

Training and Performance in SMEs: Empirical evidence from large-scale data from the UK

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This paper examines the link between training and (perceived) actual/intended performance of small and medium-sized enterprises (SMEs) in the UK. We use the UK's 2015 Small Business Survey containing large-scale data from more than 15,000 owner-managers of SMEs. Using the ordered probit analysis to test our hypothesis, we find that there is a positive and significant relationship between training and SMEs' performance. When differentiating between training according to its type, we find that on-the-job and off-the-job training are positively and significantly related to performance, however, when these types of training are received simultaneously, the combined association becomes stronger than their individual effects.

Keywords: SMEs, off-the-job training, on-the-job training, perceived actual performance, intended performance.

Introduction

Training is considered to be a key element in boosting a firm's human capital capabilities and organisational knowledge, which in turn strengthens its competitive advantage (e.g.: Alavi and Leidner, 2001; Aragon and Valle, 2013; Bartel, 1994; Huber, 1991; Kim, 1993; Lang, 2001; MacDuffie and Kochan, 1995; Morley et al., 2016; Tharenou, Saks and Moore, 2007; Wright, McMahan and McWilliams, 1994). Keep (1989) suggests that training is the litmus test against which other aspects of management practice should be assessed, and indeed training activity is the only area of Human Resource Management (HRM) that consistently appears on all lists of what are variously referred to as 'high commitment', 'high performance', or 'best practice' approaches to HRM (Grugulis and Stoyanova, 2011). Training is also intertwined with decisions regarding other HR policies including employee involvement, employee reward, and work design. Theoretically, the Resource Based View (RBV) theory suggests that firms are comprised of resources and capabilities that, if combined, can develop and sustain their competitive advantage, culminating in enhanced firm performance (Aragon and Valle, 2013; Boon et al., 2018; Chinomona, 2013; Delery and Roumpis, 2017; Garavan et al., 2020; Hayton, 2003; Kinsella et al., 1993; Progoulaki and Theotokas, 2010; Way, 2002; Wiklund and Nason, 2018; Wright, Dunford and Snell, 2001). This can be further linked to Becker's (1964, 1994) theory of human capital and the acknowledgment that an individual's (general and specific) skills, capabilities, and knowledge are a source of competitive advantage (Jones et al., 2013; Tharenou, Saks and Moore, 2007). In the context of training, the RBV suggests that training can be considered 'as an investment in human capital' (Tharenou, Saks and Moore, 2007: 253), where individuals acquire knowledge, skills, and abilities that can be translated to positive outcomes at the organisational level (Ostroff and Bowen, 2000).

To this end, it has been argued that 'training can and should be a powerful agent of change, facilitating and enabling a company to grow, expand and develop its capabilities thus enhancing profitability' (Jennings and Banfield, 1993: 3). In other words, training may cause modifications in behaviour through increasing job knowledge, innovative practices, specific skills, and the use of new and superior technologies, that can, in turn, enhance productivity at the firm level and contribute to its economic performance (Armstrong, 1991; Bartel, 1994, 1995; Dostie, 2018). Training is therefore an essential part of what organisations do, and is associated with increased worker productivity, greater innovation and superior organisational performance. Employees may also benefit from higher skills and knowledge, better pay, and improved career prospects and higher job satisfaction (Barry et. al, 2020; Dostie, 2018;

Esteban-Lorret et al., 2018). It is therefore not surprising that both academics and policy makers often show interest in issues around employee training and its impact on individual employees, labour markets, national economies, and society in general (for a review see, among others, Blundell et al., 1999; Storey, 2004; and Grugulis, 2019). What is perhaps more surprising is that if training is central to effective HRM and of great value to a variety of stakeholders, why is its provision often patchy and of questionable value (Keep, 2015)?

This question is particularly pertinent in the context of smaller firms. SMEs often find it difficult to attract and retain a skilful workforce (Atkinson, Mallett and Wapshott, 2014; Kitching, 2015), and this can limit their potential for survival and growth (e.g.: Bryan, 2006; de Kok, 2002; Patel and Cardon, 2010; Patton and Marlow, 2002; Williamson, Cable and Aldrich, 2002). Specifically, existing literature suggests that Human Resource Management (HRM) in SMEs is often ad hoc, flexible, and informal. The formality of HR practices, including formal training, increases with firm size (e.g.: Black, Noel and Wang, 1999; Corrado, Hulten and Sichel, 2006; Kotey and Folker, 2007; Matlay, 2002; Patton, Marlow and Hannon, 2000; Storey et al., 2010), and evidence from the UK consistently reveals that training tends to be more extensive in larger workplaces and those where an HR specialist is employed (e.g.: van Wanrooy et al, 2013).

Although the existing evidence tends to suggest a positive association between training and firm performance (see, for example, Garavan et al., 2020), the estimates of the impact are, at best, tentative and depend on the type of training provision being studied (Aragon and Valle, 2013; De Winne and Sels, 2010; Jones et al., 2013; Kitching and Blackburn, 2002; Storey, 2002). For example, Jayawarna, Macpherson and Wilson (2007) find that formal training has a stronger effect on firm performance compared to informal training, while Felstead et al. (2009) show that formal training significantly enhances the performance of the firms sampled. In addition, Kotey and Folker (2007) suggest that informal training is linked to the short-term strategic orientation of the firm. However, earlier studies (e.g.: Cambridge Small Business Research Centre, 1992; Wynarczyk et al., 1993) did not report a significant association between training and SME performance. However, existing studies rarely differentiate between the various types and forms of training that take place, despite this distinction being crucial to understanding the impact that training exerts on firm performance.

This article therefore responds to calls for more nuanced and contingent studies of HRM in SMEs (Rauch and Hatak, 2016; Harney and Alkhalaf, 2020). More specifically, it adds to the ongoing debate by investigating the association between different types of training and SME performance through use of a large-scale SME survey from the UK. We make several

contributions to previous literature. First, this recent large-scale data allows us to distinguish between SMEs that offer off-the-job and on-the-job training to their staff at all levels, meaning we can offer new evidence for the association between training and SMEs' performance. Importantly, we also provide evidence regarding the stronger effect of combining off- and on-the-job training on firms' performance. Finally, the large-scale data allows us to differentiate between managerial and non-managerial training (see Jones et al., 2013; Storey, 1994), enabling us to examine how training efforts are spread across the workforce. This aspect has received scant empirical attention and, as Storey (2004: 126) concludes, '...despite substantial public spending in this area, there is currently no satisfactory assessment of the link between small firm, formal management training and firm performance.' This is also consistent with Georgiadis and Pitelis (2016: 410), who suggest that 'the impact of owner-managers training on firms' profitability may be different from that of non-managerial employees.'

The paper proceeds as follows. We first review the literature and derive the hypotheses. We then present and discuss the data used in this paper. In the two sections that follow, we discuss our results and findings, respectively. In the last section, we conclude the paper and provide suggestions for further research.

Literature Review and Hypotheses

The importance of training for SMEs

In recent decades, extensive research has examined the links between HRM practices and firm performance, and a positive link between the two has been identified in many studies (see Jiang and Messersmith, 2017). Studies have also increasingly considered the potential complementarities between HR practices (Kepes and Delery, 2008; Jackson et al., 2008), examining, for example, whether they are additive or synergistic (Jiang et al., 2012; Jiang and Li, 2019). A central proposition of such studies is that to achieve high levels of performance, small and large firms should train their workers and managers (e.g.: Aragon and Valle, 2013; Golhar and Deshpande, 1997; Hayton, 2003; Rosli and Mahmood, 2013; Stavrou and Brewster, 2005; Zheng, Morrison & O'Neill, 2006).

The importance of training in SMEs has also been stressed (Bryan, 2006). This is because, at the macro-level, an increase in human capital can drive regional and national economic growth (see Acemoglu and Pischke, 1998; Barro, 2001). Also, at the firm-level, employees' human capital can contribute to a firm's competitiveness, thereby helping them outperform the competition (see Carmeli and Schaubroeck, 2005; Koch and McGrath, 1996;

Wright and McMahan, 1992). Additionally, job training can help workers and their employers to bond, potentially improving interpersonal relations and team working, thus reducing employee turnover (Becker, 1994; Blundell et al., 1999) and enhancing employee well-being (Mellor et al., 2016). Yet existing studies suggest training occurs less often in small firms and that even when it does occur, there is a low rate of employee participation (Brown, Hamilton and Medoff, 1990; Curran et al., 1993; Kerseley et al, 2006; Townroe and Mallalieu, 1993; van Wanrooy et al, 2013). However much of the existing research has tended to examine the time and effort organisations dedicate to training, with less attention being focused on understanding the nature of the association between the training activity and organisational performance. As a result, the empirical evidence ‘remains debatable’ (Panagiotakopoulos, 2011: 351).

Types of training

Training can be defined as ‘any attempt, within or outside the organisation, to increase job related knowledge and skills of either managers or employees’ (Jayawarna et al., 2007: 324). It involves off- and on-the-job activities focused on developing skills, knowledge, and capabilities (Garavan et al., 2020). Lynch (1991) differentiates between three forms of training: on-the-job training; training as an apprentice; and off-the-job-training. Aragon-Sanchez et al. (2003), on the other hand, classify training according to its provision as a formal or informal process, and whether it takes place outside or inside the firm, respectively.

While scholars have noted that SMEs generally provide informal training since it is less expensive and can be more easily incorporated into the firm’s operational tasks, it has also been suggested that firms should provide staff with sufficient formal training to improve their competitive position in the marketplace (Stewart and McGoldrick, 1996). For example, it is suggested that small firms prefer in-house training to external training because it is perceived that external training may not be appropriately tailored to the firm’s needs (Kitching and Blackburn, 2002). However, some SMEs may prefer to source external staff to train employees rather than training them internally (e.g.: Laforet and Tann, 2006; Zambarloukos and Constantelou, 2002). External training may also inspire new and innovative work practices, or potential improvements in organisational policies and managerial strategies. (e.g.: Nolan, 2002). However, a key question remains: what exactly is formal and informal training and how are they linked to firm performance?

Jayawarna, Macpherson and Wilson (2007: 234) define informal training as ‘ad-hoc, fragmented and flexible’. From this it can be inferred that formal training is planned in nature with predetermined objectives (Manuti et al., 2015) and a ‘structured mode of delivery, where

the aim is to impact new awareness or knowledge of a workplace process or activity' (Patton and Marlow, 2002: 261). Although the existing evidence tends to suggest that some positive association between training and firm performance exists, estimates of the isolated impact of formal and informal training are ambiguous (Aragon & Valle, 2013; De Winne and Sels, 2010; Jayawarna et al., 2007; Jones et al., 2013; Kitching and Blackburn, 2002; Storey, 2002). In the context of SMEs, training often takes the form of work-based training (Kotey and Folker, 2007), and such in-house training could be classified as an informal type of training (e.g.: Kitching and Blackburn, 2002; Westhead and Storey, 1996). Perhaps this is because formal training is costly and the short-term returns are not sufficiently high for small firms to justify the investment (Hankinson, 1994; Fernald, Solomon and Bradley, 1999; Pajo, Coetzer and Guenole, 2010; Storey and Westhead, 1997). Importantly, participating in informal learning heavily depends on individual characteristics, such as self-efficacy and a strong interest in the profession and professional development (Beckett and Hager, 2002; Lohman, 2005; Manuti et al., 2015). As SMEs start growing, however, informal strategies for managing people become increasingly inadequate and, as a result, firms begin to implement formal procedures (Kaman et al., 2001; Kotey and Slade, 2005). Hence, enhancing HR formality allows firms to deal with internal uncertainty and diversity among the workforce and, thus, improve their productivity, competitiveness and financial performance (see Storey and Sykes, 1996).

It has been suggested that on-the-job training focuses more on the skills that are related to the firm (Lynch, 1991; McArdle, 2015) and involves one-to-one communication between the 'trainers and trainees in the workplace' (Ju and Li, 2019: 216). Off-the-job training, on the other hand, includes different types of training programmes, such as classes at venues away from the workplace location (Jacobs, 2003; Royalty, 1996). Although there may be differences in how on- and off-the-job training are delivered, it has been suggested that both provide opportunities for learning and acquiring new sets of knowledge and skills (Ju and Li, 2019). To this end, previous research finds that SMEs consider training to be a critical factor for their success, with the preference being towards on-the-job training where practical skills than theoretical elements are learnt and incorporated into the business model (Vinten, 2000). A study by Panagiotakopoulos (2011), focusing on SMEs in Greece, shows that owner-managers of small firms placed more emphasis on the benefits gained from on-the-job-training that helped staff to reduce mistakes and cut production costs, as opposed to off-the-job-training that is not tailored to the specific needs of the firm. Hence, training in SMEs occurs less often than in large firms, and when it does take place, it does so in informal settings rather than in formal settings that are not designed for learning purposes, and it is often organised by the operational

unit (e.g.: Brown, Hamilton and Medoff, 1990; Hill and Stewart, 2000; Panagiotakopoulos, 2011; Storey, 1994).

In this paper, however, we propose that the knowledge and skills obtained from combining both types of training (that is, on- and off-the job training) will generate greater levels of firm performance than when they are conducted individually. According to the RBV and Knowledge Based View (KBV), the creation of knowledge is an interactive process where objective and subjective aspects combine to shape the environment of the business (Nonaka and Toyama, 2007). This view suggests that tacit knowledge is the most important aspect for the firm since it is codified and difficult to imitate by rivals (Nonaka and Takeuchi, 1995). Hence, it can be argued that ‘training creates the human skills that, taken together, are the repository in which the tacit knowledge of an organisation resides’ (Johnson, Baldwin and Diverty, 1996: 113). Exposure to different types of training will allow employees to share their existing knowledge and experience, obtain new skills and information, and apply these in the workplace (Chen and Huang, 2009). Therefore, participation in on- and off-the-job types of training will allow individuals to be exposed to new sets of skills and knowledge, leading to sustained competitive advantage. Thus, the paper hypothesises that:

H1: Both types of staff training increase the likelihood of reporting increased turnover performance, although the magnitude of the combined impact will be greater than that of the individual components.

Importance of managerial training in SMEs

Due to multiple task challenges and limited labour resources, owner-managers often have heavy job demands, meaning they have limited time to dedicate to training and development for themselves or for the business more generally (Chadwick et al., 2013). They might instead ‘take mental shortcuts and fall back on what they have tried and seen work in the past’ (Hambrick, 2007: 336). This observation is important, given that previous research shows that incompetent management is responsible for firms exiting the market (e.g.: Baldwin et al., 1997; Bruno and Leidecker, 2001). Alassadi and Al Sabbagh (2015) propose two routes through which owner-managers can enhance their management practices: consultancy and training. Training may allow owner-managers to step back and dedicate time to improving their technical and entrepreneurial expertise, as well as enhancing their skills in key management areas including strategic management, finance, growth strategies, marketing systems, and HR (Nolan and Garavan, 2016; Walker et al., 2007). Managerial training may also act as a catalyst

for further investment in training for the wider workforce (Rigg and Trehan, 2002). This is important, given that existing research suggests that owner-managers in SMEs have a limited appreciation of the potential value they could gain from formal training (Walker et.al, 2007), together with evidence that suggests owner-managers' participation in training is positively associated with firm size (Storey and Westhead, 1994).¹ According to OECD (2002: 5) 'smaller firms are less likely than larger enterprises to provide external training to all grades of workers, including managers'. Indeed, one study suggested that 44 per cent of SMEs provide internal managerial training (and the larger firms offered more training than the smaller ones) while 59 per cent of SMEs sub-contracted training to outside trainers. This is perhaps because small firms lack the resources to conduct in-house training and the job-training for owner-managers must therefore be externally provided (Kitson and Wilkinson, 1998: 21).

For small firms to survive and achieve growth, effective management is important (Fuller-Love, 2006). It has also been suggested that managers can affect firm success (Collins and Clark, 2003), especially in smaller firms where owner-managers/entrepreneurs are the main decision makers and undertake a wide variety roles (Filatotchev and Piesse, 2009). It would therefore seem reasonable to suggest that managerial training can be beneficial, enabling managers to develop the skills, knowledge, and competencies to manage more effectively (Devins et al., 2002; Fuller-Love, 2006) and that, in turn, managerial training will affect firm performance (Aragon and Valle, 2013; De Winne and Sels, 2010). Managers also tend to have larger training budgets than the rest of the workforce, and even when a company is in recession, the managerial training budget is more impervious to cuts than the general training budget (Aragon and Valle, 2013).

However, the evidence regarding the impact of managerial training on firm performance is mixed. Some studies report a weak statistical effect of management training on firm performance (Kitching and Blackburn, 2002; Storey and Westhead, 1995; Storey, 1994; Wong et al., 1997), while others find that management development activity is positively associated with business growth and development (Clarke et al., 2006), improved performance and reduced failure (Curran et.al, 1996; Freel, 1999; Fuller-Love, 2006; Stanworth and Grey, 1992; Winterton and Winterton, 1997), market exploitation (Gold and Thorpe, 2008), as well as improvements in managerial performance and the recruitment and retention of staff (Gray and Mabey, 2005).

¹ For instance, the OECD (2002) estimated that the external management training market for SMEs (that is, micro, small and medium) was GBP 203.1 million while for large firms it was estimated to be GBP 332.6 million.

Nevertheless, given the critical role that is played by SME owner-managers, it seems reasonable to expect that ‘the impact of owner-managers training on firms’ profitability may be different from that of non-managerial employees’ (Georgiadis and Pitelis, 2016, 410). Hence our second hypothesis is that:

H2: SMEs offering managerial training increase the likelihood of reporting increased turnover performance compared to SMEs offering non-managerial training only.

Data

The paper uses the 2015 Small Business Survey conducted by the Department for Business, Innovation and Skills (BIS) (2016a). More than 15,000 UK SME owner-managers were interviewed (for more details, see BIS, 2016b). Regarding the variables of interest, the survey includes information on firm actual/intended performance, employee/owner-manager training, as well as related information on firm characteristics and activities (e.g.: firm age, firm size, exporting, turnover, industry, region). Following previous work (e.g.: Boehe, 2013; Ganotakis and Love 2011; Idris and Saridakis, 2018; Love and Roper, 2015; Lu and Beamish, 2006; McDougall and Oviatt, 1996; Nguyen and Bryant, 2004; Saridakis et al., 2019; Sheehan, 2014) the various firms’ characteristics and activities are used as controls in the regression models. Information about the key variables used here is provided in the Appendix (see Tables A1, A2 and A3), and all the variables employed are described in Table 1.

<< Insert Table 1 about here >>

Measuring Firms’ Performance

Both government and policy makers have paid attention to the growth of SMEs as an important factor for reducing unemployment (Robson and Bennett, 2000; Storey, 1994). The growth of SMEs is generally proxied by the number of employees. However, owner-managers of SMEs are usually concerned with their financial performance, such as growth in sales and turnover (e.g.: Bartlett, 1994; Robson and Bennett, 2000). In this paper, we follow previous literature (e.g.: Saridakis et al., 2018), and use two measures of SMEs’ performance: perceived actual and intended turnover performance.

Perceived actual turnover performance: Owner-managers were asked, ‘*Compared with the previous 12 months, has your turnover in the past 12 months increased, decreased or stayed*

roughly the same?' (BIS, 2016b: 91). The responses are coded as one if the turnover 'decreased', two if the turnover 'stayed the same', and three if the turnover 'increased'.

Intended turnover performance: Owner-managers were asked: *'In the next 12 months do you expect your turnover to increase, decrease, or stay roughly the same?'* (BIS, 2016b: 92). Again, an ordered variable is constructed taking the value of one if turnover will 'decrease', two if turnover will 'stay the same', and three if turnover will 'increase'.

Measuring Training

The survey allows us to separate between on- and off-the-job training for both employees and owner-managers.

Off-the-job staff training (that is, employee and/or owner-manager) training: The survey asks all firms that employ staff at all levels, *'Over the past 12 months, has your organisation arranged or funded any off-the-job training or development for employees? By off-the-job training we meaning [sic] training away from the individual's immediate work position, whether on your premises or elsewhere'* (BIS, 2016b: 85). This variable takes the value of one if the firm provides off-the-job training and zero otherwise.

On-the-job staff training (that is, employee and/or owner-manager) training: Similarly, the survey asks all firms that employ staff at all levels, *'Has your organisation arranged or funded any on-the-job or informal training and development over the last 12 months? By this I mean activities that would be recognised as training by the staff, and not the sort of learning by experience which could take place all the time'* (BIS, 2016b: 85). This is also a binary variable and thus it takes the value of one if the firm provides on-the-job training and zero otherwise.

Using the above two survey questions, we then construct an index variable in order to capture whether staff received off-the-job training, on-the-job training, both forms of training (that is, on- and off-the-job) or no training at all.

Managerial training: The survey asks firms that provide training, *'Did any of the managers in the business receive this off-the-job or informal on-the-job training or development during the last 12 months?'* If yes: probe for whether formal off the job, informal on the job, or both (BIS, 2016b: 85). We create a measure capturing if owner-managers received off-the-job training, on-the-job training, both forms of training, or no training at all.

Statistical Model

We use an ordered probit analysis to examine our research hypotheses (Stock and Watson, 2007).² In order to address potential selection bias when analysing the effect of training on SME performance (Caliendo and Kopeinig, 2005), this paper uses propensity score matching techniques (Cameron and Trivedi, 2005; Rosenbaum and Burin, 1983). Propensity score matching is a statistical technique that estimates the probability of an SME being assigned to a specific treatment (that is, training) conditional on observed baseline factors or a set of observed covariates (Austin, 2011). Briefly, the treatment group (Training occurs if $T=1$) can be compared to a control group (Training does not occur if $T=0$), with the latter group serving as counterfactual to the former group. The propensity score can be written as:

$$p(X) = \Pr(T = 1|X) = E(T|X) \quad (1)$$

where X is the pre-treatment characteristics. Using a matched sample, the model is re-estimated and the outcomes between the treated and control observations can be compared:

$$P = \begin{cases} P_0 & \text{if } T = 1 \\ P_1 & \text{if } T = 0 \end{cases} \quad (2)$$

Using the nearest neighbour matching approach, we estimate the Average Treatment effect on the Treated (ATT). For estimating propensity scores for nominal treatments, a multinomial logistic regression is used, utilising the Marginal Mean Weighting through Stratification (MMWS) method (Huang et al. 2005; Hong, 2010; 2012; Linden, 2014).

Empirical Results

Perceived Actual Performance

In Table 2, we present the ordered probit results. First, we test the relationship between training and SMEs' perceived actual performance (Models 1 - 6). We find that off-the-job training for staff (that is, employee and/or owner-manager) (Model (1), Table 2) is positive and significantly related to SMEs' perceived actual performance (coeff.=0.118).³ We also find that

² An ordered logit model provides similar results and thus is not discussed here.

³ We extract the marginal effects, and the results show that off-the-job staff training is positive and statistically significant, suggesting that SMEs that provide off-the-job staff training are 4.5 percentage points more likely to be in the 'increasing' category of perceived actual performance. Further, the results show that off-the-job staff training is associated with being 2.7 percentage points less likely to be in the 'decreasing' category and 1.7 percentage points less likely to be in the 'stayed the same' category of perceived actual performance.

on-the-job staff training (Model (2), Table 2) is positive and significantly related to SMEs' perceived actual performance (coeff.=0.134).⁴

In Model (3), we test the effects of training differentiated types of staff (that is, for employee and/or owner-manager) on SMEs' perceived actual performance. The results show that, compared to no training at all, off-the job, on-the-job and both types of staff training (that is, off- and on-the-job) are positive and statistically significantly related to SMEs' perceived actual performance (with the coefficients being 0.108, 0.121, and 0.190, respectively). In addition, we obtain the marginal effects and the results indicate that both types of staff training (that is, off- and on-the-job) increase the likelihood of being in the 'increasing' category of perceived actual performance by 7.2 percentage points. However, off-the-job and on-the-job staff training alter the probability of being in the 'increasing' category of actual performance by 4.1 percentage points and 4.6 percentage points, respectively. Using the Wald test (see Judge et al., 1985), we further test if the coefficients of different forms of training are statistically different from each other. We find that for off-the-job and on-the-job staff training $\chi^2(1) = 0.08$ and Prob. = 0.781. However, for off-the-job training only and both types of training (that is, off- and on-the-job) we find that $\chi^2(1) = 4.27$ and Prob. = 0.038. Similarly, for on-the-job training only and both off- and on-the-job training $\chi^2(1) = 4.43$ and Prob. = 0.035.

In Model (4), we restrict the sample to those SMEs that offer staff training; the results show that, compared to the on-the-job type of training, only both types of staff training (that is, off- and on-the-job) is positive and significantly related to SMEs' perceived actual performance (coeff.=0.072).⁵ Overall, our results give support to our *H1* that while both off- and on-the-job staff training, (that is, for employees and/or owner-managers) increase the likelihood of reporting increased turnover performance, their combined impact is greater than the impacts generated individually.

When testing for the effect of managerial training on perceived actual performance (Model (5), Table 2), the results show that, compared to non-managerial training, both types

⁴ We extract the marginal effects, and the results show that on-the-job staff training is positive and statistically significant, suggesting that SMEs that provide on-the-job staff training are 5.1 percentage points more likely to be in the 'increasing' category of perceived actual performance. Moreover, the results show that on-the-job staff training is associated with being 3.1 percentage points less likely to be in the 'decreasing' category and 1.9 percentage points less likely to be in the 'stayed the same' category of perceived actual performance.

⁵ We also obtain the marginal effects, and the results show that the coefficient of both types of staff training (that is, employee and/or owner-manager) is positive and statistically significant, suggesting that SMEs that provide both types of training are 2.8 percentage points more likely to be in the 'increasing' category of actual performance. The results also show that both types of staff training is associated with being 1.6 percentage points less likely to be in the 'decreasing' category and 1.1 percentage points less likely to be in the 'stayed the same' category of actual performance.

of training (that is, off- and on-the-job) are positive and statistically significantly related to SMEs' perceived actual performance. Hence, it can be inferred that SMEs that provide both types of managerial training increase their likelihood of being in the 'increasing' category of perceived actual performance (coeff.=0.080). The results show that when owner-managers receive a single type of training (whether it be off-the-job or on-the-job), the perceived actual performance of the firm is not affected. We obtain the marginal effect for both types of managerial training, and the results show that SMEs that provide both types of training are 1.8 percentage points less likely to be in the 'decreasing' category of perceived actual performance, 1.3 percentage points less likely to be in the 'stayed the same' category of perceived actual performance, and 3.1 percentage points more likely to be in the 'increasing' category of actual performance. In Model (6), Table 2, the sample is restricted to those SMEs that offer managerial training. The results show that, compared to on-the-job training, off-the-job and both types of training (that is, off- and on-the-job) are not statistically significantly related to SMEs' perceived actual performance. Therefore, our results give support to our *H2* that managerial training increases the likelihood of reporting increased turnover performance compared to non-managerial training.

Intended Performance

Second, in Table 2, we examine the relationship between training and SMEs' intended performance (Models 1a - 6a). In Model (1a, Table 2), we test the association between off-the-job training for staff (that is, employee and/or owner-manager) and SMEs' intended performance, and find that the coefficient of off-the-job staff training is positive and statistically significant (coeff.=0.089).⁶ In addition, the results show that on-the-job staff training (Model (2a), Table 2) is positive and statistically significant (that is, SMEs that offer on-the-job staff training increase their likelihood of being in the category of the highest intended performance, coeff.=0.141).⁷

⁶ We also extract the marginal effects, and the results show that off-the-job staff training is positive and statistically significant, suggesting that SMEs that provide off-the-job staff training are 3.4 percentage points more likely to be in the 'will increase' category of intended performance. Further, the results show that off-the-job staff training is associated with being 1.2 percentage points less likely to be in the 'will decrease' category of intended performance, and it is also associated with being 2.1 percentage points less likely to be in the 'will stay the same' category of intended performance.

⁷ We also extract the marginal effects, and the results show that on-the-job staff training is positive and statistically significant, suggesting that SMEs that provide on-the-job staff training are 5.4 percentage points more likely to be in the 'will increase' category of intended performance. The results also show that off-the-job staff training is associated with being 1.9 percentage points less likely to be in the 'will decrease' category of intended performance and it is also associated with being 3.4 percentage points less likely to be in the 'will stay the same' category of intended performance.

In Model (3a) of Table 2, we test the association between staff training and SMEs' intended performance. The results show that, compared to no training, on-the-job training only and both types of training are positive and statistically significantly related to SMEs' intended performance (coeff.=0.127 and coeff.=0.173, respectively). However, the magnitude of both types of training is higher than for on-the-job training only ($\chi^2(1) = 1.84$ and Prob. =0.175). We also obtain the marginal effects, and the results show that SMEs that offer on-the-job and both types (that is, that is, off- and on-the-job) of staff training are 4.8 percentage points and 6.6 percentage points, respectively, more likely to be in the 'will increase' category of the intended performance.

In Model (4a) of Table 2, the sample is restricted to those SMEs that offer staff training. The results show that, compared to on-the-job staff training, the coefficients of off-the-job training alone and for both types (that is, off- and on-the-job) of staff training are statistically insignificant. In Model (5a) of Table 2, we test the association between managerial training and SMEs' intended performance. The results show that, compared to non-managerial training, combining the two types of training (that is, off- and on-the-job) is statistically significant and positively related to SMEs' intended performance (coeff.=0.090).⁸ However, when restricting the sample to only those SMEs that offer training to owner-managers, the results in Model (6a) of Table 2 reveal that, compared to on-the-job training alone, off-the-job training alone and both types of managerial training are not statistically significant.

Again, the intended performance model findings provide further support for *H1*, highlighting the importance of training, especially the joint training of employees and/or owner-managers, on SME performance. In addition, the results provide support for *H2*, indicating the importance of managerial training compared to non-managerial training.

<< Insert Table 2 about here >>

Propensity Score Matching Estimates

To address the potential endogeneity between off-the-job staff (that is, employee and/or owner-manager) training and perceived actual firm performance, we use propensity score matching techniques and the nearest neighbour estimator. The results are in Table 3. We find that for firms that offer off-the-job staff training (Model 1), off-the-job training has increased the

⁸ We also obtain the marginal effects and the results show that SMEs that provide both types of managerial training are 3.4 percentage points more likely to be in the 'will increase' category of the intended performance while being 1.2 percentage points less likely to be in the 'will decrease' category and 2.1 percentage points less likely to be in the 'will stay the same' category of intended performance.

perceived actual performance. Moreover, we find that for firms that offer on-the-job staff training (Model 2), the treatment has increased the perceived actual performance. Turning to the intended performance model in Table 3, we find that for firms that offer off-the-job staff training (Model 1a, Table 2), the off-the-job training coefficient is positive but statistically insignificant. We also show that for SMEs that offer on-the-job staff training (Model 1b, Table 2), the training increased intended performance.

Furthermore, a model allowing for multiple nominal level treatments is estimated. Overall, the results from this model are in line with the results presented in Model (3) of Table 2.⁹ We also apply propensity score matching techniques for Model (5) of Table 2 and find the coefficients to be greater in magnitude, with on-the-job managerial training becoming significant at the 5 per cent level, off-the-job managerial training becoming statistically significant at the 5 per cent level, and both types of managerial training becoming statistically significant at the 1 per cent level. Finally, estimating a model that allows multiple nominal level treatments for Model (3a) in Table 2 produces coefficients that are smaller in magnitude, with on-the-job staff training becoming statistically insignificant. For Model (5a), Table 2, we find that the coefficients are greater in magnitude and that the coefficient of on-the-job managerial training turns out to be statistically significant at the 10 per cent level.

<< Insert Table 3 about here >>

Findings from the Control Variables

Although the full set of results is not presented in this paper, a look at the control variables reveals some results that are similar to those reported in previous studies mentioned above. For example, the results in Model (3) of Table (2) show that as SMEs increase in size, they are more likely to be in the ‘increased category’ of perceived actual performance (coeff. = 0.111, ME=4.2 percentage points). Also, while exporting has been found to be positively and significantly associated with SMEs’ perceived actual performance (coeff.= 0.059, and 2.2 percentage points more likely to be in the increased category of perceived actual performance) the results show that the exporting variable in Model (5) of Table (2) is statistically insignificant for SMEs’ perceived actual performance.

⁹ However, the coefficients are generally smaller in magnitude, with off-the-job staff training becoming statistically insignificant.

Robustness Check using Sub-Sample Estimates

Given that it has been implied ‘that exporting firms are more productive than non-exporting firms’ (Love and Roper, 2015: 38), we also split the sample into SMEs that are engaged in exporting (as a proxy of internationalisation) and those firms that focus only on their domestic market.¹⁰ Briefly these results (available upon request) show that off-the-job staff training is an important predictor for non-exporting firms whereas on-the-job staff training exhibits a positive effect on both SME groups, although the effect on non-exporting firms is greater in magnitude when compared to exporting firms. Finally, we show that providing both off- and on-the-job managerial training is linked to higher SME intended (actual) performance for the exporting (non-exporting) SMEs. This may suggest that owner-managers should focus their resources on obtaining both types of managerial training, which can enhance their internationalisation strategy and, ultimately, their future performance.

Conclusions

We have empirically examined the association between training and SME performance. Our results have shown that off- and on-the-job staff training (that is, training for employees and/or owner-managers) are statistically significant and positively related to SMEs’ perceived actual and intended performance. In line with previous studies we find that staff training positively affects firm performance (e.g.: Chinomona, 2013; de Wiele, 2010; Jones et al., 2013; Litz and Stewart, 2000). Therefore, our analysis lends support to the view that training is a powerful mechanism that enables firms to grow and develop their capabilities (Chandler and McEvoy, 2000). It can be argued, for example, that staff training allows staff to adapt to and prepare for changes in their surrounding environments (Bryan, 2006). In addition, lifelong learning can improve an employee’s career progression, leading to greater flexibility and higher rewards, and improving the competitiveness of the firm (de Wiele, 2010). Hence, training is important for SMEs to stimulate their growth and performance.

¹⁰ Some previous research shows differences in HR settings between internationalised and non-internationalised firms. Ruzzier, Antončič and Konečnik (2006), for example, find that internationalised SMEs have greater resources than firms that focus on their domestic markets, while Burger, Damijan, Kostevc and Rojec (2017) imply that investment activities of firms that are engaged in exporting will be more responsive to changes in cash flow than firms that do not export. We argue that training, especially managerial training (see Hitt et al., 2006), can assist the business owner to adapt to an unfamiliar environment and understand foreign-market dynamics, and thus improve performance (see, e.g.: Baldwin and Harrigan, 2010; Harris and Kumra 2000; Morris and Robie 2001). For this reason, we estimate separate models for SMEs that are involved in international activities through exporting, and for SMEs that focus on domestic market only.

It is essential for SMEs to provide training opportunities for their staff since improved human capital is linked to economic growth (Lucas, 1993), and employees can contribute to their firms' competitive advantages at the micro level (Koch and McGrath, 1996). Our results regarding the effect of staff training on firms' intended performance is consistent with previous literature (e.g.: Bryan, 2006) that indicates that employee training will enable firm growth, especially for firms that intend to expand and increase their performance (Johnson and Gubbins, 1992). Our study thus supports the view that firms can create a specific form of aggregate knowledge, skills, and abilities through human resource practices such as training (Onkenlinx, Manolova and Edelman 2016) that in turn can enhance firm-level performance (Ployhart, Weekley and Ramsey, 2009).

Second, we examined the impact of staff (that is, employee and/or owner-manager) training on SMEs' perceived actual and intended performance by differentiating between different types of training, namely off-the-job, on-the-job, and a combination of both types of training. Our results have shown that, compared to firms that offer no training at all, when staff (that is, employees and/or owner-managers) receive both types of training (that is, off- and on-the-job), training is strongly linked to SMEs' performance. This builds upon previous literature that has examined the effects of off- and on-the-job training on firm performance but has not considered the possible effect of a combination of both types of training. While our results support past empirical studies, indicating that off- and on-the-job forms of training enhance business performance (for example, Black and Lynch, 1996; Dearden, Reed, and Van Reenen, 2000), they also show that when staff receive both types of training (that is, off- and on-the-job) the effect on SMEs' perceived actual and intended performance is stronger. It has been indicated that informal/on-the-job types of training are more likely to be provided by SMEs (Anderson, Boocock and Graham, 2001; Jayawarna, Macpherson and Wilson 2007; Jones et al., 2013). However, we argue that a combination of both types of staff training (that is, off- and on-the-job) may allow staff to gain advanced knowledge and skills appropriate to their roles in the company, which can ultimately be linked to enhanced firm performance.

Moreover, it has been suggested that failing to provide employees with appropriate formal training might hamper SMEs' capacity to build strong competitive advantage (Stewart and McGoldrick, 1996). Training has not enjoyed a reputation, especially by small firms, as a tool and instrument that helps firms generate value and competitive advantage. After all, no matter how meritorious training may potentially be, organisations do not exist to provide excellent training for their staff; they exist rather to provide a product or service, and training may not be an HR priority for every company. This is especially the case for SMEs who

generally have fewer resources to invest in training. Equally, not all businesses choose to compete on the basis of high skills, knowledge, and quality (Grugulis, 2019). However, it has been suggested that firms can improve their performance by devising a training strategy that provides new and existing employees with the required skills and knowledge to perform their job (Bryan, 2006, Lyons and Mattare, 2011). Moreover, our results have shown that, compared with on-the-job types of training, both type of employee and/or owner-manager training affect SMEs' perceived actual performance in a positive way. Hence, in contrast to previous studies, we suggest that combining off- and on-the-job training may be a more effective strategy to boost SME performance than focusing on a single form of training.

Third, we investigated the effect of managerial training on SMEs' perceived actual and intended performance. The results show that when SMEs provide both types of managerial training (that is, off- and on-the-job), their perceived actual and intended performance are more likely to be in the 'increasing performance' category. Hence, we argue that obtaining new knowledge and skills can be gained through off- and on-the-job training (Westhead and Storey, 1996). Our results are consistent with previous literature, indicating that training 'can, and should, be a powerful agent of change facilitating and enabling a company to grow' (Jennings and Banfield, 1993: 3). Therefore, SMEs should focus and divert their resources to provide both types of managerial training to achieve better performance outcomes.

In conclusion, our results showed that SMEs' all staff training (that is, employees and/or owner-managers) could take the form of either on-the-job and/or off-the-job training; however, *combining* both exerts still stronger effects on firm performance. On the other hand, managerial training must combine off- and on-the-job training if it is to produce any significant increase in firm performance. Our results support the argument that 'the impact of owner-managers training on firms' profitability may be different from that of non-managerial employees' (Georgiadis and Pitelis, 2016: 410).

To summarise, our study contributes to both the HRM and small business literatures. We add to the long-standing HRM-performance debate by specifically exploring the role of training as part of performance-enhancing HRM strategies and confirming its positive contribution in the context of SMEs. We thus respond to calls to investigate the particular forms and combinations of HR practices that are associated with superior performance. By applying the RBV and the KBV theories, we also directly respond to the call for more research into the association between different types of training and business outcomes (Jones et al., 2013); a topic that has long been underemphasised in previous literature. In doing so, our study provides new empirical evidence to suggest that providing employees and owner-managers with both

types of training (that is, off- and on-the-job) can increase SMEs' performance. We argue that off-the-job and on-the-job training provides the workforce with complementarities and specific skills that improve firm performance. Second, we contribute to previous literature by differentiating the impact of managerial and non-managerial training, separately, on firm performance (Georgiadis and Pitelis, 2016).

Our results have significant managerial and academic implications. For SME owner-managers, contrary to previous studies (e.g.: Fuller et al., 2003; Kotey and Folker, 2007), we suggest that SMEs that provide their employees and owner-managers with both types of training (that is, off- and on-the-job) can increase their performance levels when compared to SMEs that focus solely on a single type of training. We suggest that a complementarity exists between these types of training and that through them, employees and owner-managers can acquire greater sets of skills and knowledge beneficial for their firms. In addition, we highlight the importance of SME owner-managers receiving training (both off- and on-the-job) and its potential effect on firm performance.

As regards our contribution to research, our results nuance the evidence regarding the link between training and SMEs' performance. Our findings support the argument that the acquisition of knowledge and skills can be acquired through off- and on-the-job training (Westhead and Storey, 1996). In particular, we differentiate between the individual impact of training and the combined impact of receiving off- and on-the-job training. Specifically, we contribute to the existing literature by providing empirical evidence to support the argument that 'the impact of owner-managers training on firms' profitability may be different from that of non-managerial employees' (Georgiadis and Pitelis, 2016: 410).

There are, of course, a number of issues that require further research. Due to data limitation, we used mainly dichotomous variables; hence, future research should consider additional dependent variables (e.g.: actual sales data) and investigate how training affects firm performance between firms in different sectors. Second, the data does not allow us to investigate in detail the subjects that were covered during training and the number of hours spent on training activities. Therefore, future research should investigate in more detail if, for instance, training led to formal qualifications and how many hours were spent on different types of training. Finally, using a qualitative or mixed method approach may provide significant insights into the reasons that prevent SMEs from providing their staff with formal training opportunities, as well as the content and perceived value of training activities in particular organisational settings.

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Table 1: Variables Definition Used in this Study

Variable	Definition
Perceived Actual Performance	Index taking the value of 1=if turnover decreased; 2=if turnover stayed the same; and 3=if turnover increased.
Intended Performance	Index taking the value of 1=if turnover will decrease; 2=if turnover will stay the same; and 3=if turnover will increase.
Off-the-job Staff Training	Whether the firm provides off-the-job employee and/or owner-manager training (coded 1) or not (coded 0).
On-the-job Staff Training	Whether the firm provides on-the-job employee and/or owner-manager training (coded 1) or not (coded 0).
Types of Staff Training	Dummy =1 if the firm provides off-the-job training for employee and/or owner-manager. Dummy =1 if the firm provides on-the-job training for employee and/or owner-manager. Dummy =1 if the firm provides both (that is, off- and on-the-job) training for employee and/or owner-manager. Dummy =1 if the firm does not provide training for employee or owner-manager (base category).
Managerial Training	Dummy =1 if the firm provides off-the-job managerial training. Dummy =1 if the firm provides on-the-job managerial training. Dummy =1 if the firm provides both (that is, off- and on-the-job) managerial training. Dummy =1 if the firm does not provide managerial training (base category).
Internationalisation (that is, export)	Whether the firm sells goods and/or services outside the UK (coded 1) or not (coded 0).
Size of the Firm	$\ln(1 + \text{number of employees})$.
Age of the Firm	Broken down into age bands (0–5 years = 1, 6–10 years = 2, 11–20 years = 3, > 20 years = 4). Dummy variables are created for each category. (Base category 1=0-5years.)

Legal Status	Legal status of the business (sole proprietorship = 1, company = 2, partnership = 3). Dummy variables are created for each category. (Base category 1=sole proprietorship.)
Sites	Number of sites the business has (1 site = 1, 2 sites = 2, 3 sites = 3, 4–10 sites = 4, 11+ sites = 5). Dummy variables are created for each category. (Base category 1=1 site.)
Regions	Location of the business (England = 1, Scotland = 2, Wales = 3, Northern Ireland = 4). Dummy variables are created for each category. (Base category 1=England.)
Sectors	SIC 2007 (1-digit) classification. Dummy variables are created for each category. (Base category 14=Other services.)

Table 2: The Association Between Training and SMEs Perceived Actual and Intended Performance (All Firms)

Sample	Perceived Actual Performance						Intended Performance					
	(1)	(2)	(3)	(4)	(5)	(6)	(1a)	(2a)	(3a)	(4a)	(5a)	(6a)
Ordered probit regression												
Off-the-job staff Training	0.118***						0.089***					
	<i>0.024</i>						<i>0.025</i>					
On-the-job staff Training		0.134***						0.141***				
		<i>0.026</i>						<i>0.026</i>				
Types of Staff Training (Base category: no training)												
<u>Off-the-job training</u>			0.108***						0.054			
			<i>0.042</i>						<i>0.043</i>			
<u>On-the-job training</u>			0.121***						0.127***			
			<i>0.037</i>						<i>0.038</i>			
<u>Both training</u>			0.190***						0.173***			
			<i>0.031</i>						<i>0.032</i>			
Types of Staff Training (Base category: on-the-job training)												

<u>Off-the-job training</u>												
<u>Both training</u>												
Managerial Training (Base category: non-managerial training)												
<u>Off-the-job training</u>												
<u>On-the-job training</u>												
<u>Both training</u>												
Managerial Training (Base category: on-the-job managerial training)												
<u>Off-the-job training</u>												
<u>Both training</u>												
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
log Likelihood	-10232.342	-10230.628	-10225.267	-7579.879	-7580.543	-5432.544	-9210.883	-9203.161	-9201.505	-6837.088	-6837.721	-4925.132

Chi 2(degrees of freedom)	517.74(29)	521.17(29)	531.89(31)	359.58(30)	358.25(31)	265.33(30)	605.99(29)	621.43(29)	624.74(31)	429.75(30)	428.48(31)	322.87(30)
Obs.	10294	10294	10294	7720	7720	5585	10474	10474	10474	7836	7836	5666

Notes: All models control for variables mentioned before (results are available upon request).

For robustness check, we also estimate the model using ordered logit model. The results are similar and available upon request. Values in *italics* are standard errors.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Propensity Score Matching Results for Perceived Actual and Intended Performance Models

Approach	Nearest Neighbour Matching				MMWS Approach		MMWS Approach	
Model	Model 1 (Staff Training)		Model 2 (Staff Training)		Model 3 (Staff Training)		Model 5 (Managerial Training)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Off-the-job Training[^]	0.038*	0.022			0.074	0.048	0.099**	0.043
On-the-job Training[^]			0.087***	0.031	0.099**	0.042	0.096**	0.044
Both Training[^]					0.187***	0.036	0.107***	0.035
Off-the-job Training^{^^}	0.026	0.022			-0.033	0.049	0.043	0.044
On-the-job Training^{^^}			0.086***	0.025	0.054	0.044	0.082*	0.046
Both Training^{^^}					0.097**	0.038	0.109***	0.036

[^] Perceived actual performance model. ^{^^} Intended performance model

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A1: Description of the Main Variables (Sample in Percentage)

Variable	%
Perceived Actual Turnover Performance†	
<i>Decreased</i>	18.061
<i>Stayed the Same</i>	42.777
<i>Increased</i>	39.161
Intended Turnover Performance †	
<i>Decreased</i>	9.730
<i>Stayed the Same</i>	44.094
<i>Increased</i>	46.176
Off-the-job Staff Training †	58.709
On-the-job Staff Training †	64.500
Types of Staff Training †	
<i>Off-the-job Training</i>	10.065
<i>On-the-job Training</i>	15.856
<i>Both Training</i>	48.644
<i>No Training</i>	25.434
Managerial Training ^	
<i>Off-the-job Managerial Training</i>	16.333
<i>On-the-job Managerial Training</i>	14.447
<i>Both Managerial Training</i>	41.678
<i>Non-Managerial Training</i>	27.539

† $n_{SMEs} = 14379$;

† $n_{SMEs} = 14553$;

‡ $n_{SMEs} = 10879$;

^ $n_{SMEs} = 8112$.

Table A2: Correlation between Key Explanatory Variables and Perceived Actual Turnover Performance

Variable	Corr.
Off-the-job Staff Training †	-0.087*
On-the-job Staff Training †	0.099*
Types Staff Training †	
<i>Off-the-job Training</i>	-0.009
<i>On-the-job Training</i>	0.004
<i>Both Training</i>	0.092*
<i>No Training</i>	-0.103*
Managerial Training ^	
<i>Off-the-job Managerial Training</i>	-0.004
<i>On-the-job Managerial Training</i>	0.004
<i>Both Managerial Training</i>	0.034*
<i>Non- Managerial Training</i>	-0.037*

† $n_{SMEs} = 10294$;

^ $n_{SMEs} = 7720$.

* $p < 0.05$

Table A3: Correlation between Key Explanatory Variables and Intended Turnover Performance

Variable	Corr.
Off-the-job Staff Training †	0.050*
On-the-job Staff Training †	0.072*
Types of Staff Training †	
<i>Off-the-job Training</i>	-0.015
<i>On-the-job Training</i>	0.013
<i>Both Training</i>	0.059*
<i>No Training</i>	-0.069*
Managerial Training ^	
<i>Off-the-job Managerial Training</i>	-0.020
<i>On-the-job Managerial Training</i>	0.015
<i>Both Managerial Training</i>	0.017
<i>Non-Managerial Training</i>	-0.014

† $n_{SMEs} = 10474$;

^ $n_{SMEs} = 7836$.

* $p < 0.05$