how they implement HPWPs, and posits that firms which are capable of offering personalized HRM enjoy greater beneficial effects from HPWPs. For example, suppose that two comparable firms, both reporting selective recruitment and extensive training, are captured in an HRM study. Firm A implements a one-size-fits-all standardized training program, while firm B adopts a personalized recruitment and learning approach. The previous, standard strategic HRM methodology can capture selective recruitment and training only as two separate HPWPs, or as an aggregated index of a high-performance work system.

However, such approaches do not consider the HRM differentiation in the implementation of HPWPs within organizations. This paper proposes that personalized HRM, as reported in firm B, will create greater positive effects on firm performance. Therefore, we provide an initial theoretical background on personalized HRM that centers on HRM differentiation within organizations, and we urge future HRM studies not only to examine between-firm differences in HRM but also to consider how HRM practices are implemented within organizations. Instead of focusing on whether certain HPWPs are implemented, future strategic HRM research may also wish to collect data on how HPWPs are implemented (i.e., does the company adopt a personalized, standardized, or hybrid model of HRM?).

This paper also contributes to the academic debate over HRM fit and flexibility by proposing that personalized HRM is a means of improving organizational ambidexterity (e.g., Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013; Patel, Messersmith, & Lepak, 2013; Raisch & Birkinshaw, 2008). The orthogonal perspective of HRM fit and flexibility suggests that fit and flexibility are orthogonal to each other and that a "strategic tension" exists between current performance and future adaptation (Boxall & Purcell, 2000;

Gerhart, 2007; Lengnick-Hall & Lengnick-Hall, 1988), whereas the complementary perspective argues that fit and flexibility can coexist and complement each other (Miles & Snow, 1984; Milliman, Glinow, & Nathan, 1991; Wright & Snell, 1998). Personalized HRM can quickly respond to the unique needs of individual employees and often involves the use of advanced technology to collect, track, and analyze data, thus allowing it to establish HRM systems that best serve business objectives. Consequently, personalized HRM improves organizational ambidexterity by simultaneously enhancing both fit and flexibility. In summary, this paper supports the complementary perspective and argues that personalized HRM positively contributes to organizational ambidexterity (Patel et al., 2013) by simultaneously enhancing both fit and flexibility.

4.2. Managerial implications

This study offers not only a theoretical background for future empirical research on personalized HRM, it also presents several important managerial implications. Personalized HRM, as a promising future goal for strategic HRM, broadens the ways in which HRM creates a unique and sustained competitive advantage for organizations. We have sought to inform business leaders and HR managers about how to use personalized HRM approaches and AI to optimize the value creation of HRM systems and take the quality and ROI of HRM systems to the next level.

First, organizations must carefully weigh the costs and benefits of personalized HRM approaches. Moving away from the traditional one-size-fits-all HRM and toward partially or completely personalized HRM requires significant initial investments, especially in HR technologies and AI, and potentially incurs higher administrative expenses compared with the traditional standardized approaches. Due to its personalized nature, the success of personalized HRM depends significantly on firms' ability to collect relevant data at the individual level and to monitor performance. Although establishing and maintaining a personalized HRM system may require a huge initial investment, however, as we discussed earlier, the benefits may surpass the costs even in the short run. For example, personalized learning approaches tend to be more effective than traditional learning approaches. Because employees can focus their time and energy on the materials that they need more time to digest, personalized learning can be more effective than one-size-fits-all approaches, thereby saving time for employees and per-capita training costs for employers. That said, although personalized HRM can be cost-effective, managers must consider the higher potential costs due to the adverse selection effect. For example, personalized training and reward plans, such as flexible benefit plans, often result in higher utilization rates and perhaps higher costs compared with those from one-size-fits-all HRM programs, because employees are able to select the training and rewards that they need the most.

Second, we have pointed out that given the current developmental stage of AI technologies, managers must consider how to incorporate AI into personalized HRM and in which functional areas of HRM to use it. Building on Huang and Rust's (2018) AI job replacement theory, we propose that currently, AI is more likely to replace HR tasks that are mechanical or analytical in nature. Managers can potentially save both time and valuable resources by adopting AI to automate mechanical tasks or to facilitate the analytical tasks of HR professionals. Nevertheless, we recognize that establishing and maintaining a personalized HRM system requires much more than mechanical and analytical intelligence. Indeed, many HR jobs also require substantial intuitive and empathetic intelligence that, at this stage, AI cannot replace. Supporting that perspective, Locke and Spender (2011) pointed out that some HR professionals tend to be skeptical about "numbers" and

have the sentiment that "human agency counterbalances the seeming objectivity of numbers or rather comes into play where numbers leave off or fail." Greasley and Thomas (2020) further argued that HR practitioners should stay away from completely quantitative forms of HR analytics, especially on subjective issues such as employee well-being. In that case, how can we best optimize the performance of a personalized HRM system? First, simple, repetitive, and routine tasks could be performed by AI and supervised by HR professionals. Second, analytical tasks should be performed by HR professionals with the assistance of analytical tools and AI. Unfortunately, some researchers warn that in practice HR professionals lack basic analytical skills (Edwards & Edwards, 2019; Greasley & Thomas, 2020). Therefore, for HR analytics to succeed, it will be vital to ensure that HR professionals are properly trained to adopt these analytical technologies.

Marler and Boudreau (2017) noted that the success of HR analytics also depends on the capabilities of the e-HRM software system and data quality. Arifin and Tajudeen (2020) further argued that organizations need to consider the information security of implementing HR analytics. Organizations should act to facilitate the individual adoption of HR analytics by removing barriers in the decision process (Vargas, Yurova, Ruppel, Tworoger, & Greenwood, 2018). Thus, at the current developmental stage of AI, only HR professionals can effectively perform the intuitive, creative, social, relational, and empathetic HR tasks. It is difficult to use AI to perform such tasks without significant losses in the quality of HR.

Third, drawing on the contingency perspective, the design of personalized HRM must consider both HRM fit and flexibility, and it must align internally with HRM systems and externally with business strategies (e.g., Becker & Gerhart, 1996; Han et al., 2019; Shih & Chiang, 2005). Jackson and Schuler (1995) provided an integrative framework on internal and external contexts of HRM. To successfully implement personalized HRM, managers must consider whether personalized HRM fits the external environment, including legal restrictions, culture, politics, unions, and labor markets, as well as industry characteristics. For example, in the U.S., flexible benefit plans are subjected to Section 125 of the Internal Revenue Code, which stipulates the tax savings arrangements for cafeteria plans. Managers must also consider whether personalized HRM fits internal organizational contexts, such as their firms' structure, size, stage of the business life cycle, and strategy (Jackson & Schuler, 1995). For instance, as we proposed earlier, differentiator firms benefit more from personalized HRM than cost leaders do. The contingency perspective also suggests that personalized HRM works best for an organization with an individualistic culture, because such HRM systems secure greater synergy from the alignment.

4.3. Limitations and future research

This conceptual paper provides an initial theorization of personalized HRM and its impacts. The study's propositions should be examined empirically in future studies. Instead of simply proposing a positive impact of personalized HRM on a set of HR and organizational outcomes (i.e., employee ability, motivation, productivity, HR climate, the ROI of HRM, and the firm's financial performance), we have compared the personalized HRM approach with the traditional, standardized HRM approach, and we argue that personalized HRM outperforms standardized HRM approaches in multiple aspects. Nevertheless, future studies should consider the dark side and the limitations of personalized HRM, introduce moderators, and explore situations in which standardized HRM approaches provide superior outcomes. For example, this paper has not considered how the effectiveness of personalized HRM varies across different groups of employees. Applying Lepak and Snell's

(1999) conceptualization, although personalized HRM can be a better choice for internally-developed, commitment-based strategic employees who have high value and uniqueness in terms of human capital, standardized HRM may be a more cost-effective choice for nonstrategic, contracting employees who have limited value and uniqueness in terms of human capital. Future studies may also wish to consider the limitations of HR analytics and AI in the development of personalized HRM. For instance, Tambe et al. (2019) identified several major challenges involved in introducing AI into HRM — including the complexity of HR outcomes, employee reactions, small data, fairness, and ethical and legal considerations, but few empirical studies have been conducted to explore these issues. In summary, future empirical studies should examine the generalizability of the propositions of this study, the dark side and limitations of personalized HRM, and the boundary conditions of the proposed relationships.

Second, we argue that in terms of degree, the personalization of HRM varies on a continuum. Personalized HRM is not a dichotomous construct but, rather, a continuous variable ranging from completely standardized HRM (i.e., no personalized HRM) to completely personalized HRM (i.e., HRM varies across individuals). In other words, personalized HRM constitutes a differentiated HRM architecture that varies from no HRM differentiation (i.e., standardized HRM is applied to all employees) to full HRM differentiation (i.e., completely personalized HRM). Given the complexity of HRM systems, the degree of personalized HRM can vary from partially to completely personalized approaches. The extent to which HRM should be personalized, the functional areas of HRM that should be personalized, and how personalized HRM should be implemented, are important research questions that remain largely unexplored.

Third, although this paper discusses the impacts of personalized HRM on the HR climate, a research gap remains in terms of how a hyper-personalized HRM experience may influence employee attitudes toward jobs, career and organizations, perceived fairness, absenteeism, turnover intention, and other behavioral outcomes. In particular, future studies may wish to examine how individual differences influence employees' experiences of personalized HRM and how environmental and organizational factors moderate those relationships.

Fourth, future research would also be wise to examine the implications of personalized HRM for international HRM and labor relations issues. Although we have identified mechanical intelligence and analytical intelligence as potential predictors of personalized HRM, future studies should consider exploring other antecedents of personalized HRM.

Lastly, despite the numerous advantages of personalized HRM we discuss in this paper, it should be noted that personalized HRM via advanced HR analytics and AI remains relatively rare today because as many researchers have noted, HR analytics are not yet widely implemented for advanced analysis (Marler & Boudreau, 2017). For example, Fernandez and Gallardo-Gallardo noted (2021), that most companies employ HR analytics only for routine tasks — 45 percent for aggregating HR-related data, and 41 percent for headcount cost analysis — whereas only 10 percent use it extensively.

5. Conclusion

While companies, such as FANG, use personalization to attract and retain customers, and more and more organizations are introducing personalized HRM to better attract, develop, and retain their best employees. Personalized HRM represents the next generation of HRM, which is characterized by the adoption of advanced HR analytics and AI to optimize the quality of HRM as well as its

ROI. Altogether, this paper advances the strategic HRM literature by providing a conceptual framework of personalized HRM and discussing its theoretical and managerial implications. We have introduced a two-level causal conceptual framework explaining the causal mechanisms that link personalized HRM and firm financial performance. Building on the theories of individual differences and person-organization fit, we have proposed and explained why personalized HRM outperforms traditional HRM approaches in terms of enhancing employee ability and motivation, productivity, HR climate, flexibility, the ROI of HRM, and consequently, the firm's financial performance. We have argued that personalized HRM conveys a unique and sustained competitive advantage for organizations by offering the positive effects of additional beneficial performance on top of the positive impacts of HPWPs. Lastly, we have discussed the theoretical and managerial implications and outlined how HR analytics and AI can be used in developing and maintaining a personalized HRM system. Thus, this conceptual paper provides the basis for future empirical studies on personalized HRM.

References

Acedo, F. J., Barroso, C., & Galan, J. L. (2006). The resource-based theory: Dissemination and main trends. *Strategic Management Journal, 27*(7), 621–636.

Ackerman, P. L., & Humphreys, L. G. (1990). Individual differences theory in industrial and organizational psychology. In M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 1, pp. 223–282). Palo Alto, CA: Consulting Psychologists Press.

Aral, S., Brynjolfsson, E., & Wu, L. (2012). Three-way complementarities: Performance pay, human resource analytics, and information technology. *Management Science, 58*(5), 913–931.

Arifin, M., & Tajudeen, F. (2020). Impact of human resources information systems in the military environment. *Asia Pacific Management Review, 25*(4), 198–206.

Arthur, J. B., & Boyles, T. (2007). Validating the human resource system structure: A levels- based strategic HRM approach. *Human Resource Management Review, 17*, 77–92.

Bal, P. M., & Dorenbosch, L. (2015). Age-related differences in the relations between individualised HRM and organisational performance: A large-scale employer survey. *Human Resource Management Journal, 25*, 41–61.

Barney, J. B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review, 11*, 656–665.

Barney, J. (1991). Special theory forum the resource-based model of the firm: Origins, implications, and prospects. *Journal of Management, 17*, 97–98.

Barringer, M. W., & Milkovich, G. T. (1998). A theoretical exploration of the adoption and design of flexible benefit plans: A case of human resource innovation. *Academy of Management Review, 23*, 305–324.

Batt, R., & Colvin, A. J. (2011). An employment systems approach to turnover: Human resources practices, quits, dismissals, and performance. *Academy of Management Journal, 54*, 695–717.

Becker, B., & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal, 39*(4), 779–801.

Becker, B. E., & Huselid, M. A. (2006). Strategic human resources management: Where do we go from here? *Journal of Management, 32*, 898–925.

Becker, B. E., Huselid, M. A., & Beatty, R. W. (2009). *The differentiated workforce: Transforming talent into strategic impact*. Boston: Harvard Business Press.

Ben-Gal, H. C. (2019). An ROI-based review of HR analytics: Practical implementation tools. *Personnel Review, 48*(6), 1429–1448.

Bowen, D. E., & Ostroff, C. (2004). Understanding the HRM-firm performance linkages: The role of the "strength" of the HRM system. *Academy of Management Review, 29*, 203–221.

Boxall, P. (1996). The strategic HRM debate and the resource-based view of the firm. *Human Resource Management Journal, 6*(3), 59–75.

Boxall, P., & Purcell, J. (2000). Strategic human resource management: Where have we come from and where should we be going? *International Journal of Management Reviews, 2*, 183–203.

Cable, D. M., & Judge, T. A. (1996). Person–organization fit, job choice decisions, and organizational entry. *Organizational Behavior and Human Decision Processes, 67*(3), 294–311.

Chadwick, C., Way, S. A., Kerr, G., & Thacker, J. W. (2013). Boundary conditions of the high- investment human resource systems — small — firm labor productivity relationship. *Personnel Psychology, 66*, 311–343.

Chatman, J. A. (1989). Improving interactional organizational research: A model of person- organization fit. *Academy of Management Review, 14*(3), 333–349.

Chuang, C., & Liao, H. (2010). Strategic human resource management in service context: Taking care of business by taking care of employees and customers. *Personnel Psychology, 63*, 153–196.

Cole, N. D., & Flint, D. H. (2004). Perceptions of distributive and procedural justice in

employee benefits: Flexible versus traditional benefit plans. *Journal of Managerial Psychology, 19*, 19—40.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high technology firms. *Academy of Management Journal, 49*, 544—560.

Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal, 39*, 802—835.

Deloitte. (2017). "Performance management play a winning hand" in 2017 Deloitte global human capital trends. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Deloitte. (2018). "New rewards: Personalized, agile and holistic" in human capital trends 2018. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Drigas, A., & Papoutsi, C. (2019). Emotional intelligence as an important asset for HR in organizations: Leaders and employees. *International Journal of Advanced Corporate Learning, 12*, 58—66.

Edwards, M., & Edwards, K. (2019). *Understanding predictive HR analytics: Mastering the HR metric*. Kogan Page. https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Edwards, M. R., Charlwood, A., Guenole, N., & Marler, J. (2022). HR Analytics: An emerging field finding its place in the world alongside simmering ethical challenges. *Human Resource Management Journal*. https://doi.org/10.1111/1748-8583.12435. Online publication.

Fernandez, V., & Gallardo-Gallardo, E. (2021). Tackling the HR digitalization challenge: Key factors and barriers to hr analytics adoption. *Competitiveness Review: An International Business Journal, 31*(1), 162—187.

Fey, C. F., Björkman, I., & Pavlovskaya, A. (2000). The effect of human resource management practices on firm performance in Russia. *International Journal of Human Resource Management, 11*, 1—18.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change, 114*, 254—280.

Gelade, G. A., & Ivery, M. (2003). The impact of human resource management and work climate on organizational performance. *Personnel Psychology, 56*, 383—404.

Gerhart, B. (2007). Horizontal and vertical fit in human resource systems. *Perspectives on Organizational Fit, 1*, 317—348.

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal, 47*, 209—226.

Goleman, D. (1996). *Emotional intelligence: Why it can matter more than IQ*. London, UK: Bloomsbury Publishing.

Greasley, K., & Thomas, P. (2020). HR analytics: The onto-epistemology and politics of metricised HRM. *Human Resource Management Journal, 30*(4), 494—507.

July 5 Gulati, A. (2016). Attract top talent with personalized rewards. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Han, J. H., Kang, S., Oh, I. S., Kehoe, R. R., & Lepak, D. (2019). The goldilocks effect of strategic human resource management? Optimizing the benefits of a high performance work system through the dual alignment of vertical and horizontal fit. *Academy of Management Journal* (in press).

Hickman, L., Saef, R., Ng, V., Woo, S. E., Tay, L., & Bosch, N. (2021). Developing and evaluating language-based machine learning algorithms for inferring applicant personality in video interviews. *Human Resource Management Journal*, 1—20.

Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research, 21*(2), 155—172.

Huang, X., & Verma, A. (2018). Industry-and firm-level determinants of employment relations in China: A two-level analysis. *International Journal of Human Resource Management, 29*, 399—419.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal, 38*, 635—672.

Huselid, M. A., & Becker, B. E. (2011). Bridging micro and macro domains: Workforce differentiation and strategic human resource management. *Journal of Management, 37*, 421—428.

Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resources management effectiveness as determinants of firm performance. *Academy of Management Journal, 40*, 171—188.

Jackson, S. E., & Schuler, R. S. (1995). Understanding human resource management in the context of organizations and their environments. *Annual Review of Psychology, 46*(1), 237—264.

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Acad. Manag. J., 55*(6), 1264—1294.

Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta- analytic review. *Journal of Applied Psychology, 87*(4), 797.

Kaplan, A., & Haenlein, M. (2019). Siri, siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons, 62*, 15—25.

March 4 Karra, S. (2019). The hyper-personalization of HR Services. Forbes. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Kristof, A. L. (1996). Person—organization fit: An integrative review of its conceptualizations, measurements, and implications. *Personnel Psychology, 49*, 1—49.

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals'fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology, 58*(2), 281—342.

Learning, E. L. M. (2022). *Adaptive learning vs. personalized learning: A guide to both* (2022, February 9). Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors (2022, February 9). Retrieved from.

Lee, C. (2021). Analysis on the strategy of improving management consulting business performance: Evidence on a management consulting company established by an accounting firm. *Asia Pacific Management Review, 26*(3), 137—148.

Lengnick-Hall, C. A., & Lengnick-Hall, M. L. (1988). Strategic human resources management: A review of the literature and a proposed typology. *Academy of Management Review, 13*, 454—470.

Lepak, D. P., & Snell, S. A. (1999). The human resource architecture: Toward a theory of human capital allocation and development. *Academy of Management Review, 24*(1), 31—48.

Le, H., Robbins, S. B., & Westrick, P. (2014). Predicting student enrollment and persistence in college stem fields using an expanded P-E fit framework: A large-scale multilevel study. *Journal of Applied Psychology, 99*, 915—947.

LinkedIn. (2018). The rise of HR analytics. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Lin, Z., Kelly, J., & Trenberth, L. (2011). Antecedents and consequences of the introduction of flexible benefit plans in China. *International Journal of Human Resource Management, 22*, 1128—1145.

Litz, R. A., & Stewart, A. C. (2000). Trade name franchise membership as a human resource management strategy: Does buying group training deliver "true" value for small retailers? *Entrepreneurship: Theory and Practice, 25*, 125—135.

Locke, R. R., & Spender, J. C. (2011). *Confronting managerialism: How the business elite and their schools threw our lives out of balance*. Bloomsbury Publishing.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review, 48*, 197—221.

Margherita, A. (2022). Human resources analytics: A systematization of research topics and directions for future research. *Human Resource Management Review, 32*(2).

Marler, J., & Boudreau, J. (2017). An evidence-based review of HR analytics. *International Journal of Human Resource Management, 28*(1), 3—26.

Messersmith, J. G., Patel, P. C., Lepak, D. P., & Gould-Williams, J. S. (2011). Unlocking the black box: Exploring the link between high-performance work systems and performance. *Journal of Applied Psychology, 96*, 1105—1118.

Miles, R. E., & Snow, C. C. (1984). Fit, failure and the hall of fame. *California Management Review, 26*, 10—28.

Milliman, J., Glinow, M. A. V., & Nathan, M. (1991). Organizational life cycles and strategic international human resource management in multinational companies: Implications for congruence theory. *Academy of Management Review, 16*, 318—339.

Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review, 80*, 252—283.

Mohammed, A. (2019). HR analytics: A modern tool in HR for predictive decision making. *Journal of Management, 6*(3), 51—63.

Morley, M. J. (2007). Person-organization fit. *Journal of Managerial Psychology, 22*(2), 109—117.

Morris, J. A., & Feldman, D. C. (1996). The dimensions, antecedents, and consequences of emotional labor. *Academy of Management Review, 21*, 986—1010.

Neal, A., West, M. A., & Patterson, M. G. (2005). Do organizational climate and competitive strategy moderate the relationship between human resource management and productivity? *Journal of Management, 31*, 492—512.

O'Reilly, C. A., III, & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of Management Perspectives, 27*, 324—338.

February 11 Osburn, J. J. (2019). Why personalized recruiting matters now more than ever. Retrieved from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Patel, P. C., Messersmith, J. G., & Lepak, D. P. (2013). Walking the tightrope: An assessment of the relationship between high-performance work systems and organizational ambidexterity. *Academy of Management Journal, 56*, 1420—1442.

Pearce, J. L., Tsui, A. S., Porter, L. W., & Hite, J. P. (1995). Choice of employee-organization relationship: Influence of external and internal organizational factors. *Research in Personnel and Human Resources Management, 13*, 117—151.

Pham, T., & Jordan, E. (2009). Information technology resources and business performance: An Australian context. *Asia Pacific Management Review, 14*(4), 407—426.

Porter, M. E. (1980). *Competitive strategy*. New York: Free Press.

Pramod, B., Kashinath, G., & Vineet, K. (2021). HR analytics market. https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Qamar, Y., & Samad, T. (2021). Human resource analytics: A review and bibliometric analysis. *Personnel Review, 51*(1), 251—283.

Raisch, S., & Birkinshaw, J. (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of Management, 34*, 375—409.

April 17 Rockwood, K. (2017). A personalized approach to corporate learning. Retrieved. from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Sackett, P. R., Lievens, F., Van Iddekinge, C. H., & Kuncel, N. R. (2017). Individual differences and their measurement: A review of 100 years of research. *Journal of

Applied Psychology, 102(3), 254.

Sanchez, R. (1995). Strategic flexibility in product competition. *Strategic Management Journal, 16*, 135–159.

September 27 Schmidt, L. (2016). Why personalization is the key to recruiting. Forbes. Retrieved. from https://www.elsevier.com/journals/asia-pacific-management-review/1029-3132/guide-for-authors.

Shih, H., & Chiang, Y. (2005). Similarities of human resource management systems between Taiwanese MNC headquarters and subsidiaries in China. *Asia Pacific Management Review, 10*(3), 215–224.

Sternberg, R. J. (1984). Toward a triarchic theory of human intelligence. *Behavioral and Brain Sciences, 7*, 269–315.

Sternberg, R. J. (2005). The theory of successful intelligence. *Interamerican Journal of Psychology, 39*, 189–202.

Sueyoshi, T. (2002). Holographic intelligence: The essence of Japanese management. *Asia Pacific Management Review, 7*(2), 191–218.

Sun, L. Y., Aryee, S., & Law, K. S. (2007). High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. *Academy of Management Journal, 50*, 558–577.

Takeuchi, R., Lepak, D. P., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology, 92*, 1069–1083.

Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review, 61*, 15–42.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*, 509–533.

Ting, I., & Lin, Y. (2011). What is missing? Using data mining techniques with business cycle phases for predicting company financial crises. *Asia Pacific Management Review, 16*(4), 535–549.

Trung, T. Q., & Swierczek, F. W. (2009). Skills development in higher education in Vietnam. *Asia Pacific Business Review, 15*(4), 565–586.

Uen, J., & Chien, M. (2010). The relationships among commitment-based HR systems, psychological contracts, and role behaviors: An empirical study of knowledge workers in taiwan's high-tech firms. *Asia Pacific Management Review, 15*(1), 43–55. https://doi.org/10.6126/APMR.2010.15.1.04

Van Iddekinge, C. H., Roth, P. L., Putka, D. J., & Lanivich, S. E. (2011). Are you interested? A meta-analysis of relations between vocational interests and employee performance and turnover. *Journal of Applied Psychology, 96*, 1167–1194.

Vargas, R., Yurova, Y., Ruppel, C., Tworoger, L., & Greenwood, R. (2018). Individual

adoption of HR analytics: A fine grained view of the early stages leading to adoption. *International Journal of Human Resource Management, 29*(22), 3046–3067.

Verquer, M. L., Beehr, T. A., & Wagner, S. H. (2003). A meta-analysis of relations between person–organization fit and work attitudes. *Journal of Vocational Behavior, 63*, 473–489.

Wall, T. D., & Wood, S. J. (2005). The romance of human resource management and business performance, and the case for big science. *Human Relations, 58*, 429–462.

Wang, M., & Hwang, K. (2012). The impact of employee perceptions of human resource management systems on job satisfaction and organizational commitment during privatization the transformations of privatization: An empirical study of telecommunications corporations in taiwan. *Asia Pacific Management Review, 17*(3), 321–342.

Werbel, J. D., & DeMarie, S. M. (2005). Aligning strategic human resource management and person–environment fit. *Human Resource Management Review, 15*(4), 247–262.

Wright, P. M., Dunford, B., & Snell, A. S. (2001). Human resources and the resource based view of the firm. *Journal of Management, 27*(6), 701–721.

Wright, P. M., McCormack, B., Sherman, W. S., & McMahan, G. C. (1999). The role of human 3 resource practices in petro-chemical refinery performance. *International Journal of Human Resource Management, 10*, 551–571.

Wright, P. M., & McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management, 18*, 295–320.

Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: A resource-based perspective. *International Journal of Human Resource Management, 5*(2), 301–326.

Wright, P. M., & Snell, S. A. (1998). Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of Management Review, 23*(4), 756–772.

Youndt, M. A., & Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance. *Journal of Managerial Issues, 16*, 337–360.

Youndt, M. A., Snell, S. A., Dean, J. W., & Lepak, D. P. (1996). Human resource management, manufacturing strategy, and firm performance. *Academy of Management Journal, 39*, 836–866.

Zhou, Y., Zhang, Y., & Liu, J. (2012). A hybridism model of differentiated human resource management effectiveness in Chinese context. *Human Resource Management Review, 22*(3), 208–219.