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Organisational accreditation, workforce training and perceptions of performance

Getinet Astatike Haile[1,2]

[1]Department of Industrial Economics, Nottingham University Business School, University of Nottingham, Nottingham, UK

[2]IZA Institute of Labor Economics, Bonn, Germany

Correspondence
Getinet Astatike Haile, Department of Industrial Economics, Nottingham University Business School, University of Nottingham, Jubilee Campus, Wollaton Road, Nottingham NG8 1BB, UK.
Email: getinet.haile@nottingham.ac.uk

Abstract

The paper examines if the 'Investors in People' (IiP) organisational accreditation scheme promoted worker training and organisational performance in Britain using a panel of organisations. DID matching estimators relating to both employee- and employer-assessed training outcomes revealed that IiP status promoted workforce training, but only for private sector organisations. Conversely, losing the status was not found to have a significant training link. On organisational performance, the estimates revealed that gaining (losing) the status had a significant positive (negative) link with managers' perceptions of organisational performance in both sectors. Public sector organisations are reported to have a relative strength in workforce training, which appears to explain the lack of significant training link. The sector may thus require a different scheme to promote workforce training further.

1 | INTRODUCTION

Workforce training is expected to equip workers with new skills and capabilities, which are likely to improve their productivity and commitment, among other positive effects. In turn, a more productive and committed workforce is likely to enhance organisational performance and

competitiveness. Several influential studies have provided both theoretical and empirical evidence on the link between workforce training and productivity (see, e.g. Black & Lynch, 1996; Booth & Bryan, 2005; Dearden et al., 2006; Konings & Vanormelingen, 2015) and thence enhanced organisational performance (see, e.g. Barney, 1991; Huselid, 1995; Macduffie, 1995; Pfeffer, 1994). Policy discourses in Britain have stressed the roles training and skills development can play in enhancing labour productivity. For example, the 2006 Leitch Review of Skills stressed the importance of skills in boosting productivity and the creation of wealth and social justice (Leitch Report, 2006). The CIPD (2017) also emphasised the vital role organisations play in promoting workforce upskilling to achieve improved productivity and economic prosperity. Dowdy and Van Reenen (2014) highlighted the key role organisations play in boosting productivity, stating that although government policy plays a vital role, the realisation of the productivity potential largely hinges on the actions of managers and their organisations.

Labour productivity in Britain is yet to recover to its pre-2008 Great Recession level, having been 13% and 17% below its pre-crisis trend by the end of 2014 and 2019, respectively. Internationally too, Britain's productivity has been trailing behind most of its G7 counterparts even before the recession, with output per hour reported to be 26.2%, 22.8% and 22.6% lower than in Germany, France and the United States, respectively, in 2016 (Blundell et al., 2014; Bryson & Forth, 2015; Harris & Moffat, 2017; ONS, 2015, 2017, 2019).[1] Successive governments have identified workforce training and raising skills levels being vital routes out of the productivity conundrum. There has also been a recent move away from centrally driven or supply-side skills development to an employer-led and market-based approach to meet industrial and local needs (Green & Hogarth, 2016). *Investors in People* (IiP hereinafter) is one such market-led and voluntarist scheme backed by the government, with worker training and skills development as its core. The scheme is broadly regarded as providing a benchmark for good organisational training practice (see De Waal, 2016; Grugulis & Bevitt, 2002; Hoque et al., 2005; Hoque & Bacon, 2008; Smith et al., 2014).

The evidence on whether the IiP scheme achieves its objectives of training and organisational performance is mixed. This calls for firmly establishing if the scheme achieved its main objectives. This paper aims to accomplish this using a panel of organisations surveyed by the 2004 and 2011 Workplace Employment Relations Survey (WERS). The remainder of the paper is organised as follows. Section 2 provides theoretical background and a review of the evidence on the IiP accreditation scheme. Section 3 describes the data and variables used. Section 4 sets out the empirical framework employed. Section 5 presents the empirical results obtained. Section 6 discusses the empirical results before the final section concludes the paper.

2 | THEORY AND RELATED LITERATURE

2.1 | Theoretical background

Human capital theory (Becker, 1964) provides a useful starting point for an appraisal of the IiP standard. The theory stipulates that workers' productivity depends on the stock of knowledge they embody, which is thought to be fostered via general and specific training. General training equips workers with general skills, which are equally productive or transferable across firms and hence solely financed by workers given the assumption of perfect competition. On the other hand, specific training is thought to advance skills specifically suited to the current firm

only. The firm finances specific training anticipating higher productivity margins as returns to its investment. Acemoglu and Pischke (1998, 1999a, 1999b) highlighted in their theory that the distinction between general and specific training is inconsequential. They argue that the current firm holds superior information on its workers vis-à-vis other firms, which gives the firm a monopsony power and associated compressed wage structure. Such labour market imperfection means that training increases the productivity of labour by more than the wage labour receives, thereby encouraging the firm to provide and pay for workforce training even when the training is the general type. Regardless of its nature or the source of financing involved, therefore, the theories suggest a direct link between workforce training and enhanced worker productivity.

A large body of empirical literature provides evidence in support of the link between training and productivity, thus supporting predictions of the human capital theory. Konings and Vanormelingen (2015) estimated the impact of on-the-job training on productivity and wages using Belgian firm-level panel data. They found that a trained worker has a much higher productivity premium over the wage they get paid. Dearden et al. (2006) used a panel of British industries covering the period 1983–1996 and a variety of empirical approaches to find a significantly higher link between workforce training and productivity. Using data from the BHPS covering the period 1998–2000, Booth and Bryan (2005) also found a significant link between employer-financed training and higher wages. Importantly, the positive link they found is significant both at current and future firms, which therefore suggests even higher levels of gains in productivity. Notably, they also found accredited employer-financed training to be more strongly linked with higher wages than unaccredited training. Boothby et al. (2010), based on their study of Canadian manufacturing establishments, concluded that workforce training leads to enhanced productivity growth when combined with new technology. Black and Lynch (1996) have also showed human capital, measured as average educational level in an establishment, to be an important determinant of establishment productivity.

2.2 | The IiP accreditation scheme

The IiP accreditation scheme is a standard in people management that was inaugurated by the UK government in 1991 to improve industrial performance through worker upskilling and development.[2] It is a market-led voluntary scheme, which is currently adopted by some 10,000 organisations in 78 countries worldwide.[3] In its 27-year existence, the scheme has undergone several changes, but its original aim of worker training has remained the central plank. The scheme requires organisations to identify skills gaps within, which it then encourages them to address via workforce training to enhance organisational performance. It provides a benchmark standard in training and development practices against which organisations are assessed before being crowned as IiP accredited on meeting the assessment criteria. Once accredited, organisations use their acquired status and the IiP logo for marketing purposes. The continued use of the logo is subject to routine reviews by the accreditation body, which requires that organisations continue to uphold the principles of the standard. If organisations are found to be in breach of the standard, they risk losing their IiP accreditation status (see De Waal, 2016; Hoque et al., 2005; Hoque & Bacon, 2008; Shury et al., 2012; Smith et al., 2014; Winterbotham et al., 2013, for example).[4] As Grugulis and Bevitt (2002) note, the IiP scheme 'is the most wide-ranging part of the government's NETTs (National Education and Training Targets), and official rhetoric is focused on the need for a high skills economy' (p. 56).

2.3 | Effectiveness of the IiP scheme

Several studies have examined the effectiveness of the IiP scheme on training and organisational performance, often with divergent findings. On the one hand, there are studies conducted by the UK Commission for Employment and Skills (UKCES), the owner of the scheme between 2010 and 2017, which found positive outcomes both in terms of worker training and organisational performance (Shury et al., 2012; Winterbotham et al., 2013). The accreditation body's own recent report also promotes the scheme as efficiency and performance enhancing. It cautions against poor people management, which it noted cost the UK economy to the tune of £84bn in lost efficiency and performance (IiP, 2017). Based on a mixed-methods study, Bourne and Franco-Santos (2010) found differences in managerial capabilities and performance between IiP-accredited and unaccredited organisations noting that IiP accreditation enhanced managerial skills, supported the development of a culture of organisational learning, improved the effectiveness of management development practices, facilitated the creation of a high-performing environment and increased the performance of managers. Alberga et al. (1997) also lent support for the IiP scheme having found evidence that it resulted in positive perceptions of organisational performance and human resource (HR) development.

On the other hand, several other studies found at best mixed results, calling into question the effectiveness of the IiP scheme. Using cross-sectional data from WERS1998, Hoque (2003) concluded that training practice was better, on average, in IiP-accredited organisations than non-accredited ones while in a follow-up WERS2004-based study (Hoque, 2008) found that the proportion of employees without formal training in accredited organisations remained the same between 1998 and 2004, thus questioning the scheme's effectiveness. Hoque and Bacon (2008) examined the extent of change in the proportion of small, medium and large organisations with IiP recognition and the relationship between IiP accreditation and organisational training activity. They found a positive association between accreditation and training provision for managerial, professional and non-managerial workers in large organisations. In medium- and small-sized organisations, on the other hand, the association found is only with higher level non-management and higher levels of management and professional training, respectively. Hoque et al. (2005) discuss about low uptake rate among small organisations, which were offered the least encouragement to engage with the scheme, whereas larger organisations that already had policies and procedures the scheme sought to promote were cherry-picked by consultants. They also highlighted sectoral variations in take-up rate where some industries such as the utilities, transport and communication and public administration sectors had a higher take-up rate. Rayton and Georgiadis (2012) used cross-sectional data from WERS1998 to study the effect of the IiP standard on training and concluded that high-training workplaces self-selected into IiP. They wondered if the IiP standard was of any value in promoting training. Grugulis and Bevitt (2002) conducted a case study in a National Health Service (NHS) hospital trust in the north-west of England. They found that most of the 'soft' HR practices they identified had existed prior to the hospital gaining the IiP status and concluded that accreditation had little, if any, effect on staff training. Recently, Smith et al. (2014) conducted a qualitative study using semi-structured interviews from six UK-based organisations, which are all public sector organisations, and concluded: 'five of the six case study organizations implemented [staff] training and development changes prior to recognition from, or involvement with, IiP' (p. 271). They had implemented their training and development initiatives before their involvement with IiP. These findings may be pointers to

the IiP scheme not being associated with increased training in public sector organisations, where training seems to be commonplace prior to accreditation. The public sector's relative standing in terms of training has generally been well documented. For example, Green et al. (1999) noted that the amount of training received in unionised workplaces was substantially higher than in non-unionised workplaces, whereas Canduela et al. (2012) reported that compared with their public sector counterparts, private sector workers were 5.2% less likely to have had training (in the preceding 3 months) and 5.2% more likely to have never been offered training.

As the preceding review highlighted, the evidence on the link between IiP accreditation and organisational training and performance outcomes thus far is not clear-cut. Most of the studies to date are either based on cross-sectional data (e.g. Hoque, 2003; Hoque, 2008; Rayton & Georgiadis, 2012), which do not permit addressing the organisational self-selection issue the review highlighted, or are qualitative in nature relying on relatively fewer organisations (e.g. Grugulis & Bevitt, 2002; Smith et al., 2014). This paper contributes to the literature in several respects. *First*, it deals with the organisational self-selection issue in a more appropriate manner than prior literature using panel data from a large group of nationally representative organisations. *Secondly*, it implements quasi-experimental analyses to achieve 'like-for-like' comparisons. As detailed in Section 3, this is realised by comparing organisations that adopted IiP for the first time in 2011 (*newly accredited*) with matched organisations that were unaccredited in both 2004 and 2011 (*never accredited*) and organisations that lost their IiP accreditation in 2011 (*de-accredited*) with matched organisations that remained accredited in both 2004 and 2011 (*always accredited*). *Thirdly*, it uses multiple training and performance outcomes, which included training outcomes derived from both employee and employer responses. *Finally*, it also examines whether there are sectoral differences between the private and the public sectors as regards the IiP-related benefits.

3 | DATA

3.1 | Overview of the data

The data for the empirical analysis in this paper come from the 2004 and 2011 British WERS. The WERS series offers the most authoritative source of information on employment relations in Britain. The surveys provide linked employer–employee data representative of all workplaces in Britain with five or more employees (Kersley et al., 2006; Van Wanrooy et al., 2013). Of all the organisations surveyed in 2004 and 2011, 989 were monitored in both waves, thus yielding a panel of 989 organisations. Of these, 76 organisations had to be eliminated due to missing values in some of the key training and accreditation variables, which yielded a panel of 913 organisations as the final sample for the empirical analysis on the training outcomes assessed by employers. The empirical analysis on organisational performance relies on a total of 674 organisations only, because 239 of these 913 panel organisations did not respond to the performance-related questions discussed below. Only 600 of the original 989 panel organisations completed the WERS employee survey, thus representing a reduced initial sample of organisations to start with. Of this initial panel, 66 organisations did not have valid information on the training and accreditation variables. The analysis on the employee response-based training outcome therefore relies on a panel of 544 organisations.

3.2 | Organisational IiP accreditation

The key variable of interest to the paper is IiP status, which is derived from manager' 'yes/no' responses to the question, 'Is (Name of Organisation) accredited as an Investor in People?', which were provided in both the 2004 and 2011 surveys. These responses were used to identify the following four groups of organisations based on their IiP status in the surveys: (i) those that were observed to gain IiP status for the first time in 2011 (*newly accredited*), (ii) those that were observed to have lost their IiP status in 2011 (*de-accredited*), (iii) those that were observed to have IiP status in 2004 and 2011 (*always accredited*) and (iv) those that were observed to have no IiP status in 2004 and 2011 (*never accredited*). These four groups of organisations are then used to determine the 'impacts' of gaining and losing IiP status on training outcomes (using both employee and employer responses) and organisational performance outcomes (based on employer responses).

As summarised in Table 1, the 913 organisations for the analysis on the training outcomes assessed by employers consist of 109, 135, 300 and 369 organisations that were, respectively, *newly accredited*, *de-accredited*, *always accredited* and *never accredited*. Therefore, the 'impact' of gaining IiP, which compares 'newly accredited' and 'never accredited' organisations, relies on a total of 478 organisations, whereas the 'impact' of losing IiP, which compares 'de-accredited' and 'always accredited' organisations, relies on a total of 435 organisations (see top panel of Table 1). The 674 organisations for the performance study consist of 77, 93, 231 and 273 organisations that were, respectively, *newly accredited*, *de-accredited*, *always accredited* and *never accredited*. Therefore, the 'impacts' of gaining (losing) IiP status on organisational performance use 350 (324) organisations (see middle panel, Table 1). The

TABLE 1 Transition probabilities of IiP status, WERS2004 and 2011 panel organisations (%, row)

		WERS2011		
	Training (*employer response-based analysis*)			
		IiP	No IiP	Total (row)
	No IiP	109 (22.80)	362 (77.02)	478 (100)
	IiP	300 (68.97)	135 (31.03)	435 (100)
	Total (%)	409 (44.8)	504 (55.2)	913 (100)
WERS2004	*Performance* (*employer response-based analysis*)			
	No IiP	77 (22.00)	273 (78.00)	350 (100)
	IiP	231 (71.30)	93 (28.70)	324 (100)
	Total (%)	308 (45.70)	366 (54.30)	674 (100)
	Training (*employee response-based analysis*)			
	No IiP	61 (22.43)	211 (77.57)	272 (100)
	IiP	200 (73.53)	72 (26.47)	272 (100)
	Total (%)	261 (47.98)	283 (52.02)	544 (100)

Notes: The leftmost column represents WERS2004, whereas the topmost row represents WERS2011. The top and middle panels report the before matching transition probabilities of the four organisational groups in the employers' response-based outcome samples (i.e., employers' response-based training and performance outcomes) while the bottom panel reports similar transition probabilities relating to the employee response-based training outcome.

544 organisations for the employee response-based training study consist of 61, 72, 200 and 211 organisations that were, respectively, *newly accredited*, *de-accredited*, *always accredited* and *never accredited*. Therefore, the 'impacts' of gaining (losing) IiP status on training use 272 (272) organisations (bottom panel, Table 1).

3.3 | Organisational training outcomes

The paper generates training outcomes based on responses from both employees and managers. Firstly, employees would respond to the question: 'Apart from health and safety training, how much training have you had during the last 12months, either paid for or organised by your employer? Please only include training where you have been given time off from your normal daily work duties to undertake the training' by ticking one of the six options of 'none', '<1 day', '1–2 days', '2–5 days', '5–10 days' or '> = 10 days', which were scored from 1 (none) to 6 (> = 10 days). We aggregate the polychotomously measured training (T) responses of employees (i) within workplaces (j) to get a workplace-level average training outcome as $\bar{T}_j = \sum_{i=1}^{N} \frac{T_{ij}}{N_j}$, where N is the total number of respondents in a workplace ($1 \leq N \leq 25$).[5]

Secondly, managers also responded to the following training questions: 'proportion of experienced staff in the largest occupational group who had training in the past year' by selecting one of 'all, 100%'; 'almost all, 80%–99%'; 'most, 60%–79%'; 'around half, 40%–59%'; 'some, 20%–39%'; 'just a few, 1%–19%'; and 'none, 0%'. We generate a workplace-level training outcome measure ('Training last year'), which takes the value 1 if any proportion of employees in the largest occupational group received training in the last year and 0 if none. Managers would also respond to the follow-up question of 'whether the training provided covered any of ... : (*i*) computing skill, (*ii*) teamworking, (*iii*) communication skills, (*iv*) leadership skills, (*v*) operation of new equipment, (*vi*) customer service, (*vii*) health and safety, (*viii*) problem-solving methods, (*ix*) equal opportunities and diversity, (*x*) reliability and working to deadlines, and (*xi*) quality control procedures'. These responses have inter-item correlation coefficients of $\alpha = 0.81$ (WERS2011) and $\alpha = 0.80$ (WERS2004), suggesting high internal consistency across the waves. Given these, a summative outcome measure ('all training') has been generated as the second training outcome.[6]

3.4 | Organisational performance outcomes

The organisational performance outcomes come from managers' assessment of their organisations' performance vis-à-vis other organizations in the same industry in terms of (i) 'financial performance', (ii) 'labour productivity' and (iii) 'quality of product or service'. In each case, managers would provide their responses on a 5-point Likert scale from 'a lot better than average' to 'a lot below average'. Inter-item correlation of the three performance measures yields $\alpha = 0.65$ for both WERS2004 and WERS2011, which reveals moderate internal consistency. Factor analyses identified only one item with eigenvalue greater than 1 in both 2011 and 2004 (1.210 and 1.184) and overall Kaiser–Meyer–Olkin measures of 0.63 and 0.64, respectively. Given this, a single summative organisational performance outcome ('overall performance') has been generated, which is used together with its constituent parts in the empirical analysis conducted. Table A1 provides summary statistics on each of the three organisational outcomes.[7]

Several other variables relating to organisational characteristics including organisational age, size, industry, ownership status, union coverage, sector and geographic location have been used as controls and to perform matching between organisations with different IiP status as detailed in Section 4.[8] Table A2 provides summary statistics on each of these organisational characteristics. The summary statistics reveals that organisations that were never accredited were largely small, private, UK-owned and single-plant organisations, which were mostly in the services and finance industries compared with the typical organisation in the sample (the 'all combined' column). Organisations that were observed to be newly accredited in 2011 appeared to be medium sized for the most part, and they tended to come from the construction, public and health services industries. In contrast, organisations that were observed to be de-accredited in 2011 tended to be large organisations in the public and community services and education industries.

4 | ANALYTICAL APPROACH

To determine if IiP accreditation promotes training and organisational performance, we exploit the panel nature of the WERS data described in Section 3 and an empirical strategy that is likely to address the important issue of organisational self-selection, which much of the literature has ignored. Organisations are likely to self-select into the IiP scheme if (i) they anticipate being accredited and (ii) they expect accreditation to benefit their drive for a marketing success. We adopt quasi-experimental design to minimise potential biases stemming from organisational self-selection. We do so by combining matching and difference-in-differences (DiD) techniques.[9]

4.1 | Propensity score matching

The method of propensity score matching (see Rosenbaum & Rubin, 1983; Rubin, 2005) allows 'like-for-like' comparison by pairing 'newly accredited' organisations with observationally similar 'never accredited' organisations or those that got 'de-accredited' with observationally similar 'always accredited' organisations. Consider $IiP_{jt} \in \{0,1\}$ to be an indicator of whether organisation j gains IiP accreditation at time t. Also, suppose that $y^1_{j,t+p}$ represents the outcome of interest for organisation j some p periods after IiP accreditation.[10] The corresponding outcome for the organisation if it had not been accredited would have been $y^0_{j,t+p}$ in which case the causal effect of organisation j gaining IiP status at time $t+p$ would be given by $y^1_{j,t+p} - y^0_{j,t+p}$. However, in our data, we only observe $T^1_{j,t+p}$ for organisations that got accredited with $y^0_{j,t+p}$ unknown, which constitutes the fundamental problem of causal inference.[11] In this paper, we follow the microeconometric evaluation literature (see Dehejia & Wahba, 2002; Girma & Gorg, 2007; Heckman et al., 1997, 1998) and define the average effect of gaining IiP status for accredited organisations as

$$E\left\{y^1_{t+p} - y^0_{t+p} | IiP_{it} = 1\right\} = E\left\{y^1_{t+p} | IiP_{it} = 1\right\} - E\left\{y^0_{t+p} | IiP_{it} = 1\right\} \quad (1)$$

Equation 1 can be used to retrieve the average IiP effect, if one constructs the counterfactual outcome of interest, which is the outcome 'newly accredited' organisations would have on

average had they not gained the IiP status (i.e. the last term in Equation 1). We approximate this counterfactual by the average outcome of interest for those organisations that were 'never accredited' (i.e. $E\{y^0_{t+p}|IiP_{it}=0\}$). The validity of such an approximation depends on the outcome of interest being independent of IiP status conditional on a set of observable characteristics. To achieve this, we perform the matching based on propensity scores estimated from a probit model, which estimates the probability of being newly accredited in 2011 conditional on a rich set of organisational characteristics from 2004 (i.e. before the change in IiP status occurred), given by

$$Prob\left(IiP_{j,2011}=1\right)=F\left(X_{j,2004}\right) \tag{2}$$

where $X_{j,2004}$ represents the vector of organisational characteristics from 2004, which include the standard organisational characteristics used in similar studies such as age, size, ownership, multi-/single-plant, industry, union coverage and region. Similarly, organisations that lost their IiP status are matched to their counterparts that were observed to be accredited in both waves ('always accredited') based on propensity scores obtained from a probit model estimating the probability of losing IiP status in 2011.[12] The matching is performed using '*psmatch2*' and its kernel matching procedure (Leuven & Sianesi, 2003).[13]

4.2 | DiD

Once 'newly accredited' organisations are matched to comparator organisations that were 'never accredited' as described above, we implement the DiD estimation to determine the 'impact' of gaining IiP status, which is given by

$$y_{jt}=\alpha_j+\beta\cdot IiP_j+\gamma\cdot \mathrm{T}_{2011}+\delta\cdot IiP_j\#\mathrm{T}_{2011}+\varepsilon_{jt} \tag{3}$$

where y represents the training or performance outcome of interest; j and t index organisations and year, respectively; T_{2011} is a time dummy (= 1 if year/wave is 2011), IiP_j is a group dummy (= 1 if organisation j is 'newly accredited'); and δ, which is the coefficient of the interaction term, is the DiD estimator of interest. Equation 3 is estimated with the Gaussian kernel weights obtained from the matching exercise described above.[14] We estimate a similar DiD equation to determine the link between losing IiP status and the organisational training and performance outcomes, this time comparing organisations that were observed to lose their IiP status in 2011 and their matched counterparts that remained IiP accredited in both waves.[15] Combining DiD with matching in this way is thought to yield better results (see Blundell & Meghir, 2000; Girma & Gorg, 2007; Heckman et al., 1997). All the estimations are conducted using STATA (StataCorp., 2019).

5 | RESULTS

5.1 | Propensity score matching

The propensity score matching described above was implemented for each of the three strands of our study. The procedure achieved good quality matches, which the balancing test statistics

confirm as we fail to reject the null hypotheses of equal means (see Tables A3–A8 for gaining and losing IiP status). Figures 1 and 2 depict density plots of the estimated propensity scores before and after matching for the employer response-based training sample, which reveal the good quality balance achieved between each pairs of organisational groups post matching.[16] In each case, organisations that were found to be too dissimilar in terms of the propensity scores (i.e. those that were off common support) were excluded from the DiD estimation to ensure 'like-for-like' comparisons. Accordingly, the analysis of gaining IiP based on the employer-assessed training outcomes (i.e. the matching of 'newly accredited' and 'never accredited' organisations) excluded 39 'never accredited' organisations that were off common support, thus retaining 439 organisations (out of the 478 in Table 1). Similarly, the matching of 'de-accredited' and 'always accredited' organisations excluded 3 'de-accredited' and 21 'always accredited' organisations, retaining 411 organisations for the DiD estimation. The study examining the link between gaining IiP and performance also excluded 57 'never accredited' organisations, similarly, retaining 293 organisations for the follow-up analysis, whereas the study on losing IiP and performance excluded 2 'de-accredited' and 17 'always accredited' organisations that were off common support, retaining 303 organisations. Finally, the analysis examining the link between gaining IiP status and the employee response-based training outcome excluded 2 'newly accredited' and 32 'never accredited' organisations and retained 238 organisations for the DiD regressions, whereas the study on losing IiP status excluded 5 'de-accredited' and 40 'always accredited' organisations, thus retaining 227 organisations.

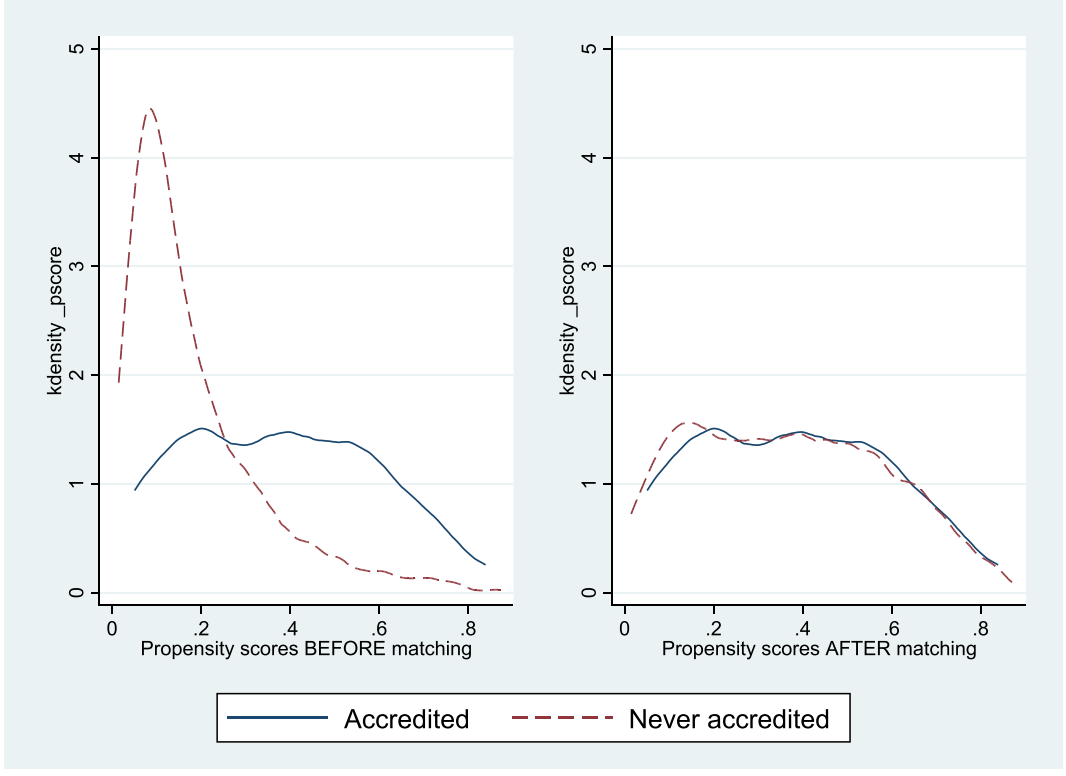

FIGURE 1 Before–after density plots of propensity scores for 'accredited' organisations and their 'never accredited' comparators (employer response-based training sample) [Colour figure can be viewed at wileyonlinelibrary.com]

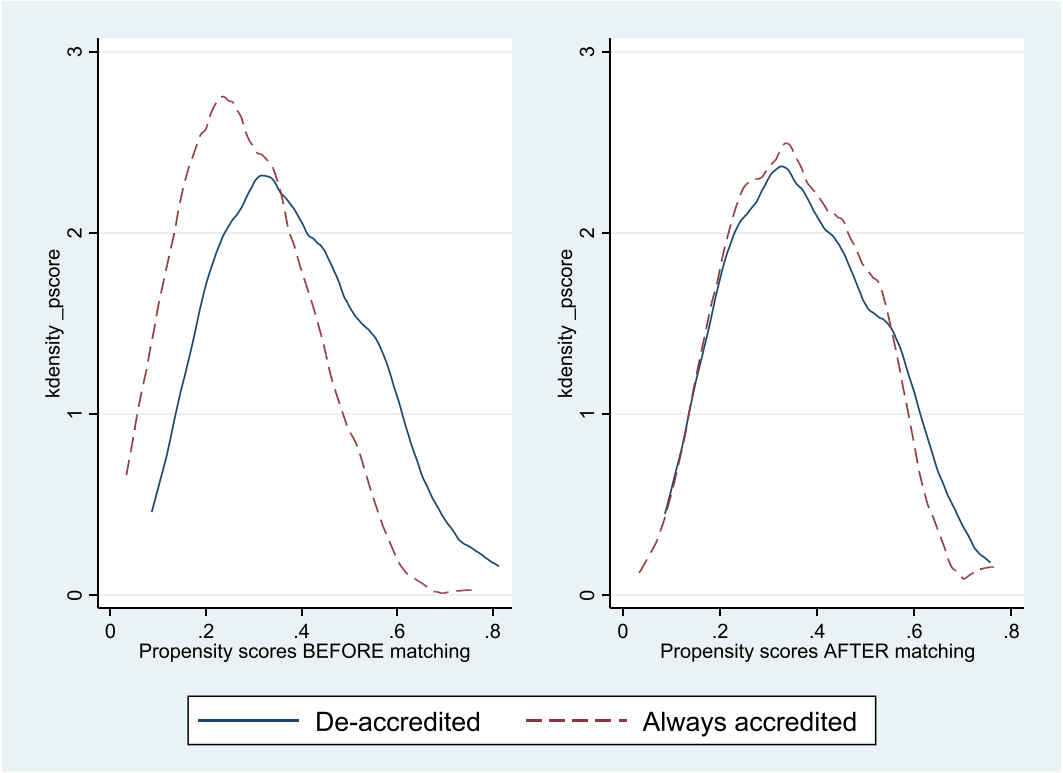

FIGURE 2 Before–after density plots of propensity scores for 'de-accredited' organisations and their 'always accredited' comparators (employer response-based training sample) [Colour figure can be viewed at wileyonlinelibrary.com]

5.2 | DiD matching estimators

Tables 2–5 report the results from the DiD matching estimations determining the link between organisational IiP status and the training and performance outcomes described in Sections 3.3 and 3.4. Table 2 reports results relating to the employee response-based training outcome. Table 3 reports results relating to the two training outcomes from the employer responses, whereas Table 4 reports the results from the analysis on each of the training modules, which is thus a disaggregation of the second training outcome in Table 3. Table 5 relates to the organisational performance outcomes. In each case, the top panel reports results relating to the relationship between gaining IiP status and the outcomes considered, whereas the bottom panel relates to losing the IiP status. Each table also reports results relating to subgroup analysis examining potential variations in these results between private and public sector organisations.

5.2.1 | Employee response-based training outcomes

The results from the DiD matching estimators in Table 2 reveal that gaining IiP status is significantly positively related with the mean level of workplace training outcome. On the other hand, losing the IiP status was not found to have any significant link with the mean level of

TABLE 2 DID estimates of IiP accreditation and de-accreditation on the mean level of employee training ($\bar{T}_j$)

	All organisations	Private sector organisations	Public sector organisations
Accreditation			
IiP	0.0816* (0.042)	−0.0153 (0.057)	0.0150 (0.059)
2011	1.9843*** (0.066)	1.8841*** (0.069)	2.6740*** (0.225)
IiP#2011	0.2465** (0.116)	0.3558** (0.154)	−0.4943 (0.299)
Constant	0.5551*** (0.022)	0.5245*** (0.025)	0.7712*** (0.044)
No. of observations	476	362	86
No. of organisations	238	181	43
R^2	0.692	0.684	0.771
De-accreditation			
De-IiP	−0.0213 (0.030)	−0.0441 (0.043)	0.0171 (0.041)
2011	2.3357*** (0.056)	2.2785*** (0.079)	2.3708*** (0.080)
De-IiP#2011	−0.0979 (0.101)	−0.0221 (0.164)	−0.1254 (0.134)
Constant	0.7424*** (0.015)	0.7231*** (0.023)	0.7660*** (0.019)
No. of observations	454	200	226
No. of organisations	227	100	113
R^2	0.817	0.815	0.825

Notes: Robust standard errors in parentheses. DiD was performed using WERS2004 and 2011 panel data. Accredited and de-accredited organisations had been matched to, respectively, never accredited and always accredited organisations based on initial/WERS2004 characteristics and the 2004 cross-sectional weights.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

workplace training. The sectoral subgroup analysis indicates that the significant association found between gaining IiP status and training is specific to the private sector.

5.2.2 | Training outcomes as assessed by employers

The results in Table 3 suggest that gaining IiP status has statistically significant links with the two training outcomes from employers' responses—whether organisations provided training to staff in the largest occupational group over a 12-month period and the number of training modules involved. Like the results based on employees' responses, no significant link of losing IiP status was found with either of the training outcomes. Also, the significant links related to gaining IiP are specific to the private sector once more.

Table 4 reports results relating to each of the training modules organisations provided. They reveal statistically significant positive link with most of the training modules (six out of 11). Also, the most important types of training found, in terms of the magnitudes of the estimates, are training in 'computer' and 'new equipment'. None of the training modules was found to have a significant link with losing IiP status bar one notable exception—computer training—which is found to be significantly positively related to losing IiP status.

TABLE 3 DID estimates of IiP accreditation and de-accreditation on the training of staff in largest occupational group

	All organisations		Private sector organisations		Public sector organisations	
	Training last year?	**All training**	**Training last year?**	**All training**	**Training last year?**	**All training**
Accreditation						
IiP	−0.0484 (0.054)	−0.0951 (0.527)	−0.0366 (0.061)	0.5140 (0.547)	0.0561 (0.049)	−0.2568 (0.901)
2011	0.0268 (0.022)	−0.1042 (0.271)	0.0044 (0.026)	0.0232 (0.219)	0.0693 (0.047)	−0.3431 (0.649)
IiP#2011	0.1068* (0.056)	1.4556*** (0.478)	0.1526** (0.065)	1.6127*** (0.490)	−0.0867 (0.054)	−0.1366 (0.962)
Constant	0.8995*** (0.021)	4.1773*** (0.289)	0.8661*** (0.021)	3.4181*** (0.215)	0.9307*** (0.047)	5.2192*** (0.669)
No. of observations	878	878	680	680	160	160
No. of organisations	439	439	340	340	80	80
R^2	0.045	0.042	0.059	0.078	0.025	0.008
De-accreditation						
De-IiP	−0.0235 (0.022)	−0.3765 (0.326)	−0.0491 (0.032)	−0.9112** (0.453)	−0.0057 (0.038)	0.4947 (0.505)
2011	−0.0000 (0.014)	−0.0710 (0.247)	−0.0023 (0.017)	0.0779 (0.387)	0.0097 (0.024)	−0.1426 (0.324)
De-IiP#2011	0.0165 (0.026)	0.1014 (0.456)	0.0287 (0.034)	0.3235 (0.702)	0.0222 (0.043)	−0.4379 (0.678)
Constant	0.9771*** (0.009)	5.1827*** (0.190)	0.9880*** (0.009)	5.3562*** (0.259)	0.9634*** (0.017)	4.9321*** (0.291)
No. of observations	822		402		364	
No. of organisations	411		201		182	
R^2	0.003	0.003	0.011	0.018	0.007	0.010

Notes: Robust standard errors in parentheses. DiD was performed using WERS2004 and 2011 panel data. Accredited and de-accredited organisations had been matched to, respectively, never accredited and always accredited organisations based on initial/WERS2004 characteristics and the 2004 cross-sectional weights.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

TABLE 4 DiD-matched estimator, subgroup analysis by training types (employer response-based)

	Computer	Teamwork	Communication	Leadership	New equipment
Accreditation					
IiP	−0.1836** (0.076)	0.0011 (0.077)	−0.0496 (0.077)	0.0510 (0.077)	−0.0931 (0.077)
2011	−0.1863*** (0.057)	−0.0528 (0.055)	−0.0239 (0.050)	0.0605 (0.047)	−0.0300 (0.053)
IiP#2011	0.3011*** (0.081)	0.1957** (0.082)	0.2178** (0.093)	−0.0424 (0.092)	0.2472** (0.103)
Constant	0.5344*** (0.044)	0.3729*** (0.044)	0.4254*** (0.044)	0.3327*** (0.045)	0.4864*** (0.044)
No. of observations	878				
No. of organisations	439				
R^2	0.020	0.024	0.031	0.002	0.036
De-accreditation					
De-IiP	−0.0704 (0.060)	−0.0490 (0.060)	−0.0765 (0.060)	0.0485 (0.060)	−0.0128 (0.060)
2011	−0.1741*** (0.037)	−0.0038 (0.044)	−0.0512 (0.047)	0.0154 (0.044)	−0.0083 (0.047)
De-IiP#2011	0.1684** (0.075)	−0.0955 (0.079)	0.0130 (0.085)	−0.0960 (0.083)	−0.0778 (0.081)
Constant	0.6043*** (0.034)	0.5250*** (0.035)	0.5501*** (0.035)	0.4573*** (0.035)	0.5826*** (0.035)
No. of observations	822				
No. of organisations	411				
R^2	0.010	0.015	0.006	0.005	0.007

Notes: Robust standard errors in parentheses. DiD was performed using WERS2004 and 2011 panel data. Accredited and de-accredited organisations had been matched to, respectively, never accredited and always accredited organisations based on initial/WERS2004 characteristics and the 2004 cross-sectional weights.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

5.2.3 | Employers' perceptions of organisational performance

Table 5 reports the DiD matching estimators on the link between gaining IiP status and managers' perceptions of organisational performance, both aggregate performance and each of its three constituents (financial performance, labour productivity and product/service quality).

The results reveal that gaining IiP status has a statistically significant positive link with managers' perceptions of better overall performance vis-à-vis other organisations in the same industry. What is also clear is that the performance link found is driven largely by managers'

TABLE 4 (Continued)

	Customer service	Health and safety	Problem solving	Equal opps.	Reliability	Quality control
Accreditation						
IiP	−0.0298 (0.076)	0.0239 (0.074)	0.0720 (0.072)	−0.0256 (0.076)	0.0318 (0.059)	0.1066 (0.078)
2011	−0.0161 (0.048)	0.0813* (0.043)	−0.0342 (0.046)	0.0948* (0.049)	−0.0047 (0.033)	0.0073 (0.045)
IiP#2011	0.2214*** (0.081)	0.0164 (0.091)	0.0639 (0.079)	0.0087 (0.087)	0.1526** (0.070)	0.0733 (0.089)
Constant	0.3594*** (0.044)	0.6666*** (0.041)	0.1989*** (0.039)	0.3351*** (0.047)	0.1343*** (0.031)	0.3310*** (0.042)
No. of observations						
No. of organisations						
R^2	0.038	0.012	0.012	0.011	0.038	0.020
De-accreditation						
De-IiP	−0.0225 (0.059)	−0.0069 (0.046)	−0.0810* (0.048)	0.0073 (0.057)	−0.0365 (0.042)	−0.0766 (0.058)
2011	0.0365 (0.047)	−0.0767* (0.045)	0.0134 (0.045)	0.1228*** (0.038)	0.0635* (0.037)	−0.0086 (0.044)
De-IiP#2011	0.0038 (0.078)	0.0245 (0.068)	0.0533 (0.070)	0.0206 (0.074)	0.0078 (0.068)	0.0792 (0.075)
Constant	0.4162*** (0.035)	0.8100*** (0.026)	0.2762*** (0.032)	0.3585*** (0.033)	0.1691*** (0.026)	0.4335*** (0.035)
No. of observations						
No. of organisations						
R^2	0.002	0.005	0.008	0.019	0.010	0.005

Notes: Robust standard errors in parentheses. DiD was performed using WERS2004 and 2011 panel data. Accredited and de-accredited organisations had been matched to, respectively, never accredited and always accredited organisations based on initial/WERS2004 characteristics and the 2004 cross-sectional weights.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

perceptions of better labour productivity in newly accredited organisations. Results from the subgroup analysis for private sector organisations reveal a similar pattern where managers' better perceptions of IiP-linked overall performance are largely the result of their perceptions of better labour productivity. What is notable is that gaining IiP status is found to have significant positive links even in public sector organisations, where it is found to have a significant positive relationship with managers' perceptions of labour productivity. Thus, it appears that gaining the status is linked to managers' optimistic assessments of labour productivity in both the private and the public sectors. Unlike the training-related results, losing the IiP status (bottom

panel, Table 5) is also found to be negatively related with managers' perceptions in each of the performance outcomes generally, but significantly so in terms of overall performance, which was found to be the case even in public sector organisations. Notably, much of the de-accreditation-related negative assessments of overall performance by managers appear to have arisen from their negative perceptions of labour productivity, but negativity in perceptions of product/service quality has also contributed to their pessimism.

6 | DISCUSSION

The paper identified four groups of organisations based on their IiP status in 2004 and 2011 to study the links between IiP status and three organisational outcomes. The outcomes include two organisational training outcomes, which were derived from employees' and employers' responses, and managers' perceptions of organisational performance. The empirical analysis exploited the panel feature of the data to implement the DiD technique after we matched the four organisational groupings to ensure 'like-for-like' comparisons. The matching allowed us to pair (i) 'newly accredited' organisations with their observationally similar 'never accredited' counterparts to determine links between gaining IiP status and the three outcomes and (ii) 'de-accredited' organisations with observationally similar 'always accredited' counterparts to establish links between losing the status and the three outcomes.

Gaining IiP status is found to have a significant positive link with training regardless of whether the training outcome considered came from employees' or employers' responses. That we found similar results on training outcomes derived from two different sources is reassuring. A positive training link has also been reported in some previous studies such as Hoque (2003), who reported enhanced training practice in IiP organisations on average, and Hoque and Bacon (2008), who found a positive training link for higher level occupations. As noted in the literature review, many of the studies on the IiP standard to date do not address the issue of organisational self-selection, relying on cross-sectional and/or qualitative studies.

The results from examining each of the training modules indicated that six out of the 11 training modules were significantly linked to the IiP standard. What is more, the magnitude of the estimates suggested that training in 'computers' and 'new equipment' were the most important types of training provided by organisations. As noted in Section 2.2, the IiP scheme requires organisations to identify skills gaps within, which it then supports them to address via workforce training. Our results appear to suggest that organisations gave relative importance to training in 'computer' and 'new equipment'. There is overwhelming evidence on both hard and soft skills (hence training in these) being vital in determining organisations' fortunes (see, e.g. Balcar, 2016; Heckman & Kautz, 2012). Still, training in 'computer' and 'new equipment' may carry extra value in that they might have helped organisations in embracing the rapid technological change witnessed in recent year. Acemoglu and Restrepo (2018) highlighted the negative effects of skills shortages in realising automation-related productivity gains, which training in 'computers' and 'new equipment' may be better placed to address. Boothby et al. (2010) also alluded to the importance of combining workforce training with new technology to achieve enhanced growth in labour productivity.

Remarkably, all the positive training links found are specific to private sector organisations. As noted earlier, it is not entirely clear why there are such sectoral disparities in the IiP–training relationship. However, the lack of significance for public sector organisations is consistent with the limited evidence in the literature criticizing the IiP scheme (e.g. Grugulis &

TABLE 5 DID estimates of IiP accreditation and de-accreditation on perceptions of organisational performance (WERS2004 and 2011 panel)

	All organisations				Private sector orgs.				Public sector orgs.			
	Overall performance	Financial performance	Labour productivity	Product quality	Overall performance	Financial performance	Labour productivity	Product quality	Overall performance	Financial performance	Labour productivity	Product quality
Accreditation												
IiP	−0.7902**	−0.1179	−0.4336***	−0.2387	−0.7585**	−0.0789	−0.4177***	−0.2618	−1.7055**	−0.6141*	−0.4401**	−0.6513*
	(0.339)	(0.147)	(0.130)	(0.160)	(0.369)	(0.161)	(0.140)	(0.178)	(0.756)	(0.317)	(0.212)	(0.348)
2011	0.0244	0.1296	−0.1664	0.0613	−0.1402	−0.0735	−0.0467	−0.0200	0.2763	0.4386	−0.3701	0.2078
	(0.294)	(0.129)	(0.134)	(0.098)	(0.227)	(0.113)	(0.090)	(0.106)	(0.727)	(0.289)	(0.359)	(0.193)
IiP#2011	0.6591*	0.0377	0.4957**	0.1257	0.8174*	0.2072	0.4545**	0.1557	0.7187	0.0449	0.3468*	0.3270
	(0.385)	(0.207)	(0.212)	(0.171)	(0.417)	(0.217)	(0.206)	(0.191)	(0.879)	(0.392)	(0.178)	(0.309)
Constant	7.0301***	3.5548***	3.5462***	3.9292***	7.1127***	3.5888***	3.4820***	4.0419***	6.9177***	3.4994***	3.6950***	3.7233***
	(0.180)	(0.083)	(0.071)	(0.069)	(0.181)	(0.089)	(0.066)	(0.076)	(0.409)	(0.175)	(0.165)	(0.142)
No. of obs.	586				458				108			
No. of orgs.	293				229				54			
R^2	0.042	0.012	0.052	0.020	0.043	0.006	0.077	0.015	0.119	0.152	0.050	0.139
De-accreditation												
De-IiP	0.4220	0.0895	0.2571**	0.0754	0.4826	0.1000	0.2493	0.1334	0.6174	0.1679	0.3464**	0.1032
	(0.263)	(0.115)	(0.110)	(0.106)	(0.343)	(0.161)	(0.157)	(0.136)	(0.438)	(0.187)	(0.162)	(0.184)
2011	0.1802	0.0038	0.0495	0.1269*	0.2141	−0.0040	0.0968	0.1212	0.1732	0.0303	0.0012	0.1417
	(0.208)	(0.105)	(0.083)	(0.070)	(0.297)	(0.163)	(0.116)	(0.090)	(0.312)	(0.131)	(0.128)	(0.118)
De-IiP#2011	−0.8666**	−0.1912	−0.4043**	−0.2711*	−1.1000*	−0.2192	−0.4372*	−0.4436**	−0.9929*	−0.3346	−0.3441	−0.3141
	(0.386)	(0.170)	(0.168)	(0.147)	(0.596)	(0.239)	(0.262)	(0.218)	(0.541)	(0.270)	(0.230)	(0.203)
Constant	6.8766***	3.5902***	3.4273***	3.8592***	7.0865***	3.6340***	3.4411***	4.0113***	6.6022***	3.5288***	3.4043***	3.6691***
	(0.146)	(0.062)	(0.059)	(0.061)	(0.172)	(0.077)	(0.080)	(0.074)	(0.265)	(0.109)	(0.094)	(0.104)
No. of obs.	606				320				242			
No. of orgs.	303				160				121			
R^2	0.025	0.009	0.038	0.010	0.036	0.012	0.031	0.034	0.038	0.025	0.055	0.014

Notes: Robust standard errors in parentheses. DiD was performed using WERS2004 and 2011 panel data. Accredited and de-accredited organisations had been matched to, respectively, never accredited and always accredited organisations based on initial/WERS2004 characteristics and the 2004 cross-sectional weights.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

Bevitt, 2002; Smith et al., 2014), which is based on studies on public sector organisations. Beyond the immediate IiP literature, there is also evidence pointing to the public sector having staff training and development relatively entrenched already (Canduela et al., 2012). Earlier evidence (Green et al., 1999) has also shown that unionised workplaces in Britain have substantially higher likelihood of workforce training than their non-unionised counterparts. We know that trade unions are significantly dominant in the public sector, where union density stands at 52.5% compared with the private sector's 13.2% (BEIS, 2019). It seems, therefore, that unions might have played a vital role in embedding the culture of staff training and development in public sector organisations. If this is the case, then accreditation might not bring much additional improvement in staff training and development in the sector. Though it is difficult to establish in this study, it may also be that public sector organisations do not place as much emphasis on the scheme as their private counterparts would do. It is plausible that private sector organisations would anticipate some marketing benefits from gaining and maintaining the status, but such marketing benefits might not necessarily be imperative for public sector organisations.[17]

On managers' perceptions of performance, the IiP status is found to have a significant positive link with perceptions of better organisational performance vis-à-vis other organisations in the same industry. The finding that much of this managers' positivity in overall performance came from their perceptions of better labour productivity is another reassuring finding. If organisations invested in the training of staff in their largest occupational group, it is instinctive that they expected to have a more productive workforce compared with other organisations in the same industry. Alberga et al. (1997) have found a similar result, where they concluded about positive perceptions of the impact of IiP-induced HR development and organisational performance.

That we did not find a significant training link with the loss of the IiP status is not what would be expected, because losing the status would be expected to have the opposite 'effect' to gaining it. One possible explanation for the lack of de-accreditation-related link might be that accreditation had already rooted some level of organisational culture in staff training and development. If this is the case, de-accreditation would be unlikely to decimate the culture entirely, not immediately at least. In that case, de-accredited organisations might not (yet) be too different in their staff training and development HRM practices vis-à-vis organisations that remained accredited. If this is the case, then we would not see significant difference in training between the two groups of organisations. However, the significant link we found between losing the IiP status and 'computer' training is difficult to interpret in this way, as that seems to suggest organisations that lost the status invested more on this type of training after they lost the status, possibly even at the expense of the other training modules. It may be that the scheme required organisations to maintain a benchmark standard that had been informed by their relatively dated skills requirements. Given the rapidly changing digital and online technology and organisations' need to adapt quickly, the (old) benchmark might have become outdated. If this is the case, then organisations might give up on the scheme in the interest of flexibility in pursuing more specialised training on their own in keeping with the evolving challenges they face. On the other hand, our results on performance were as would be expected, where losing the IiP status was found to have a significantly negative relationship with managers' perceptions of organisational performance.

7 | LIMITATIONS OF THE RESEARCH

The paper is rigorous in its use of rich organisation-level panel data and in the empirical approach it employed. On the other hand, the organisational accreditation scheme studied is a voluntary scheme and unlikely to signify exogenous intervention. In addition, although we observe changes in accreditation status only in 2011, there are likely to be significant variations in the timing of accreditation (and de-accreditation) among organisations in the study sample. Also, as noted in Section 2, the scheme has gone through some changes over the years even though worker training has remained its main intent. Another issue worth pointing is that the plausibility of the matching approach used depends on the success of the data from 2004 in capturing the factors that determine gaining IiP (or losing it) and the outcomes considered. If, for example, organisational self-selection is driven by time-varying unobserved organisational features that our data from 2004 did not capture, then the plausibility of the matching approach used would be questionable. These caveats need to be considered when reading our results. On the other hand, it is reassuring that the results obtained from the employee and employer responses are broadly similar. Also, the matching of comparator organisations based on their distinct accreditation status and combining this with DiD is likely to minimise, if not eliminate entirely, potential organisational self-selection. Finally, it is worth pointing out that the organisational performance outcomes used are based on employers' subjective perceptions of performance, which is far from actual performance measures as Black and Lynch (1996) highlighted. Also, they represent the perceptions of senior managers, which may not necessarily be shared throughout organisations as noted by Alberga et al. (1997).

8 | CONCLUSION

The paper attempted to examine whether the 'IiP' scheme promoted workforce training and organisational performance. The IiP is a market-led and voluntarist scheme that encourages organisations to identify skills gaps and fill such gaps to ensure organisational competitiveness. The scheme has been the main worker training programme supported by the UK government. In Britain, much remains to be done to attain the pre-2008 Great Recession level of labour productivity, which, by the end of 2019, was reported to be some 17 percentage points below its pre-2008 trend. The country is also lagging most of its G7 counterparts in this respect, with output per hour reported to be 26.2% lower in Britain than in Germany, the best performing G7 country. Given these, reassessing the effectiveness of the main workforce training scheme may be a worthwhile enterprise. We attempted to do so by addressing some of the shortcomings (such as organisational self-selection) in the literature assessing the scheme. The literature review highlighted the importance of workforce training in enhancing labour productivity. If so, this study may provide a timely input to the current policy discourse on the productivity conundrums and ways of addressing them via schemes such as the IiP.

The results obtained suggest a significant link between gaining IiP and organisational workforce training. The scheme has also been linked to managers' upbeat assessment of organisational performance, which arose from their optimism about labour productivity by and large. If so, organisational policymakers ought to promote the scheme further to increase uptake. As noted above, workforce training plays an important role in enhancing labour

productivity and organisational competitiveness. It may also play a vital role in promoting technology adoption, which is likely to enhance labour productivity further. That the scheme was not found to support workforce training in public sector organisations may call for a further scrutiny. On the other hand, the sector is recognised for its relative strength in staff training and development, which is partly due to the tradition of staff training and development trade unions instituted. Nevertheless, organisations in the sector may still have to make rigorous reassessment of their skills needs to deliver on the much-needed productivity improvement.

Ensuring that both sectors promote effective workforce training may be vital to revive the slacking productivity in Britain. As Heckman and Kautz (2012) argued, the promotion of skills should take centre stage in an effective portfolio of public policies. The benefit of doing so is likely to go beyond addressing the current difficulties in productivity, possibly leading to far-reaching longer-term benefits. Acemoglu and Restrepo (2018) highlighted that skills shortages may hinder automation-related productivity gains, whereas Boothby et al. (2010) stressed about the importance of combining training with new technology to achieve enhanced productivity gains. There is consensus on the essential role organisations play in this respect. Dowdy and Van Reenen (2014) noted that although government policy plays a vital role, the realisation of the productivity potential largely hinges on the actions of managers and their organisations. In this respect, the evidence that accredited employer-financed workforce training being more strongly linked to higher labour productivity (Booth & Bryan, 2005) is worth reiterating here. The recent policy initiative in Britain to move skills development away from a centrally driven scheme to one that is demand driven based on employers' assessments of skills need (i.e. market-led scheme) is worth highlighting here too, because the IiP is a market-led accreditation scheme.

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CONFLICT OF INTEREST

There are no conflict-of-interest issues to report in connection with this work, which did not benefit from any funding. The usual disclaimer applies.

ORCID

Getinet Astatike Haile https://orcid.org/0000-0001-6274-971X

ENDNOTES

[1] However, some low-wage sectors such as textile, clothing manufacture and retail are reported to perform relatively strongly (Forth & Rincon-Aznar, 2018).

[2] The scheme had been owned by the UK government until 2017 when it became an independent community interest company (CIC) as of February 2017 (IiP, 2017).

[3] https://www.investorsinpeople.com/press/plans-announced-investors-people-engage-employees-employers-and-communities and https://www.investorsinpeople.com/what-investors-people

[4] See https://www.investorsinpeople.com/sites/default/files/Obligations%20of%20Accreditation_0.pdf on the obligations accredited organizations face. See also Hoque et al. (2005) for details on institutional framework.

[5] Bryson et al. (2017) and Perales and Tomaszewski (2016) have used a similar disaggregation.

[6] Recent literature (see, e.g. Balcar, 2016; Heckman & Kautz, 2012) has emphasised the importance of both *hard* and *soft* skills, hence hard and soft types of training, in influencing organisations' fortunes. Given this, we do not distinguish among these training types.

[7] Appendix Tables A1–A8 and Figures A1 to A4 are available separately as 'Supporting Information' file via the publisher's Online Library page.

[8] Fifty-one organisations in the initial panel sample of organisations were observed to change their private/public status between 2004 and 2011. Due to this, the subgroup results reported in Tables 2, 3 and 5 excluded 28, 38 and 20 organisations, respectively. These organisations do feature in the 'All organisations' columns in each case, however.

[9] We have also implemented FE estimators yielding identical results, which is as expected given that FE and DiD in a two-wave panel deliver similar results. In addition, we conducted sensitivity analysis following Oster (2019).

[10] As noted earlier, we have three such outcomes in the form of employer response-based training and performance outcomes and employee response-based aggregated training outcomes.

[11] In our data, we also observe organisations losing their IiP status (de-accreditation), so facing the opposite problem in that case where we do not observe $y^1_{j,t+p}$ for de-accredited organisations.

[12] That is, we estimate propensity scores using $Prob(Lost\_IiP_{j,2011} = 1) = F(X_{j,2004})$.

[13] The Gaussian kernel matching with common support assigns larger weights to organisations in the counterfactual group (i.e. never accredited organisations) that are similar or 'closer' in terms of the estimated propensity scores to organisations that gained IiP status.

[14] We cluster the standard errors to address potential problem of serial correlation (Bertrand et al., 2004) even though with just two time periods, the problem is unlikely to be a concern here.

[15] Thus, our DiD equation becomes $y_{jt} = \alpha_j + \beta.\ Lost\_IiP_j + \gamma.T_{2011} + \delta.\ Lost\_IiP_j \# T_{2011} + \varepsilon_{jt}$

[16] Similar figures for the employer response-based performance and the employee response-based training samples are provided in the accompanying 'Supporting Information' file on the publisher's page. Once again, the figures depict the good quality match achieved in each case. In all cases, the test was conducted in STATA using 'pstest'.

[17] The 2008 Great Recession might have played a part in this too. Britain has seen unprecedented deficit reduction in the wake of the crisis, dubbed as the biggest deficit reduction ever witnessed in any advanced economy since World War II (Riley & Chote, 2014). Such unprecedented cut might have impacted public sector organisations more than their private sector counterparts. If the spending cut had eroded training and staff development budgets in the sector to make them barely different from their 2004 level, then we would not see significant training link for the sector.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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