

The Role of Human Resource Management in Improving Firms' Productivity

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Abstract: This is a systematic literature review which focuses on the role of human resource management (HRM) on the productivity of firms as well as more specifically when the proclaimed productivity gains can be said to be plausible. A systematic search of academic publisher websites, bibliographic databases, and backwards referenced materials found 74 records of which 20 empirical studies were finally selected as the inclusion criterion. These studies include manufacturing and services, large companies as well as small businesses and designs that include cross-sectional surveys and longitudinal panels, quasi-experiments and a field experiment. Three themes can be identified in the synthesis. First, potential productivity improvements are most also linked with coherent HRM systems, particularly, packages of selective staffing, training, employee involvement, flexible work design, employment security, and performance-rewarded, as opposed to isolated practices. Second, micro-underpinnings of productivity enhancement are best seen through human-capital development and incentive mechanisms; the literature on training outlines of panel, quasi-experimental, and experimental designs have some of the most compelling causal results and spillovers. Third, the HRM-productivity relationship is conditional, two-way and cost sensitive: the circumstances in the industry, the manufacturing strategy, the quality of the implementation, labour cost, turnover rate, and the past performance of the organization have an effect on the strength and orientation of the noticed effects. The literature is where it is methodologically stronger than a mere cross-sectional narrative, yet causal confidence is still imbalanced due to the large number of influential studies based on individual informants, contemporaneous measures, heterogeneous proxy of productivity, and non-random adoption of HRM. The review finds the claim that HRM can enhance productivity is defensible, but conditional: it must be practiced to create internally coherent systems, to create employee capability and motivation useful, to match the production context, and to do this in a way that gives benefits to surpass the costs.

Keywords: Human resource management; firm productivity; high-performance work systems; training; employee involvement; strategic HRM; systematic literature review

1. Introduction

The use of labor, capital, technology, and organization resources in relation to the amount and quality of output produced are main central concerns of firms. Still in most organizations productivity is considered more as an operational or technological issue. This perspective undermines the contribution of the human resource management. Technologies, workflows, and capital equipment do not produce output on their own; their value relies on employees with skills to use them, the motivation to discretionally apply more effort, the chance to solve problems, and the conditions in the organization to bring the work together in a reliable fashion. The HRM can thus impact productivity by determining the quality, deployment, motivation and retention of human capital.

The administrative functions of HRM are not limited to the hiring, payroll and compliance functions that were traditionally considered as the relevances of productivity. Strategic HRM considers recruitment and selection, training and development, performance management, compensation, employee participation, work design, career systems, the security of employment and HR function itself as mutually reinforcing processes by which a firm can impact employee capability and behavior. This systems perspective is important in the sense that weaknesses of links that exist among practices can give rise to productivity losses. The low effectiveness of training can occur when



employees are not granted decision-making power to apply new skills; the incentive compensation can encourage narrow benefits at the cost of quality; selective hiring can not yield returns, when the turnover rate is high; and participation plans can enhance labor costs, without linked increases in returns, when managers fails to genuinely decentralize decisions. Therefore, the question does not necessarily lie in the aspect of whether firms are employing specific HR practices, but rather whether these practices are internally consistent and consistent with the context of production.

The second problem is the definition of productivity. Output per employee, sales per employee, value added per hour, plant efficiency, quality-adjusted output, downtime, scrap, productivity ratings and standard financial indicators are some examples of output that has been used to measure studies in HRM. These effects are interrelated but do not interchange. Because the environments of the market can lead to an increase in sales per employee instead of workforce efficiency, value added can include both capital intensity and labour contribution, and that which the manager can rank can be perceptually biased. A critical review, then, should be able to differentiate between direct operational productivity indicators and larger performance outcomes and not treat all positive associations between the organization as the same piece of evidence to support productivity.

The third one is a question of causality. Successful companies can afford to spend more of their money on advanced HR solutions, and this makes it reverse causal. In a response to poor performance, firms can also use new HR practices and this would result in a negative selection problem. Industry differences, differences in technology, the relative composition of the labour force, unionization, competitive strategy, and quality levels of managers may further confound the relationship. Cross-sectional studies are still useful to identify the patterns, longitudinal, fixed-effects, quasi-experimental, and experimental research designs are required to clarify whether any HRM shifts are antecedents to, and can reasonably explain, any alteration in productivity.

This review is a response to these questions in terms of a systematic synthesis of empirical data on HRM and firm productivity. The Research Question is: What is the contribution that HRM makes to productivity, on what practices and mechanisms is the greatest contribution most effective, in what organizational circumstances do the effects differ, and how confident should one be about the causal relationship relying on the available evidence? Instead of combining a high number of positive coefficients into cumulative evidence, the review compares articles based on the quality of designs, level of analysis, productivity measure and the fit of context. The objective is to create a balanced account on when HRM will enhance productivity and reasons as to why the same practices can have less strong, no effect or more expensive consequences in different contexts.

2. Methods

2.1 Review Design and Reporting Framework

The research design was based on the systematic literature review (SLR) and the rationale of PRISMA 2020 was used to conduct search, screening, eligibility, and inclusion. PRISMA is a reporting tool and not a quality-rating tool; this is why the study-selection process became transparent, but the quality of methods was evaluated independent of it (Page et al., 2021). The review was an evidence synthesis (qualitative) project and not a statistical meta-analysis since the studies sampled discussed HRM and productivity substantially differently and had heterogeneous units of analysis, time horizons, and estimation techniques.

2.2 Search Strategy

Research published year 1990 to 26th of September 2026 were searched. Robust publication platforms and bibliographic versions at the sites of Academy of Management, JSTOR, Wiley, SAGE, Elsevier/ScienceDirect, NBER, RePEc/IDEAS, OECD repositories, and general scholarly web indexing were used in the review. The search strings were a combination of HRM terms and productivity and level of outcome firms. Basic combinations were: human resource management AND productivity; high-performance work systems AND productivity; high-involvement work practices AND labor productivity; training AND firm productivity; performance pay AND

productivity; employee involvement AND productivity; staffing practices AND organizational performance; investment in HR function AND labor productivity. Further searching of underlying studies was done through backward citation search of highly relevant empirical articles.

2.3 Eligibility Criteria

Population/setting: Private-sector firms, establishments, plants, production lines, or workplaces. A single experiment at the worker-level level was included since it had a direct test of employer-provided training and objective productivity giving potentially unmatched evidence of an underlying HRM driving factor.

Exposure/intervention: HRM practices, HR systems, investment in HR functions, training and development, work design, employee participation, staffing, employment security or performance-based pay.

Outcome: A measure of organizational productivity that is directly or indirectly related to, or is a measure of, labor productivity, output per worker, value added, sales per worker, operational efficiency, quality-adjusted production, or a performance outcome that is directly or closely linked to productivity.

Study design: Empirical quantitative studies with enough detail of methodologies. Cross-sectional could be included, but the causal assertions were evaluated with greater suspicion than longitudinal, quasi-experimental or experimental designs.

Exclusions: Conceptual papers, a review that involves a meta-analysis as primary evidence, a study that assessed only attitudes with no relation to organizational performance, research that involved HRM and the periphery, and research that lacked a unique contribution to the productivity issue.

2.4 Screening and Study Selection

The systematic searches and citation chasing resulted in 74 records. Upon screening 56 titles and abstracts were obtained after eliminating 18 duplicates. At this point, twenty-seven records were dismissed since they were not within the review question. There were 29 reports identified to seek the full-text evaluation; one was not available to retrieve in enough details. Eight of the 28 reports reviewed have been eliminated due to lack of a firm- or establishment-level productivity outcome, a conceptual or review article, not isolating an HRM exposure, or redundant representation of a dataset previously represented but lacking an analytical contribution. The end result of the qualitative synthesis thus had 20 empirical studies. The selection process is summarized in figure 1.

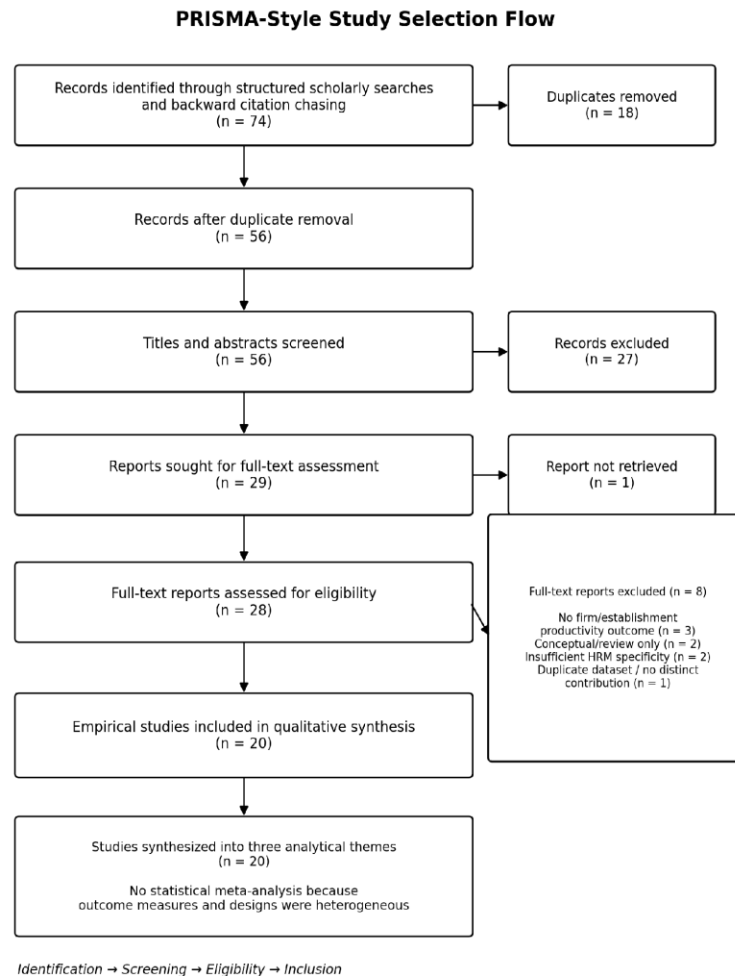


Figure 1. PRISMA-style flow diagram for study selection.

2.5 Data Extraction and Synthesis

In both studies, the data were gleaned on a country and sector, sample and unit of analysis, HRM exposure, study design, productivity or performance measure, leading finding as well as methodological strengths and weaknesses. It was a thematic and not vote-counting synthesis. Comparison of studies was done on convergence, contradiction and boundaries conditions. Specific emphasis was placed on the measurement of HRM: coherent system or isolated practices; the measure of productivity direct objective measures or manager reported measures; whether HRM and productivity were measured at the same time or during a duration of time; were unobserved heterogeneity, reverse causality, met; and credible interpretation of causality.

2.6 Methodological Quality Appraisal

A quality of the methodology was measured on a dimension of five (temporal ordering, the productivity measure objectivity, data sources independence, selection/endogeneity control, and external validity). No study was omitted based on the reason of being cross-sectional; since various substantial HRM studies adopt the cross-sectional design, the strength of conclusions was informed by the appraisal. Research based on longitudinal panels, plant-level production data, within-unit comparison, fixed effects, difference-in-differences or randomized assignment were considered more powerful evidence to causal inferences. Single-informant surveys as cross-sectional surveys

were viewed mainly as evidence of association particularly where both the respondent was providing a report on the achievement of one of the HR practices and the others.

3. Findings

3.1 Characteristics of Included Studies

The 20 used studies span over thirty years of research and differ greatly in their designs, context and outcome measurement. In the case of this type of review the results are included in Table 1 and the succinct methodological critique it gives. This is analytically convenient since it is now possible to conduct comparisons between broad cross-firm association and narrowly defined evidence presented by plant-level panel, quasi-experiments, and experimental designs.

Study	Context / sample	HRM focus	Design & productivity outcome	Main result	Critical appraisal
Arthur (1994)	30 U.S. steel minimills	Commitment vs. control HR systems	Cross-sectional plant comparison; productivity, scrap, turnover	Commitment systems showed higher productivity, lower scrap, and lower turnover.	Direct manufacturing outcomes; narrow industry and non-random system adoption limit generalizability/causality.
Bartel (1994)	U.S. manufacturing businesses, 1983–1986	Formal employee training	Longitudinal business data; labor-productivity growth	Firms adopting formal training after initially weak productivity experienced larger productivity growth.	Temporal ordering stronger than cross-sectional work; firms may select training in response to prior underperformance.
Huselid (1995)	968 publicly held U.S. firms	High-performance work practices (HPWPs)	Large cross-sectional survey linked to firm outcomes; turnover, productivity, financial performance	HPWPs were associated with lower turnover and higher productivity and financial performance.	Broad sample and multiple outcomes; single-period HR measurement leaves endogeneity and common-method concerns.
MacDuffie (1995)	62 automotive assembly plants internationally	HR bundles integrated with flexible production	Cross-plant comparison; productivity and quality	Coherent HR bundles combined with flexible production were associated with superior productivity and quality.	Objective plant outcomes and international sample; observational design and auto-sector specificity.
Youndt et al. (1996)	97 manufacturing plants	Human-capital-enhancing HR systems and manufacturing strategy	Survey with operational outcomes; employee productivity, machine	Human-capital-enhancing HR systems were most effective when aligned with quality	Strong contingency test; modest sample and contemporaneous measurement limit causal inference.

			efficiency, customer alignment	manufacturing strategy.	
Ichniowski et al. (1997)	36 steel finishing lines in 17 firms	Innovative HR systems: teams, training, security, incentives, flexible jobs	Detailed line-level production data; panel/within-industry analysis	Bundles of innovative practices produced substantially higher productivity than traditional work systems.	One of the strongest operational designs; highly specific production setting limits external validity.
Lazear (2000)	Safelite Glass Corporation	Shift from hourly pay to piece rates	Before/after personnel-economics study; worker output	Output per worker rose by about 44%; both incentive and worker-selection effects contributed.	Clear policy change and objective output; single-firm setting and simultaneous selection effects constrain generalization.
Guthrie (2001)	164 New Zealand firms with 100+ employees	High-involvement work practices	Firm survey; retention and sales-per-employee productivity	Greater use of high-involvement practices was associated with higher productivity and retention; turnover interacted with system intensity.	Objective/financial productivity in subsample supports result; single-informant and cross-sectional HR measure remain limitations.
Black & Lynch (2001)	Nationally representative U.S. establishments, matched panel 1987–1993	Workplace practices, human capital, IT	Panel production-function models; plant productivity	How practices were implemented mattered more than simple adoption; joint decision making plus incentives and worker education were linked to higher productivity.	National data and panel estimators improve credibility; complex bundles make individual practice effects hard to isolate.
Cappelli & Neumark (2001)	National probability sample of U.S. establishments	High-performance work practices and employee power	Longitudinal design; productivity, labor costs, efficiency	Productivity effects were statistically weak, while labor costs per employee rose; overall labor efficiency showed little change.	Important counterevidence with strong temporal design; measurement error and heterogeneous implementation may attenuate effects.
Batt (2002)	354 U.S. telecommunications call centers	Skills, participation, teams, pay, security	National establishment survey; quit rates and sales growth	High-skill, participatory systems were associated with lower quits and higher sales growth; quits partially	Useful service-sector mechanism evidence; sales growth is not a pure productivity metric and design is observational.

				mediated performance.	
Way (2002)	446 U.S. firms with fewer than 100 employees	High-performance work systems	Cross-sectional small-business survey; turnover and labor productivity	HPWS predicted lower turnover, but did not consistently produce labor-productivity benefits exceeding added labor costs.	Valuable small-firm boundary condition; cross-sectional design and measurement constraints reduce causal certainty.
Datta et al. (2005)	132 publicly traded U.S. firms	High-performance work systems	Survey linked to COMPUSTAT; labor productivity	HPWS were positively related to labor productivity, but effects varied with industry capital intensity, growth, and differentiation.	Objective firm data and explicit moderators; 15% response rate and cross-sectional HR measure create selection/endogeneity concerns.
Dearden et al. (2006)	British industry panel, 1983–1996	Work-related training	Panel econometrics ; value added per hour and wages	A 1 percentage-point increase in training was associated with roughly 0.6% higher value added per hour and 0.3% higher wages.	Long panel and direct productivity measure are strengths; industry aggregation can conceal firm-level heterogeneity.
Almeida & Carneiro (2009)	Panel of large Portuguese firms	Firm investment in formal job training	Firm panel; training costs, productivity, returns	Returns to formal training were substantial for training firms and comparable with other forms of capital investment.	Detailed cost data strengthen economic interpretation; large-firm sample may not generalize to smaller employers.
de Grip & Sauermann (2012)	Employer training field experiment in service work	Work-related training	Random assignment with pre/post worker performance	Training raised own productivity by about 10% and generated positive peer spillovers without lowering quality.	Strong causal identification; worker-level and single operational setting limit direct firm-level generalization.
Shin & Konrad (2017)	2,228 Canadian workplaces observed in 2001, 2003, 2005	High-performance work systems	Three-wave cross-lagged longitudinal analysis; productivity	Earlier HPWS predicted later productivity, but earlier productivity also predicted later HPWS, indicating reciprocal causality.	Excellent evidence on temporal reciprocity; survey-based productivity and model dependence remain limitations.
Subramony et al. (2021)	475 U.S. organizations across sectors	Financial investment in the HR function; HR	Cross-sectional organizational analysis;	HR-function investment predicted labor productivity, especially where a	Directly examines the HR function itself; cross-sectional design cannot

		professionalization; HPWS	labor productivity	larger share of HR staff held professional/technical roles; interaction with HPWS suggested substitution/diminishing returns.	establish investment causality.
Morikawa (2021)	Japanese firm panel, 2009–2018	Employer-provided training stock	Firm-level panel; labor productivity and wages	Training significantly contributed to productivity, with larger elasticities in services than manufacturing; gains were shared with workers through wages.	Long panel and sector comparison are strengths; non-random training investment leaves residual selection risk.
Martins (2021)	Portuguese firms applying for EU-supported training grants	Subsidized employee training	Difference-in-differences using successful vs. unsuccessful applicants; productivity, value added, sales, jobs, exports	Additional training increased productivity and several firm outcomes, often by at least 5% and sometimes 10% or more.	Strong quasi-experimental design and rich administrative data; treatment is a subsidized-training program, so external validity to unsubsidized HR investment is uncertain.

Table 1. Characteristics and methodological appraisal of included empirical studies.

3.2 Theme 1: Productivity Gains Are Systemic—Bundles, Complementarity, and Implementation Matter More Than Practice Counts

The overwhelming motif in the evidence is that HRM is most likely to enhance productivity when practices are implemented as a system, as opposed to single interventions. Arthur (1994) demonstrated that mills with commitment oriented HR systems were more productive and scrappier as compared to the mills operating on control oriented systems. MacDuffie (1995) was able to make the same conclusion in 62 automotive factory assembly facilities: team based work, high-volume training, contingent compensation and other high-commitment initiatives were most effective in conjunction with flexible production system. This argument was enhanced by a study of Ichniowski et al. (1997) who utilized production-line data in great detail, discovering that steel finishing line with clusters of innovative practices outdid lines with traditional narrow jobs and close supervision. These studies, combined, imply the complementarity of training, incentives, flexible work design, employment security, and participation: training, incentives, flexible work design, employment security and participation enhance the returns to each other as employees are granted concurrent capability, motivation, and opportunity to use that effort productively.

There is extensive cross-firm-wide support of this systems reading, but with less forceful causal power. In a report by Huselid (1995), having high-performance work practices had lower turnover, increased productivity, and improved financial performance in almost 1,000 firms based in the United States. A similar finding was made by Guthrie (2001) who believed that high-involvement work practices were more related to increased productivity and retention in 164 New Zealand firms. Datta et al. (2005) established a positive correlation between high-performance

work systems and labor productivity in 132 publicly-traded U.S. companies, but the effect varied according to industry capital intensity, growth and differentiation. The overlap is significant, but the three studies heavily used survey-reported HR practices, which were measured at a single point of time. The findings thus indicate strong correlation across situations that is not conclusive evidence that the HR systems were the factors that resulted in the productivity differences.

The most powerful opposing argument is that of designs that look into quality of implementation or expenses and not the existence of practices. In a national panel, Black and Lynch (2001) established that productivity-wise, the practice of workplace was conditional on the way, rather than on mere adoption. Conversely, Cappelli and Neumark (2001) have had insignificant evidence of high-performance practices with regard to productivity after the introduction of longitudinal design and labor costs; there was an increase in the compensation of employees and no significant variation in the overall labor efficiency. Way (2002) also discovered that high-performance work systems in small U.S. companies was more regularly associated with reduced turnover as compared to productivity increase that would be high enough to justify labor expenses. These researches render the universalistic assertion. The creation of productive capacity by HR systems can be done procedurally but formally whereas gross output gains cannot be seen as equal to net productivity gains once higher compensation and implementation costs are considered.

3.3 Theme 2: Human-Capital Development and Incentives Provide the Clearest Causal Pathways to Productivity

The HRM area where the evidence most obviously advances in an association to causation is in training. Bartel (1994) discovered that manufacturing firms that implemented formal training following the nonproductivity wet spurts generate much productivity growth that followed at a quicker pace. Dearden et al. (2006) calculated, using a long British panel, that a one percentage-point increase in training would increase value added per hour, on average, by about 0.6 percentage points as opposed to an increase of about 0.3 percentage points in wages. Almeida and Carneiro (2009) employed firm training-cost data, which were detailed, and they concluded that there were high returns that were gained by firms practicing formal job training. All these studies argue in favor of a human-capital mechanism training can increase output as it makes workers more competent to do their jobs, to adjust to technology, to resolve production issues, to impart knowledge.

The causal case is more convincing in more recent designs, where de Grip and Sauermann (2012) randomly allocated workers to training and found that there was a positive effect of about 10 percent in individual productivity, and distinct positive spillovers of productivity to untreated colleagues. There was also no evidence of output gains that were attained through quality reduction in the experiment. Martins (2021) took advantage of a training-grant scheme in Portugal and tracked the successful and non-successful applicants on a long-term basis. The extra training added productivity, value added, sales, employment, and exports, with some effects of 5-10 percent or more. The fact that both studies utilize designs that minimize self-selection into training makes the studies more convincing compared to cross-sectional HR surveys according to which skill investment in itself can lead to productivity improvement.

Evidence on training is not the same in sectors. Based on Japanese firm-level panel data (2009-2018), Morikawa (2021) discovered that training stock increased labor productivity especially in service firms, and that a portion of this is shared with employees in the form of higher wages. This augments the previous literature that is manufacturing based and proposes that the value of training lies in the interaction of the human capital and the production technology. In services, output is commonly obtained by direct means of employee knowledge, judgment, and interaction with customers; marginal returns to training can thus be greater than where physical capital dominates the relationship between output and training.

A second, more limited causal route is through incentive design. A study by Lazear (2000) recorded about a 44 percent rise in output per worker since Safelite converted its work system to piece rates, disregarding the hourly rates. Nevertheless, the gain also portrayed behavioral reactions among the current workers and a choice of more productive workers into the company, implying the inability of incentive effects to be viewed purely as motivation. The result is effective but context-dependent: piece rates are the most successful when the performance of an individual can be

assessed and quality is able to be safeguarded. The larger implication is that HRM could enhance productivity where productive behavior becomes valued by the employee due to rewards, and misleadingly encourage productivity in overall organizational performance since incentives are poorly defined.

3.4 Theme 3: The HRM–Productivity Relationship Is Contingent, Reciprocal, and Cost-Sensitive

The third theme is related to boundary conditions. Youndt et al. (1996) concluded that the link between human-capital-enhancing HR systems and strong operational performance was only found to occur when the HR systems were consistent with a quality-centered manufacturing strategy. This pattern was also exhibited by Datta et al. (2005), as industry attributes modified the returns to high-performance work systems in productivity. Black and Lynch (2001) focused on implementation, and Batt (2002) discovered that the benefits of participatory, skills-based HR practices differed between customer groups within call centers. The findings are a challenge to a universal best-practice interpretation. The same HR practice may be useful in one production system and unhelpful in another since there is a difference in the possibility to transform employee capability and discretion into output with various technologies, various markets, and various work arrangements.

The turnover also seems to be a significant process as opposed to a distinct HR deliverable. Arthur (1994), Guthrie (2001), and Batt (2002) all associated more powerful HR systems with lower employee turnover, as well as improved organizational performance. Batt (2002) also demonstrated that sales growth to some extent mediated quit rates. When companies invest in training, team habits, or tacit knowledge, turnover takes away part of that investment, and it can disrupt production. Retention thus extends the span in which HR investments are able to pay off. But as shown by Way (2002), turnover reduction is not necessarily accompanied by sufficient productivity to warrant the consideration of the entire labor outlay of an intensive HR system, particularly in small companies, where resources are tighter.

The reverse-causality issue is pointed out through another issue existing in the literature, though it is oftentimes underscored. In their study based on three waves of data collected in 2,228 Canadian workplaces, Shin and Konrad (2017) discovered that prior high-performance work systems were associated with future productivity, whereas prior productivity was associated with future adoption of high-performance practices. So far as productive organizations can spare the slack resources and managers trust it to make more investment in HRM. These results are not to deny the HRM effect, but what is suggested is that this creates a reinforcing cycle whereby HRM can enhance productivity and productivity can afford subsequent HRM development. Subramony and others (2021) further lend depth to the assertion by demonstrating that investment in the HR function itself was a foreteller of labor productivity, especially in cases where HR was better professionalized, though there was a likelihood of substitution or diminishing returns suggested by the interaction between HR and the previous high-performance systems. Productivity further relies not just on the practices that face the employees but also on how well the HR function can cater, organize, and modify them.

Collectively, the facts favour a conditional, but not absolute conclusion. HRM will be most effective in boosting productivity when it advances pertinent staff knowledge and aptitude, focuses power on productive activities, grants workers ample freedom to activate their abilities, eliminates unnecessary human capital losses through turnover, and aligns output approach to strategy. The probability of quantifiable benefits decreases when they are assigned symbolically, when labor expenses grow more quickly than production, when the labor system does not allow employees to apply new skills, and when HRM is measured by such broad financial measures, which are dominated by market and capital forces.

4. Discussion

4.1 What the Evidence Supports

The synthesis suggests that HRM may enhance the productivity of firms, yet the best form of that assertion is not that all of the advanced HR practices raise output. On the contrary, there is evidence that it is a systems-and-

mechanisms interpretation. Both Manufacturing environments associating superior productivity with complementary HR bundles have been repeatedly highlighted in studies where the production system favors problem solving, teamwork, breadth of skills, and discretionary effort (Arthur, 1994; MacDuffie, 1995; Ichniowski et al., 1997). The positive relationship is replicated by broader firm studies in cross-country, cross-industry (Huselid, 1995; Guthrie, 2001; Datta et al., 2005), and by panel evidence, which focuses on implementation, not nominal adoption (Black and Lynch, 2001). The HRM implication for practical use is that HRM must be considered as an organizational architecture and not a checklist.

The most convincing evidence is presented in the literature on training, which shows that there is a core HR intervention that can increase productivity. There is convergence in the previous direction of longitudinal estimates, cost analyses, experimental evidence, and quasi-experimental program evaluation (Bartel, 1994; Dearden et al., 2006; Almeida and Carneiro, 2009; de Grip and Sauermann, 2012; Morikawa, 2021; Martins, 2021). Notably, the mechanisms are economically rational: training increases our usable knowledge and skills and improves adaptation to work processes, which may generate peer spillovers. It is also demonstrated that gains can be distributed among employees in terms of wages, and so the fact that productivity will be increased does not imply that it will go all to the shareholders.

Motivational and temporal processes are provided by incentives and retention. Compensation design can produce a significant output effect in cases where performance can be measured, but effective HR systems are partially linked to productive employees, as demonstrated by Lazear (2000) and Guthrie (2001), and to lower employee exits, as demonstrated by Batt (2002). These results are consistent with the logic that cumulative skill investments yield a higher payoff when workers stick around long enough to utilize what they learn and extract the information, and when remunerations make becoming productive behavior worthwhile. But the same argument can be used as to why ill-designed systems could crash. Real inputs include higher wages, training costs, staffing of HR, and participation costs. Cappelli and Neumark (2001) and Way (2002) are thus relevant in that they both indicate that increased labor costs can either offset gains in gross productivity or the net effect of the entire effect can be ambiguous.

4.2 Methodological Critique of the Evidence Base

Endogeneity is the main methodological limitation of the literature. High-performance HR systems are not implemented in a random way by firms. More advanced HR practices may be more likely to be applied in better-managed or more profitable firms, as productivity may be higher due to reasons not well represented in controls. On the other hand, training or participation can be provided as corrective intervention in case of poor performance of firms. The breadth of cross-sectional studies by Huselid (1995), Guthrie (2001), and Datta et al. (2005) is influential due to their breadth; however, their coefficients cannot alone determine temporal ordering. Empirically, Shin and Konrad (2017) prove this to be a case with both directions of relationship.

Measurement heterogeneity is a second weakness. Others operate directly with operational results (output, scrap, downtime, or value added), but others operate with sales per worker, assessment of productivity as indicated by managers, or financial results. These solutions respond to various questions. The plant-based analyses by Arthur (1994), MacDuffie (1995), and Ichniowski et al. (1997) show alignment between HR practices and the production process, whereas firm-level financial indicators are more susceptible to market demand and capital structure and strategy. This heterogeneity is one reason why a simple pooled effect size would be a falsehood unless a lot of harmonization is done.

A third is common-method bias and a single-informant bias. Most surveys that measure HRM practices strategically have senior HR managers reporting the predominance of practices when organizational performance is determined at or around the same time. Hard financial or administrative results can minimize but cannot eliminate this issue since the HR practices can also be quantified with inaccuracy. Construct validity would be enhanced by multi-source designs, measures of employee experience, and administrative HR records. Also common in the literature, intended HR practices are often used as a measure and not the actual experience of the employees being implemented, even though in the proof of Black and Lynch (2001), the quality of implementation is central.

The opposite limitation is strong causal studies, which have narrow external validity. Lazear (2000) considers one firm; de Grip and Sauermann (2012) a particular training setting; and Ichniowski et al. (1997) a steel finishing line. They are more specific than broad surveys; however, it is not clear that the same effect sizes can be extended to knowledge work, creative work, regulated work, remote work, and small firms. Martins (2021) enhances the presence of external relevance by using data on administrative firms and a quasi-experimental design, yet the sample comprises subsidized training applicants, as opposed to all employers. The evidence base thus offers us a classical trade-off between precision of causation and generalizability.

The strengths of the two traditions should be merged in future studies. Repeatedly measured multi-country employer panels based on natural experiments and with linked administrative productivity documents would allow stronger causal inference without compromised external validity. Researchers are also expected to determine the net productivity when controlling for HR costs, differentiate between adoption and implementation intensity, test lag structures, and model nonlinearities or diminishing returns. Above all, research ought to consider how certain HR practices may be either complements or substitutes in certain types of production technologies and not to equate the optimal existing bundle to all.

4.3 Implications for HRM Practice

To managers, the data implies that the starting point in improving productivity should be the problem of production and not the HR trend. When the problem is that output is limited by the lack of skills, training, and choice, staffing is a direct logical step. As long as talented employees are not able to manipulate work processes, participation and job design prove to be complementary. Retention and job security can safeguard previous investments, should turnover kill the accrued expertise. Where performance can be monitored, and quality is well-protected, rewards based on performance will sharpen incentives. In both cases, the predicted productivity should be spelt out prior to the implementation of the practice.

The HR leaders need to also consider the productivity on a net basis. A program that raises output at the cost of higher wages, training, staffing of HR, or a higher coordination cost may not have a positive net effect on labor efficiency. This is not to say that such practices are bad; they can be retention-friendly, innovation-friendly, quality- and employee wellness-friendly. It does imply that productivity claims should be against the incremental value generated to the total cost of the HR system. Cappelli and Neumark (2001), Way (2002), and Subramony et al. (2021) provide evidence that is particularly handy in outlining the necessity to pay attention to costs, professional HR capacity, and potential diminishing returns.

Lastly, managers need to anticipate change as opposed to a single implementation. According to Shin and Konrad (2017), productivity and HRM consolidate each other in the long run. The emerging performance data can consequently be utilized in the near future to fine-tune the bundle, focus investment on practices with high returns, and eliminate those that incur costs without increasing output. This participatory learning strategy is more aligned with the empirical evidence as opposed to bringing with it a predetermined list of best practices that have worked in some other industry.

5. Conclusion

This was a review of 20 empirical studies focusing on how HRM contributes to better productivity of firms. The evidence does not lend credence to a simplistic argument that an increase in HR practices will automatically lead to an increase in production. Rather, three conclusions are made. To begin with, HRM is most effective when practices are coherent systems that collectively construct employee ability, motivation, and opportunity and are combined with the organization's model of production. Second, human-capital growth- particularly training paid for by employers has the best cause-and-effect record, and incentive compensation can yield big returns in a setting where productivity is measurable and quality ensured. Third, the effects of HRM are contingent; they are bilateral, and their returns are cost-sensitive: effects on performance depend on industry, strategy, the quality of implementation, turnover and labor costs, as well as previous performance.

The general evidence thus tends to point towards a conditional conclusion. HRM may serve as an important means of productivity enhancement, but productivity is a process and not a brand. Companies benefit when HR practices enhance germane aptitude, concentrate energy on valuable activities, empower employees to utilize their learning, and retain the human resources on which the company has spent funds. The best future HRM strategies will be those that apply these mechanisms in a measurable manner, test them out over time, and determine the benefits relative to the total economic price of the system.

6. Limitations

There are a number of limitations to this review. First, the search was systematic and transparent, but based on web-accessible scholarly publishing platforms, bibliographic indexes, and citation chasing instead of an export of all licensed databases. The PRISMA flow is thus the collection of screening results presented in this review, and a journal submission ideally reproduces the strategy in institutional databases like Scopus, Web of Science, or Business Source Complete and stores the complete search strings and screening log.

Second, the studies incorporated are disparate in terms of unit of analysis, HRM measurement, definition of productivity, industry, country, and statistical design. This heterogeneity makes it impossible to plausibly pool the causal effect unless a considerable deal of recoding is done, plus access to the effect-size statistics. In the current assessment, the focus is on the qualitative convergence and contradiction over the one numerical estimate.

Third, the concentration of evidence in manufacturing and larger organisations historically supports evidence-based methods, despite more current investigations adopting services and smaller companies. Digital, creative, platform-based, remote, and highly professional work with output that is hard to view and collective knowledge at the center might have different mechanisms of productivity. Fourth, numerous seminal studies rely on cross-sectional HR metrics and managerial informants, with the remaining risks of reverse causality, common-method bias, and unobserved managerial quality. It attempts to eliminate these weaknesses but cannot get rid of them in the underlying literature by applying methodological weighting in the review.

Lastly, HRM can only be evaluated using productivity as one criterion. Certain practices can enhance the well-being, equity, creativity, resilience, or retention of employees despite the minimal effect on short-run productivity. On the other hand, a practice can increase measured output and increase work or transfer costs to workers. The evidence of productivity in the future should be linked with the results of workers and long-term sustainability of the organization instead of considering output maximization as the sole value criterion.

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