



Ethnic diversity in SME business teams: generating employment growth through digitalisation, innovation, and exporting

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Abstract This paper examines how the ethnic composition of SMEs' business teams, also in conjunction with their strategic behaviour (including digitalisation, innovation and exporting), affect their employment growth. The study conceptualises different forms and aspects of social capital to develop the theoretical framework and hypotheses. We utilise the UK Office for National Statistics' Longitudinal Small Business Survey data for the period of 2018–2020 to test our hypotheses. Our study shows that ethnically diverse business teams achieve relatively higher employment growth as compared to more

homogeneous teams. Moreover, ethnically diverse business teams that embrace innovation, international expansion, and digitalisation translate these strategies more effectively into increased employment compared to their more homogenous counterparts.

Plain English Summary Culturally diverse business teams of small and medium-sized enterprises (SMEs) boost employment growth through a richer internal pool of knowledge, amplifying this effect via strategic choices. Exploring the impact of ethnic diversity within business teams on the employment growth of SMEs, we find that ethnically diverse teams tend to outperform more homogenous ones in terms of employment growth. We posit that this advantage arises from a richer pool of knowledge shared within diverse teams, which is facilitated by close cooperation within SME teams that builds internal social capital. Furthermore, diversity within business teams enhances attitudes of openness and tolerance that in turn may facilitate motivation and ability of team members to access knowledge outside the firm. This drives employment growth and also amplifies the effects of digitalisation, exporting, and innovation strategies. Our study suggests that fostering ethnic diversity within SME business teams can enhance both knowledge resources and social capital, affecting business growth. Entrepreneurs should consider embracing cultural diversity within their SME business teams as beneficial, while policymakers may

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appreciate that within-firms micro-effects of diversity may accumulate to help local community-building and economic development.

Keywords SMEs growth · Ethnic diversity · Social capital · Digitalisation · Exporting · Innovation

JEL Classifications D22 · J15 · L25 · O31 · Z13

1 Introduction

One of the key questions in business research pertains to entrepreneurial dynamism and employment growth in businesses. Despite existing literature, this remains an area open to further contributions and debate (Arouri et al., 2020; Esaku, 2022; Gobey & Matikonis, 2021; Nason & Wiklund, 2018). The question of employment growth is seen as important because it is associated with effective economy-wide sectoral changes and/or ‘Schumpeterian’ competition (Arouri et al., 2020; Esaku, 2022). The debate on the most relevant firm-level drivers of employment growth emphasises the strategic engagement of entrepreneurs, including innovation, that shape the unique contribution of the entrepreneur to growth (Audretsch et al., 2014). Other scholars focus on specific constraints of SME’s growth, such as access to finance (Beck & Demircuc-Kunt, 2006) and study policies, including taxation (Gobey & Matikonis, 2021). A closely related stream of literature explores the institutional (Autio & Acs, 2010; Estrin et al., 2013) and the firm level (Estrin et al., 2022) factors of growth aspirations.

This study contributes to the literature by examining the relationship between employment growth and the micro-level ethnic composition of business teams.¹ This micro dimension reflects broader transformations in Western societies, driven by long-term immigration processes, resulting in increased ethnic heterogeneity (Prenzel et al., 2024). Ethnic diversity is one of the important dimensions of cultural diversity (Audretsch et al., 2021), and culture is an important factor affecting the patterns of growth and performance of small and medium-sized enterprises (SMEs) (Parrilli, 2012; Polyviou et al., 2020). Within

this broader context, our research focuses on how the micro-level ethnic composition of a business team impacts SMEs’ employment growth. To address this question, we propose a theoretical framework that first emphasizes the importance of sharing knowledge assets (Polyviou et al., 2020) and particularly their role in achieving high growth performance (Foss et al., 2008). Knowledge sharing is a vital aspect of social capital alongside trust and shared norms. In particular, trust and sharing knowledge are interdependent, as the latter is facilitated by trustfulness of those who provide information, which is assumed true by recipients (Coleman, 1988; Frankfurt, 2006). In other words, we could say that social capital enhances the impact of knowledge and human capital. Accordingly, our proposed framework underscores the importance of social capital within business teams (Polyviou et al., 2020), which may imply relatively higher gains from diversity compared with those arising between the directors of large corporations. We posit that in addition to the knowledge contributed by individual team members (i.e. human capital), the team’ structural and relational aspects, especially its diversity, play a role in employment growth. Further, we argue that the members of the business team are embedded in a social context (Foss et al., 2008), and this implies potential access to community assets, capabilities, and support (Parrilli, 2012; Saxenian, 2012).² Thus, broader resources are catalysed by the wider communities, to which the members of the diverse business team belong. At the same time, we posit that tolerance and openness they learn while working within diverse business teams also facilitates access to these external social resources. These varied social resources may relate to knowledge, community support to individuals, as well as business development services such as training and access to finance under different formal and informal schemes available within these communities (Dei Ottati, 2018; Ndofor

¹ We will use the term ‘business team’ to denote owners and managing directors or other senior directors or, more concisely, owners and directors of SME.

² We consider social capital as an attribute of any social group, following the classic conceptualisation of Coleman (1988; 1994). These groups can be either small (like a business team, within an SME) or large (like an ethnic community, within a wider social environment). Accordingly, in what we discuss here, we talk about social capital at two different levels of the socioeconomic system: at the micro and the meso/macro level.

& Priem, 2011; Parrilli, 2012; Parrilli et al., 2019; Prenzel et al., 2022; Saxenian, 2012).

Consistent with the knowledge-based view (Zahra et al., 2007; Hillebrand et al., 2020), knowledge is typically seen as identified in such elements of human capital as formal education and occupational experience, which differ as to the degree of their growth-inducing potential (Bosma et al., 2004; Nason & Wiklund, 2018; Tryba et al., 2023). Yet, we argue that at the business team level, its diversity also represents further knowledge creation opportunities that may impact on performance (Nason & Wiklund, 2018; Hillebrand et al., 2020). We propose to consider the ethnic diversity within the business team as a carrier of varied yet shared knowledge, sustained and enhanced by team-specific internal social capital that shape firms' growth potential. This is consistent with Foss et al., (2008: 86), who observe that 'sustained entrepreneurial productivity requires internally knowledgeable team entrepreneurship and an organisational environment (including effective governance) that encourages cognitive heterogeneity, positive team dynamics, and resource learning'.

More generally, we contribute to one of the business research areas, the ethnic composition of business teams, that has not been tackled in full, particularly in the context of small and medium-sized businesses, and, as we argue, ethnic diversity may influence business employment growth. As we already observed, the importance of the ethnic dimension has been amplified by a significant transformations in businesses over the past few decades. This reflects broader socioeconomic processes, including the integration of (new) ethnic communities within host countries, alongside pre-existing ethnic minorities such as Irish Travellers, Roma, Sami, and other groups. The radical transformation of the ethnic and cultural landscape presents both opportunities and challenges for the effective functioning of businesses, institutions, and markets (Audretsch et al., 2021; Parrilli et al., 2019; Sassen, 1988). Accordingly, we chose the context of one of the countries that has undergone a profound social and economic change alongside the technological one, the UK (Lee, 2014).

To the best of our knowledge, the relationship between the ethnic diversity of business teams and employment growth performance has not been investigated. The approach we adopt in this paper focuses on studying the multi-ethnic reality of

SMEs through the lenses of social capital (Polyviou et al., 2020), and—as will be explained next—we postulate that ethnically diverse business teams utilise their knowledge resources thanks to complementary layers of social capital, corresponding to their business team composition and implied external linkages, which helps to amplify their firms' employment growth.

We posit first that the business teams generate internal *bonding* social capital in terms of mutual support, which also facilitate access to diverse ethnicity-specific human resources that may contribute to the success of new and existing firms (Polyviou et al., 2020). Presence and interaction across ethnic minorities and ethnic majority within business teams can generate valuable shared knowledge, understanding, and collaboration, which are conducive to growth. As observed by Putnam (2000: 87), the 'benefit of workplace-based connections is that the workplace is much more diverse, racially and even politically, than most other social settings'. This diversity enhances quality of the resulting micro scale social capital.

Secondly, this is complemented by external *bridging* social capital. It represents the openness of team members towards culture, institutions, and knowledge of other/non-homogeneous people and communities (Parrilli, 2012; Putnam, 2000; Woolcock, 2004), which is learned through the experience of working within diverse business teams. Here, bridging involves access from the business team to external social capital of diverse communities within the host country, including both the ethnic majority and minorities, as well as cross-border connections of those ethnic minorities that are migrant-based (Saxenian, 2012; Dei Ottati, 2014). Bridging social capital, to which the diverse business team has access, reflects in micro scale the interactions and collaborations among these different ethnic communities, resulting in access to growth-inducing social knowledge and resources.

Further, we apply the ethnic diversity perspective to analyse the performance implications of SME business teams' strategic choices that take advantage of the rapid technological change, the internationalisation of markets, and the digital transformation of the economies. Earlier studies recognise the importance of engagement of entrepreneurs and managers in strategic activities to grow their

businesses (Bingham & Eisenhardt, 2008). Product and process innovation, and entering new markets are also central to employment growth aspirations of entrepreneurs (Estrin et al., 2022). The emergence of digital solutions, platforms, and networks (e.g. information technology connecting a wider pool of economic agents and customers, or enabling new financial methods such as crowdfunding) represent new opportunities to overcome startups' financing constraints (Fonrouge & Bolzani, 2019), to reach a broader customer base and faster scalability via e-commerce (Nambisan et al., 2019), and to pursue innovation through experimentation and flexibility (Autio et al., 2018), leading to higher entrepreneurial entry (Belitski et al., 2023) and growth (Bruno et al., 2024). Building on this, we expect the ethnically diverse business teams—with enhanced access to bridging social capital outside SMEs, and based on the valuable bonding social capital within the SME business team—to attain a stronger growth performance by being able to amplify the impact of critical strategic choices, compared with ventures with more homogenous teams.

Accordingly, the contribution of this research is two-fold. First, building upon the theory of knowledge-sharing component of social capital (Coleman, 1988), we develop the theoretical argument and offer novel empirical evidence on how the ethnic composition of SME business teams shape their growth performance. We treat ethnic diversity as a shared knowledge resource with its growth-inducing potential stretching beyond the individual human capital element, to include the benefits stemming from enhanced use of external networks associated with diverse ethnic composition of business teams. When considering social mechanisms, we specifically emphasise the complementarity of layers of social capital and their impact on growth of SMEs characterised by heterogenous business teams.

Second, we posit that the impact of SMEs' strategic choices on their employment growth is contingent on the ethnic composition of their business teams. Our empirical analysis allows for the direct comparison of the impact of SMEs' strategic engagement on employment growth across three types of ethnic compositions of business teams (without ethnic minorities, with their presence though not majoritarian, and with their majoritarian presence).

In the next section, we discuss the theoretical framework which considers the effects on employment growth performance of the ethnic diversity of the business team seen from the perspective of social capital theory and of the business team's strategic choices. The following section provides details on the dataset and on variables and techniques of analysis adopted for the empirical part. We then present our results and discuss them, before concluding with implications for policymakers and practitioners.

2 Theoretical framework and hypotheses

2.1 Business team's ethnic diversity and employment growth

SMEs' role receded into backstage when Schumpeter (2014 [1942]),³ and other scholars later on, emphasised the primary role of large corporations, multinational companies, or 'national champions' in the development of industries and economies (Bianchi & Labory, 2006; Dunning, 2008). It is from the 1980s when the role of entrepreneurs, mostly related to the strength of SME clusters and industrial districts, was recognised again as a key driver of local and national economies (Becattini, 1990; Piore & Sabel, 1984). And it is in the context of SMEs, where ownership and management remain associated with each other, and their entrepreneurial traits may become a steppingstone of growth. The flexibility of managers' entrepreneurial services determines the firms' ability to grow via shaping their creativity, potential, and vision (Kor et al., 2016).

For many years, at least implicitly, this entrepreneurial drive was assumed to be related to the

³ Via articulation of the role of 'creative accumulation' described as Schumpeter mark II regime. In turn, the Schumpeter mark I regime is known as the process of 'creative destruction', where Schumpeter (2008[1934]) emphasised the role of the entrepreneur as prime cause of economic development, showing how the innovating entrepreneur challenges incumbent firms by introducing new inventions that make current technologies and products obsolete. In later years, he saw the greater role in the economic development process to be played by larger firms seen as outperforming their smaller counterparts in the innovation and appropriation process through a strong positive feedback loop between innovation and R&D activities.

individual. For example, Harper (2003) posits that the specific forms of entrepreneurship are culturally conditioned, and while the role of leading entrepreneur is prominent in individualistic societies, such as US or UK, ‘a conception of entrepreneurship teams is more applicable to group-oriented societies, such as Japan’ (*Ibid.*: 8). It is only more recently when the focus was widened to highlight the role of heterogeneity of business (entrepreneurial)⁴ teams, including in individualistic cultural settings.

Business teams pull together different strengths, capabilities, and skills to compete in global markets (Zahra et al., 2007). The business team formation will also go beyond the central knowledge component to include important ‘social and cultural norms, meaning systems and core principles’ (Lazar et al., 2020: 34), which help to identify a more comprehensive concept of the business team. This consideration reaffirms that ‘...the discovery of a profit opportunity need not be “all in the head” of an enterprising individual but could instead be a socially distributed process that involves joint action possibilities and team entrepreneurship’ (Harper, 2008: 613–614). Business teams’ heterogeneity may be seen as a distinctive resource, which is particularly suitable for innovation exploration and exploitation, contributing a wider range of cognitive perspectives in decision-making of businesses (Alexiev et al., 2010; Koryak et al., 2018), conducive to fast adaptations and growth (Eisenhardt & Schoonhoven, 1990; Nason & Wiklund, 2018).

Business decisions and outcomes are shaped by the cognitive and social dynamics of business teams, related to the demographic diversity of its members (Bromiley & Rau, 2016). The relations between business team members form the basis for team-specific social capital. Their capacity to trust each other; work together; and share ideas, resources, skills, capabilities, plans, and strategies relying on the set of values, norms, routines, knowledge, and culture they share (Aragon et al., 2019; Lazar et al., 2020). In that sense, a homogeneous business team (reflecting the bonding

component of social capital) may experience lower internal transaction costs, with common knowledge base, easier communication, and less scope for misunderstanding and conflict (Hofstede, 1998). This is the standard argument that has been applied to family firms, among others (Hillebrand et al., 2020; Mickiewicz & Rebmann, 2020).

Moreover, unlike large firms’ directors, SMEs’ business teams are more conducive to generate team-specific social capital, because their interactions are characterised by a denser set of reciprocal relations based on ‘lower hierarchies and close relationships, commitment and respect among team members’, which often lead to long-term working relations within the company (Polyviou et al., 2020). These relations correspond to the conditions of social ‘closure’, identified by Coleman (1988, 1994) as the key factor in the emergence of sustainable of social capital. Based on the above characteristics, SME business teams are likely to develop effective norms of trust, openness, and cooperation conducive to sharing knowledge. Such structural, relational, and cognitive components combine to promote a resilience-enhancing social capital (Polyviou et al., 2020). This implies that, thanks to the low-hierarchy and closer interdependent relationships within SMEs, the potential negative effects of team heterogeneity (e.g. less experience and routines in common) are likely to be overcome, while the beneficial effects of more diverse structure of knowledge are enhanced.

Coleman’s (1988, 1994) conceptualisation of teams’ social capital may be augmented with the observation that the organisations differ on a spectrum between those that are closed or open to the external environment (Hofstede, 1998). In our conceptualisation, ethnic minorities and majority members in diverse business teams can pull together both elements proactively (internal closeness/proximity and external openness). The individuals who make up the team have autonomous access to a wider, external social capital. Thus, social capital within the business team is formed across its different ethnic members and groups; at the same time, they bring in benefits of their relations to the broader communities of ascription. Furthermore, diversity within the team lead to learning and attitudes of team members that next facilitate their broader linkages with the diverse environment.

⁴ The reason we prefer the term ‘business team’ over ‘entrepreneurial team’ is that the latter could be interpreted as associated more narrowly with new companies. In turn, ‘managerial team’ applies to large companies, while within SMEs, not only managers but also owners tend to play an active role, and these two categories are likely to be not separated.

These key facets of social capital generate beneficial aspects that relate first to sharing of knowledge and information (Coleman, 1988) and, when the business team is ethnically/culturally diverse, to merging diverse sources of knowledge and successfully combining them within the SMEs' business teams, producing positive effects on employment growth. Thus, team's diversity implies parallel, enhanced access to different broader socio-cultural bases and corresponding communities' resources (e.g. social support and access to community-driven business services and finance) that may contribute to the success of these ethnically mixed business teams (Lazar et al., 2020; Parrilli, 2012). Thanks to these internal and external forces, SMEs can reap the benefits of building on multiple groups' knowledge, business services (e.g. financial schemes), and community's support measures (e.g. access to and understanding of the specific groups of clients).

Thus, it is a combination of social capital internal to the SME's business team and access to external social capital that we consider as a firm's resource characteristics resulting in versatility and adaptability, conducive to employment growth. This is because team diversity implies internal sharing of wider sources of knowledge (i.e. skills and capabilities), as well as commitment, motivation, trust, cooperation, and learned openness to diverse social environment, generating further knowledge acquisition potential. The study of Silicon Valley by Saxenian (2012) shows the importance of Chinese and Indian 'argonauts' (i.e. entrepreneurs/managers) combining with local and other foreigners within business teams for bolstering innovation and competitiveness. These attitudes in turn facilitated access to the knowledge embedded in the local environment. We build on these arguments and findings and emphasise that combining ethnic minorities' and ethnic majority's presence in business teams is likely to form fertile ground for business growth, producing a balanced mix, with both positive effects of internal diversity of the team (Pol-yviou et al., 2020), and more effective external connections to a diverse, wider pool of knowledge and other resources (Lazar et al., 2020). This implies that business teams that benefit from an integrated group of the ethnic majority and ethnic minority members are more likely to exploit these advantages, producing higher growth compared to ethnically homogenous

business teams. Based on this discussion, our first hypothesis is formulated as follows:

H1: The presence of ethnic minorities' members within the SME business team is expected to produce a positive impact on employment growth.

2.2 Strategic choices, knowledge, social capital, and employment growth

We now turn to the strategic choices made by the business teams in relation to critical drivers of competitiveness. Earlier research considers the role that strategic orientation, captured via innovation and risk-taking, in conjunction with business team characteristics, plays in explaining SME performance (Escribá-Esteve et al., 2009). In this study, we investigate how not only innovation but also internationalisation through exporting and digitalisation affect SME growth, while this being conditioned by the composition of the entrepreneurial team. We posit that ethnic diversity, viewed as a broad knowledge-related factor, helps SME business teams to amplify the effects of a range of strategic actions.

The first strategic activity we consider is digitalisation and how it is used to contribute to generate growth performance across different business teams. Digitalisation is a central technological aspect of the transformation that is affecting the global economy and the firm (Verhoef et al., 2021). The surge in digitalisation is also transforming entrepreneurship, empowering smaller and younger firms to increase their customer reach via e-commerce platforms and engaging in e-marketing (Mazzarol, 2015); redefine their business models; experiment freely; and maintain flexibility by reducing asset specificity and separating integrated activities (Autio et al., 2018). This results in an ongoing evolution of offerings, positively affecting economic performance of businesses (Autio et al., 2018; Bruno et al., 2024; Nambisan et al., 2019).

Here, we argue that digitalisation is particularly beneficial for ethnic entrepreneurs, because they engage in digital/online communications to a higher extent, partly due to likely external connection with the country representing their ethnic community and

partly due to social distance within the country where the SME is located.

In the digital era, we are witnessing the rise of virtual diasporas, which can be defined as the online extension of real diaspora communities. In the case of migrants and their descendants,⁵ they utilise these virtual networks for engaging in various forms of online interactions with members of their diasporic group residing in the same country, other countries, including individuals from their homeland countries, and members of non-ethnic communities within the broader transnational space (Keles, 2016; Laguerre, 2010; Rodima-Taylor & Grimes, 2019). This trend has also led to the rise of transnational entrepreneurial diasporas (Brinkerhoff, 2009), the emergence of which presents smaller businesses with ethnic minority or majority presence with opportunities to enhance their market reach, helping overcoming cultural and linguistic barriers ethnic entrepreneurs face (Evansluong et al., 2023), engaging with diverse consumer groups, mitigating possible product market discrimination ethnic entrepreneurs may face (Borjas & Bronars, 1989), fostering collaborations, and allowing tapping into a pool of diverse talent (Elo et al., 2022). Leveraging these online communities can enhance business growth of ethnic entrepreneurs (Evansluong et al., 2023) and also bolster their resilience during turbulent times (Elo et al., 2022), benefiting particularly ethnically diverse business teams, as their extended reach encompasses a broader network of both ethnic minorities and natives, enhancing their wider market penetration and stability. Furthermore, their within-team experience of cooperation across ethnic groupings builds skills needed to reach out to wider, diverse external ethnic environments.

As already argued, the diversity within the business team represents broad knowledge resources that include human and social capital. This complements and extends Hofstede's view (1998: 483–484) on organisations that correspond to open rather than closed systems and generate rich diversity of knowledge. Once these knowledge resources are in place

and are underpinned by knowledge-sharing that corresponds to within-team social capital (Coleman, 1988; Lazar et al., 2020; Polyviou et al., 2020), the organisation is more likely to benefit from the digital resources, which in turn facilitate external knowledge acquisition, thus generating an effective impact on growth performance (Autio et al., 2018).

Overall, we argue that the impact of digitalisation on growth performance is likely to be enhanced when diverse business teams are managing the business. In case of diverse teams, we expect wider access to internal and external social capital compared with the more homogenous teams. Such diversified resources (social capital) will thus make a more effective use of digitalisation for economic performance. Therefore, we posit the following:

H2: The presence of ethnic minorities' members within the SME business teams is expected to amplify the positive impact of digitalisation on employment growth.

Another strategy we consider is technological innovation, including both product and process innovation. Particularly since the twentieth century, the success of businesses is ascribed to the entrepreneurial mindset organised around specific knowledge resources and capabilities supporting innovation (Schumpeter, 2008[1934]; Bessant & Tidd, 2007; Drucker, 2012). Furthermore, incentives to innovate imply protection from imitation. The World Trade Organization approved the Trade-related Property Rights (TRIPs) in 1994, thus no business, industry, and country should imitate any competitor's technological innovations (Srinivasan, 1999). Hence, in technology-intensive industries such as pharmaceuticals and automotive or aircraft, in a country where intellectual property rights are widely applied like the UK, one way to differentiate one's own production is through intensive R&D activities developed by skilled specialists in STEM disciplines. However, for resource-constrained SMEs, it is costly to pursue an R&D-based innovation strategy.

In recent years, scholars have investigated the 'innovation paradox' and explored alternative ways for fostering innovation (Edquist, 2005; Jensen et al., 2007). They identified a business mode of innovation that does not rely on the expensive investment in R&D, but one that stresses the role of learning-by-doing,

⁵ Immigration-originated ethnic groups make up a significant proportion of all ethnic entrepreneurs, though not exclusively, as other ethnic minorities, including indigenous people, have populated some countries for centuries.

by-using, and by-interacting (DUI) based on drivers that are both internal and external to the firm, including repeated practice and collaborations with supply chain agents. This is an effective mode of producing innovations and competing in global markets. The Danish and Norwegian experiences show this successful approach that is well matched with their firms' demography mostly based on SMEs (Fitjar & Rodriguez-Pose, 2013; Jensen et al., 2007). Other countries have recently proved the effectiveness of the DUI mode for most types of innovation outputs, and particularly process and organisational innovation (see Thoma, 2017, on Germany; and Parrilli et al., 2020, on Eastern and Southern European countries). Within this approach, the role of social capital is particularly strong as the DUI innovation mode works through the team engagement, trust, and cooperation both within the firm and across supply chain agents (Jensen et al., 2007; Parrilli et al., 2020).

Within this context, we assess the impact of ethnically diverse business teams to understand whether they may apply the more effective modes of generating innovation and in particular, if these SMEs engage in explorative innovation (Alexiev et al., 2010; Koryak et al., 2018). We form an expectation that ethnically diverse business teams are not only likely to produce more innovations (D'Ambrosio et al., 2019; Schneider et al., 2019), but also translate those innovations into stronger employment growth. This results from the multifaceted knowledge shared within the diverse business team, where members contribute personal insights and cultural perspectives to managerial practice, amplifying the impact of innovation produced either via the science and technology (STI) mode or the DUI mode.

Thus, we expect ethnically diverse management teams to exploit innovations to generate growth (Nathan & Lee, 2013). This is due in part to the team members' diverse social connections, and learned attitudes of openness facilitating use of diverse external connections, that generate opportunities to offer new products in different markets where they have an easier entry point. These different local, regional, and international connections are likely to be both provided and utilised in full by diverse business team members.

When it comes to innovation, yet another aspect implied by the combination of ethnic minority and ethnic majority business team members becomes

important. Such a social combination within the team implies close, repeated contact with those who are socially different along the ethnic and cultural dimension. Consistent with social psychology findings, this is likely to lead to more tolerance and openness (Pettigrew, 1998), thus implying more innovation-friendly behaviour (Mickiewicz et al., 2019; Prenzel et al., 2024), which is especially relevant within a DUI approach to innovation. This increased willingness to accept innovation may lead to higher propensity to implement and commercialise new products and services effectively and rapidly (Prenzel et al., 2024), which in turn may generate stronger growth.

Combining these arguments, we propose the following hypothesis:

H3: The presence of ethnic minorities' members within the SME business team is expected to amplify the positive impact of technological innovations on employment growth.

The final focus of our attention is on the role of team diversity in amplifying the effects of internationalisation, and specifically of exporting, on business growth. Traditionally, the competitive capacity of firms implies entering global markets and selling their products to broader customer bases (Porter, 2008). Interestingly, SMEs have been able to join these markets competitively. The study of European SMEs shows the consistent capacity of SMEs to export (in 2019, SME accounted for 38% of EU exports; see Eurostat, 2021). Thus, SMEs are able to engage in exporting activities at the more demanding but also rewarding markets (Cao et al., 2016). This activity requires competences and knowledge based on internal resources such as specialised human capital including experience in global markets, commitment to exporting, and export-oriented organisation (Bianchi & Wickramasekera, 2016).

Different types of SME business teams may engage differently in exporting activities, and such engagement is likely to generate diverse growth performance. In particular, we expect socially integrated yet diverse managerial teams to enact a more effective approach than homogeneous business teams. This is likely to depend on two main factors. First, they are better able to focus on such markets, as it is likely that their minority ethnicity will

imply linkages to countries with which this ethnicity is connected, not only in case of first-generation migrants.⁶ Second, as for the other two strategies we discussed, diverse teams are not only likely to exhibit multifaceted and yet significant knowledge about consumer needs in distant markets related to their ethnic composition (D'Ambrosio et al., 2019), but to develop attitudes that facilitate acquisition of knowledge related to diverse markets. As a result, these more heterogeneous teams' versatile resources may have stronger effects on transforming exporting into growth performance compared with business teams formed either by homogeneous local ethnic-majority managers or teams formed only/mostly by ethnic-minority managers. Hence, we propose the following hypothesis:

H4: Teams that include the presence of ethnic minorities' members are expected to exploit better their export activity, amplifying the positive effects of the latter on employment growth.

3 Data and methodology

3.1 Data

To address our research questions, we utilise Longitudinal Small Business Survey (LSBS) made available from the UK Office for National Statistics, similar as, for example, Antcliff et al. (2021). The survey has been first commissioned by The Department of Business Innovation and Skills in 2015, building upon and extending the earlier Small Business Surveys. LSBS is conducted annually, with subsequent waves delivering repeated observations for the same companies. However, survey questions are organised into blocks, and these are applied to subsets of companies, within the same year of the survey. These blocks of questions are not followed for the whole period back to 2015. For that reason, to address our research questions, we have utilised three years of the survey that is for the period 2018–2020, where 2020 is the latest year that was available for analysis at time of writing. This also includes a period when businesses were subject

to the exogenous shock of COVID; therefore, finding the consistent outcomes is a challenge. Nevertheless, in examining the structural factors that contribute to the success and resilience of SMEs, we anticipate identifying significant findings across varying macro-economic conditions. These findings are expected to offer empirical support for the general validity of our hypotheses, particularly concerning the influence of ethnic diversity within business teams on the employment growth of SMEs.

3.2 Dependent variables and empirical strategy

We follow Arouri et al. (2020), Gobey and Matikonis (2021), and Esaku (2022) in choosing employment growth as the key performance dimension, which—as argued in this literature—have important implications for wider economic outcomes. For most firms, the sequence of growth starts from employment, followed by growth in sales, operating profits, and finally assets (Coad et al., 2017). This justifies our focus on employment growth, which also has a better data coverage in LSBS, and, unlike sales data which come only in an approximate form of 7-point Likert scale, employment growth can be constructed taking the logarithmic difference in employment in the current and previous year, which is identical to the logarithm of the ratio of the current over the previous employment as used by Arouri et al. (2020) and approximately to percentage change as used by Gobey and Matikonis (2021) and Esaku (2022).

We estimate employment growth model, using panel data techniques, starting with the fixed effects model (Model 1, Table 3). The fixed effects model specification (Model 1) is augmented with annual dummies and a battery of additional dummies based on two-digit sectors interacted with years, and local enterprise partnership (LEP)⁷ areas interacted with years, to control for sector-year and location-year time-variant unobserved heterogeneity. The model

⁶ This refers to communities formed through migration, not to ethnic minorities that have pre-existed in the country, either as long or longer than the ethnic majority.

⁷ Local enterprise partnerships (LEPs) are designed to represent functional economic areas, such as local labour markets. Established in 2011, LEPs are non-statutory collaborations among local authorities, businesses, and academia, and the third sector, aimed at fostering economic growth in their regions. Each LEP targets specific local needs, leveraging government support for initiatives such as community events, reducing unemployment, or developing new infrastructure. Currently, there are 38 LEP in England (Shearer, 2021).

utilises robust standard errors. It eliminates any (unobserved) time invariant firm-specific effects by

de-meaning all the variables using the ‘within’ transformation (Wooldridge, 2010):

$$\begin{aligned} \text{Employment_Growth}_{islt} = & \alpha_0 + \beta_1 \text{Digitalisation}_{islt} + \beta_2 \text{Process_Innovation}_{islt} + \\ & \beta_3 \text{Product_Innovation}_{islt} + \beta_4 \text{Export}_{islt} + \beta_5 \text{Ethnic_min:_presence}_{islt} + \\ & \beta_6 \text{Ethnic_min:_majority}_{islt} + \text{ZX}_{islt} + \mu \text{Z}_s + \gamma \text{V}_l + \Omega \text{U}_{st} + \eta \theta_{lt} + \text{D}_t + \phi_i + \varepsilon_{islt} \end{aligned} \quad (1)$$

where $\text{Employment_growth}_{islt}$ is the dependent variable proxied by a logarithmic change in employment; Digitalisation, Process_innovation, Product_innovation, and Export variables denote firm-level strategic choices, measured as dummy variables defined in Table 1. ZX_{islt} denotes a vector of firm-level controls (Lagged_employment_level (in logs); Lagged_turnover_level (in logs); Business_age (in logs); Legal_status (Sole_proprietorship; Partnership); Number_of_partners (in logs); Female_majority_ownership); μZ_s denote sectoral dummies; γV_l denote LEP dummies; ΩU_{st} and $\eta \theta_{lt}$ capture sector-year and LEP-year dummies respectively; D_t stand for year controls; ϕ_i for firm-level fixed controls; and ε_{islt} is the idiosyncratic error. Subscripts i , s , l , and t stand for firm, sector, LEP, and time, correspondingly (Table 2).

When estimating random effects model (Model 2), we use the same regressors and the same battery of additional dummies, as shown in specification (1). Next, accounting for the hierarchical structure of our data (firms clustered within LEP areas or two-digit sectors), Models 3 and 4 (Table 3) adopt an alternative, multilevel approach, utilising maximum likelihood with random effects defined by LEP areas (Model 3) and two-digit sectors (Model 4), with annual dummies included. We also explore the robustness of the results, adopting Mundlak’s approach (Bell et al., 2019) by including covariates averaged respectively at LEP area level (Model 5) and at sector level (Model 6).

Finally, in Models 7 and 8 (Table 4), we adopt a multi-equation design and utilise the generalised structural equation model (GSEM) in Stata to estimate jointly three employment growth equations for three groups of firms, split into three categories based on the presence of minority groups: (a) where ethnic minority groups are not represented among owners/managers (*ethnic_min:_absence*); (b) where minority ethnic groups are present, but in minority

(*ethnic_min:_minority*); (c) and where ethnic minority groups members are majority among owners/directors (*ethnic_min:_majority*). This three-way split approximates the empirical distribution of ethnic minority presence in even way. At the top of Table 1, we report average logarithmic change in employment calculated separately for each of the three groups. White British only entrepreneurial teams (a) stand out with lowest employment growth (−0.6%), indicating preliminary support for Hypothesis 1. Interestingly, for the two other categories representing sub-groups of business teams with ethnic minorities present, the second case, where ethnic minorities are present but do not dominate (b), shows higher employment growth (6%), as compared to category (c), where minority groups are in majority (2%).

Next, in Table 3 models, we combine categories (b) and (c) into one labelled *ethnic_min:_presence* (directly corresponding to our hypotheses), yet including it alongside *ethnic_min:_majority* (category (c)). That way, we can tease out an additional effect of ethnic minority groups constituting the majority within the business team, conditional on controlling for ethnic minority presence. In other words, this makes the second dummy nested in the first one so that we can evaluate if being in majority has an additional, incremental effect on growth for ethnic minorities among owners and directors. The category of firms without ethnic minority presence (*ethnic_min:_absence*) serves as a benchmark. We use this design to test Hypothesis 1. That is, in Models 1–6 we include two dummy variables: *ethnic_min:_presence* and *ethnic_min:_majority*.

To test Hypotheses 2–4, we utilise post estimation test on the equality of coefficients applied to three equations estimated jointly as Model 7 that was split by ethnic minority share categories (a), (b), and (c), as discussed above. The corresponding tests (Table 5) relate to coefficients on four variables: digitalisation,

Table 1 Definition of variables and descriptive statistics

Variable	Definition	Obs	Mean	St dev	Min	Max
Dependent variables						
Employment_growth	Percentage change in the current level of employment at period t over the previous level of employment (t-1), approximated as logarithmic difference					
	for the whole sample of SMEs (Models 1–6)	3.190	-0.003	0.4	-3.689	3.922
	for the group of SMEs which report no ethnic minority presence (category a, Models 7 and 8)	2.946	-0.006	0.399	-3.689	3.922
	for the group of SMEs which report ethnic minority presence < 50% (category b, Models 7 and 8)	80	0.06	0.407	-1.42	2.639
	for the group of SMEs which report ethnic minority presence ≥ 50% (category c, Models 7 and 8)	164	0.022	0.401	-1.609	2.398
Control and explanatory variables						
Lagged_employment_level (in logs)	The level of employment at t-1, taken in natural logarithm	3.190	2.306	1.458	0	5.525
Lagged_turnover_level (in logs)	The level of turnover at t-1, taken in natural logarithm	3.190	13.56	1.934	0	18.17
Business_age (in logs)*	Age of business, taken in natural logarithm	3.190	2.93	0.772	0.693	5.602
Legal status	Legal status is categorised as: 1 = sole proprietorship; 2 = private limited; 3 = partnership. Category 2 ('private limited'), representing more than 87% of SMEs in the sample, and is set as a reference category					
	Sole proprietorship, category 1. It accounts for 3% of businesses in the sample	3.190	0.029	0.168	0	1
	Partnership, category 2. It accounts for 10% of SMEs in the sample	3.190	0.10	0.301	0	1
Number_of_partners (in logs)	Total number of partners taken in natural logarithm	3.190	0.99	0.43	0.69	4.7
Female_majority_ownership	A dummy variable = 1 if the presence of female owners-managers ≥ 50%	3.190	0.17	0.37	0	1
Digitalisation	A dummy variable = 1 if answered 'Yes' to the question 'Do you use any technologies of web-based software to sell to customers, or for use in the management of your business?'; and 0 = otherwise	3.190	0.695	0.461	0	1
Process_innovation	A dummy variable = 1 if answered yes to the question 'Have you introduced new or improved processes?'; 0 = otherwise	3.190	0.289	0.453	0	1
Product_innovation	A dummy variable = 1 if answered yes to the question 'Have you introduced new or improved products?'; 0 = otherwise	3.190	0.350	0.477	0	1
Export	A dummy variable = 1 if answered yes to the question whether business exports goods or services; 0 = otherwise	3.190	0.305	0.460	0	1
Ethnic min: presence	A dummy variable = 1 if the presence of owners-managers of ethnic minority > 0	3.190	0.076	0.266	0	1
Ethnic min: minority	A dummy variable = 1 if the presence of owners-managers of ethnic minority > 0 but < 50%	3.190	0.025	0.156	0	1
Ethnic min: majority	A dummy variable = 1 if the presence of owners-managers of ethnic minority ≥ 50%	3.943	0.051	0.221	0	1

*Taking antilogarithm we get mean age of firms in the sample to be about 23 years, and the median to be about 19 years

Source: Office for National Statistics Longitudinal Small Business Survey data, 2018–2020, corresponding to data utilised to generate results reported in Tables 3 and 4

Table 2 Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Employment_Growth (1)	1														
Lagged_employment_level (in logs) (2)	-0.12	1													
Lagged_turnover_level (in logs) (3)	0.05	0.75	1												
Business_age (in logs) (4)	-0.08	0.23	0.23	1											
Sole proprietorship (5)	-0.02	-0.14	-0.16	0.03	1										
Partnership (6)	0.02	-0.16	-0.14	0.07	-0.06	1									
Number_of_partners (in logs) (7)	0.03	0.38	0.37	0.18	-0.08	-0.05	1								
Female_majority_ownership (8)	-0.02	-0.01	-0.08	-0.05	0.02	0.02	-0.07	1							
Digitalisation (9)	0.04	0.13	0.14	0.00	-0.08	-0.06	0.09	-0.01	1						
Process_innovation (10)	0.04	0.15	0.12	-0.01	-0.08	-0.06	0.09	0.003	0.15	1					
Product_innovation (11)	0.03	0.11	0.11	-0.03	-0.06	-0.07	0.09	-0.008	0.14	0.36	1				
Export (12)	0.03	0.14	0.24	0.10	-0.07	-0.10	0.16	-0.07	0.13	0.14	0.21	1			
Ethnic min: presence (13)	0.03	0.08	0.05	-0.07	0.01	-0.05	0.1	-0.02	-0.001	0.01	0.04	0.004	1		
Ethnic min: minority (14)	0.03	0.12	0.09	0.02	-0.03	-0.01	0.27	-0.01	0.01	0.04	0.05	0.04	0.56	1	
Ethnic min: majority (15)	0.01	0.004	-0.01	-0.1	0.03	-0.05	-0.07	-0.01	-0.01	-0.02	0.02	-0.02	0.81	-0.04	1

Source: Office for National Statistics Longitudinal Small Business Survey data, 2018–2020, corresponding to date utilised to generate the results reported in Table 3; variables 1–3 are dependent variables denoting employment growth rates for three groups of businesses characterised by different ethnic composition of the entrepreneurial team. These outcome variables are mutually exclusive and therefore no correlation coefficients are reported for them. They represent the data utilised for generating the results reported in Table 4

Table 3 Regression results from estimating employment growth model

Variables/model specifications	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Lagged_employment_level (in logs)	-0.843*** (0.096)	-0.108*** (0.013)	-0.115*** (0.012)	-0.104*** (0.008)	-0.116*** (0.008)	-0.112*** (0.008)
Lagged_turnover_level (in logs)	0.043* (0.019)	0.070*** (0.010)	0.073*** (0.009)	0.067*** (0.006)	0.073*** (0.006)	0.071*** (0.006)
Business age (in logs)	-0.491 (0.456)	-0.034** (0.010)	-0.034** (0.012)	-0.034*** (0.010)	-0.034*** (0.010)	-0.034*** (0.010)
Partnership		0.001 (0.026)	0.013 (0.027)	0.009 (0.024)	0.009 (0.024)	0.008 (0.024)
Number_of_partners (in logs)	-0.199 (0.235)	0.058*** (0.017)	0.062*** (0.012)	0.054** (0.018)	0.062*** (0.018)	0.058** (0.018)
Female_majority_ownership	-0.007 (0.209)	-0.005 (0.019)	-0.010 (0.017)	0.002 (0.018)	-0.011 (0.019)	-0.005 (0.019)
Digitalisation	-0.023 (0.038)	0.006 (0.018)	0.012 (0.019)	0.011 (0.016)	0.010 (0.016)	0.011 (0.016)
Process_innovation	-0.060 (0.050)	0.037* (0.016)	0.039+ (0.020)	0.038* (0.016)	0.038* (0.016)	0.041* (0.016)
Product_innovation	0.129* (0.050)	0.016 (0.016)	0.008 (0.017)	0.012 (0.016)	0.009 (0.016)	0.009 (0.016)
Export	0.246* (0.117)	0.019 (0.017)	0.007 (0.017)	0.002 (0.016)	0.008 (0.017)	0.007 (0.017)
Ethnic min: presence	0.419* (0.189)	0.077+ (0.045)	0.065* (0.030)	0.079+ (0.045)	0.067 (0.045)	0.078+ (0.046)
Ethnic min: majority	-0.290+ (0.158)	-0.035 (0.054)	-0.032 (0.037)	-0.041 (0.054)	-0.031 (0.054)	-0.045 (0.055)
No of observations	3190	3190	3190	3190	3190	3190
No of groups	2765	40	40	79	40	79
R squared within	0.64	n/a	n/a	n/a	n/a	n/a
Log-Likelihood statistic	3206	-1274.603	-1419.1	-1452.5	-1413.496	-1443.355
Akaike information criterion	-6096	3223.206	3028.201	3016.916	3042.992	3024.709
Bayesian information criterion	-5137	5268.047	3604.64	3356.712	3698.312	3443.386
Degrees of freedom	158	337	95	56	108	69
Random intercept (individual level)		.36*** (0.013)	.38*** (0.002)	.38*** (0.005)	.38*** (0.005)	0.38 (0.005)
Random intercept (LEP level)			7.19e-08*** (4.69e-07)		1.03e-12 *** (3.24e-12)	
Random intercept (SIC2DIG level)				.0259 *** (.0145716)		6.49e-11*** (1.85e-10)
Year dummies	YES	YES	YES	YES	YES	YES
Industry 2-dig dummies	YES*	YES	YES	NO	YES	NO
LEP dummies	YES*	YES	NO	YES	NO	YES

Table 3 (continued)

Variables/model specifications	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Year x industry dummies	YES	YES	NO	NO	NO	NO
Year x LEP dummies	YES	YES	NO	NO	NO	NO

Model 1 reports the results of a fixed effects model; model 2, random effects model; model 3, a multilevel model with data nested within local enterprise areas (LEP); model 4, a multilevel model with data nested within sectors (SIC2-digit); model 5, as model 3 with added peer-group effects (i.e. LEP-averaged covariates); and model 6, as model 4 with sectoral averaged covariates

YES*: These effects are eliminated by de-meaning when fixed effects estimator is used in Model 1 (based on firms as the panel variable)

LEP local enterprise partnership area. SIC2DIG two-digit Standard Industrial Classification sector

Sole proprietorship dummy was dropped for Models 1–6, and Partnership dummy for Model 1 automatically, as introduction of all the effects described in the previous paragraph resulted in perfect multicollinearity

Standard errors in parentheses; $^+p < 0.10$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

product innovation, process innovation, and exporting, to capture SMEs' strategic choices. We again employ a set of controls consistent with Models 1–6: firm age, legal status, total number of partners within the business team, female-majority firm ownership, and both initial turnover size and initial employment level of the firm (lagged by 1 year). The inclusion of the latter is critical: to avoid biased coefficients for change, the initial level of the corresponding variable needs always to be included (Bergh & Fairbank, 2002).

Using the same approach as when estimating Models 1–2, we further test the robustness of these results, introducing two-digit sectoral dummies interacted with years, and dummies for LEP areas interacted with years in Model 8. However, bringing in these extra controls comes at a cost of losing two control variables (total number of partners and female-majority firm ownership), given that the model does not converge otherwise.

Table 1 presents our variables of interest, their definitions, and summary statistics, and Table 2 contains raw correlations. Table 3 presents results of Models 1–6, and Table 4 contains results of three-equation Models 7 and 8. Finally, the results of relevant post-estimation tests in Table 5 are based on the results reported in Model 7.

4 Empirical results

Out of first two models reported in Table 3 (fixed vs. random effects that is Model 1 versus Model 2), a

Hausman test suggests a fixed effects model as more appropriate for our data. Goodness-of-fit statistics (AIC, BIC, Log-Likelihood tests) also uniformly suggest that a fixed effects model (Model 1) is superior compared with alternative random effects and multilevel models employed in this study (Table 3).

Following the results reported in Table 3, across all specifications (Models 1–4, 6) but one (Model 5), we note that the ethnic minority groups presence in a business team plays an important (positive) role in explaining employment growth. Overall, we conclude that Hypothesis 1 is supported (for graphical illustration of these results, see Figs. 1 and 2). Interestingly, there is no additional significant effect on employment growth of ethnic minority groups being in majority in the business team. With fixed effects specification (Model 1), the results suggest that the ethnic minorities groups representing a majority in the business team has a negative additive effect on employment growth (Fig. 3), albeit this effect is borderline in its significance ($p < 0.1$), which can be compared with the more significant positive effect of minorities groups presence in the business team ($p < 0.05$).

In the second step of our analysis, we divided the sample of SMEs among three disjoint groups discussed above: (a) businesses that are managed by a team of ethnic majority entrepreneurs (White British) with no ethnic minorities presence, (b) businesses where a minority group of ethnic entrepreneurs is present but not as majority, and (c) businesses that are managed by a majority of ethnic minority entrepreneurs. These are Models 7 and 8 reported in Table 4. The second case (b) may be considered the most

Table 4 Estimations of employment growth by ethnic composition groups

	Model 7			Model 8		
	ethnic_min absence (a)	ethnic_min minority (b)	ethnic_min majority (c)	ethnic_min absence (a)	ethnic_min minority (b)	ethnic_min majority (c)
Lagged_employ- ment_ level (in logs)	-0.117*** (0.014)	-0.413*** (0.044)	-0.131** (0.042)	-0.105*** (0.013)	-0.057*** (0.029)	-0.085 (0.111)
Lagged_turno- ver_level (in logs)	0.073*** (0.011)	0.074*** (0.013)	0.101** (0.032)	0.071*** (0.011)	-0.435*** (0.019)	0.080 (0.068)
Business_age (in logs)	-0.026* (0.011)	-0.274*** (0.063)	-0.057 (0.058)	-0.023* (0.010)	-0.949*** (0.013)	-0.141** (0.071)
Sole_proprietor- ship	-0.011 (0.042)		-0.378 (0.255)	-0.023 (0.038)		-0.231 (0.309)
Partnership	0.007 (0.028)	0.573*** (0.133)	0.216+ (0.121)	-0.005 (0.027)	0.899*** (0.052)	-0.406+ (0.211)
Number_of_part- ners (in logs)	0.061*** (0.018)	0.623*** (0.149)	0.035 (0.112)			
Female-majority firm ownership	-0.014 (0.020)	0.971*** (0.110)	-0.200+ (0.107)			
Digitalisation	-0.001 (0.018)	0.392*** (0.012)	0.122+ (0.071)	-0.005 (0.018)	1.498*** (0.022)	0.134 (0.111)
Process_innova- tion	0.031+ (0.016)	0.475*** (0.085)	0.247*** (0.071)	0.031+ (0.016)	0.133*** (0.014)	0.113 (0.108)
Product_innova- tion	0.018 (0.017)	0.389*** (0.117)	-0.100 (0.075)	0.025 (0.016)	0.148*** (0.028)	-0.103 (0.128)
Export	0.009 (0.017)	0.701*** (0.095)	0.114+ (0.068)	0.021 (0.017)	0.622*** (0.026)	0.058 (0.109)
LL (model)	-1243.85			-825		
Akaike Inf. Cri- terion	2937.7			2389.9		
Bayesian Inf. Criterion	4303			4648.2		
Degrees of free- dom	225			370		
var(D_in_ Employment)	0.141*** (0.012)	0.014*** (0.003)	0.063*** (0.013)	0.128*** (.01)	0.0001*** (0.00003)	0.033*** (0.011)
Year dummies	YES			YES		
Industry 2-dig dummies	YES			YES		
LEP dummies	YES			YES		
Year x industry	NO			YES		

Table 4 (continued)

	Model 7			Model 8		
	ethnic_min absence (a)	ethnic_min minority (b)	ethnic_min majority (c)	ethnic_min absence (a)	ethnic_min minority (b)	ethnic_min majority (c)
Year x LEP	NO			YES		
No of observations	3,190			3,306		

Model 7 controls for year, sector, and local enterprise (LEP) dummies, whereas Model 8 includes additional controls based on two-digit sectoral dummies interacted with years, and dummies for local enterprise partnership (LEP) areas interacted with years across all three equations to control for time-variant unobserved heterogeneity at a sector and LEP levels (in line with Models 1–2, Table 3). The introduction of additional controls in Model 8 comes at the expense of losing two control variables (Number_of_partners (in logs) and Female_majority_ownership) as Model 8 does not converge otherwise

Sole proprietorship dummy was dropped automatically for *Employment_growth_ethnic minority presence* equation in models, due to perfect multicollinearity

Standard errors in parentheses; ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

balanced, with scope for interaction among ethnic majority and minorities entrepreneurs, and closely reflecting the ethnic composition of the country. It may therefore benefit most from the heterogeneous human and social capital resources.

The differences in employment growth rates between these three categories are further confirmed by post-estimation tests comparing pairwise the constants in the sub-models representing categories (a), (b), and (c) after GSEM joint estimation in Model 7. As reported in Table 5, we reject the null hypothesis that the corresponding coefficients for category (b) are the same, first compared with category (a), White British only case (test 1), and second with category (c), the case of ethnic minorities forming a majority of the team (test 2). Thus, we find significantly higher growth rates in employment for mixed ethnicity SME teams (b) as contrasted with White British only (a) or ethnic minorities majority teams (c). At the same time, the differences between categories (a) and (c) are insignificant (test 3). Thus, Hypothesis 1 gets support from the difference between categories (a) and (b), but not from the difference between categories (a) and (c) (Table 5).

Next, the results of test 4 suggest that the digitalisation benefits are amplified for the diverse teams, compared with socially homogenous White British only. The difference between the category (b) and the category (c) dominated by ethnic minority groups is also significant (test 5), but the results are less strong compared to Test 4. These two tests imply that we

obtain clear support for Hypothesis 2. Finally, the differences between categories (a) and (c) are only borderline significant at $p < 0.10$ (test 6).

Tests 7–8 (Table 5) reveal further that process innovation has the strongest impact on employment in a mix representing ethnic minorities combined with White majority (b). Here, the difference with all British white category (a) is significant at $p < 0.001$ (test 7). The difference between (a) and (c) is significant at $p < 0.01$. Thus, both tests support Hypothesis 3. The results of product innovation are similar, but this time, only the difference between mixed category (b) and all-White category (a) is significant (test 10). Test 12, between categories (a) and (c), is marginally insignificant at $p = 0.12$.

Finally, for internationalisation/exports, the mix ethnic case (b) has again the strongest impact on employment among the three cases. For this category, the test relevant for Hypothesis 4 ((a) versus (c)) is highly significant (Table 5). The post-estimation test for exporting (based on the results reported in Model 7) again come with chi-squared value below 0.001 probability threshold when comparing the effects of strategic engagement of mixed-ethnicity case (b) vs. White British only case (a) (test 13). The comparison between white British and ethnic minorities majority case (test 15) is marginally insignificant ($p = 0.13$).

All this provides us with qualification on the evidence for support for H1–H4. The evidence for better performance of teams with ethnic minority presence

Table 5 Post-estimation tests corresponding to Model 7 in Table 4—testing the difference in the impact of variables of interest across three groups

No	Pairwise tests	Chi2 statistic
1	Testing the difference in <i>employment growth</i> (constant term) between SMEs with no ethnic minority presence in management teams (a) vs. SMEs with ethnic minorities presence < 50% (b) – H1	chi2(1)=8.64 Prob > chi2=0.0033
2	Testing the difference in <i>employment growth</i> (constant term) between SMEs with ethnic minority presence in management teams < 50% (b) vs. SMEs with ethnic minorities ≥ 50% (c)	chi2(1)=7.72 Prob > chi2=0.0055
3	Testing the difference in <i>employment growth</i> (constant term) between SMEs with no ethnic minority presence in management teams (a) vs. SMEs with ethnic minorities presence ≥ 50% (c) – H1	chi2(1)=0.27 Prob > chi2=0.60
4	Testing the difference in impact of <i>digitalisation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minority presence < 50% (b) – H2	chi2(1)=11.90 Prob > chi2=0.001
5	Testing the difference in impact of <i>digitalisation</i> on employment growth between SMEs with ethnic minority presence < 50% (b) vs. SMEs with ethnic minorities ≥ 50% (c)	chi2(1)=4.15 Prob > chi2=0.0416
6	Testing the difference in impact of <i>digitalisation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minorities presence ≥ 50% (c) – H2	chi2(1)=2.77 Prob > chi2=0.096
7	Testing the difference in impact of <i>process innovation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minority presence < 50% (b) – H3	chi2(1)=26.01 Prob > chi2=0.0000
8	Testing the difference in impact of <i>process innovation</i> on employment growth between SMEs with ethnic minority presence < 50% (b) vs. SMEs with ethnic minorities ≥ 50% (c)	chi2(1)=4.22 Prob > chi2=0.04
9	Testing the difference in impact of <i>process innovation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minorities presence ≥ 50% (c) – H3	chi2(1)=8.85 Prob > chi2=0.0029
10	Testing the difference in impact of <i>product innovation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minority presence < 50% (b) – H3	chi2(1)=9.86 Prob > chi2=0.0017
11	Testing the difference in impact of <i>product innovation</i> on employment growth between SMEs with ethnic minority presence < 50% (b) vs. SMEs with ethnic minorities presence ≥ 50% (c)	chi2(1)=12.42 Prob > chi2=0.0004
12	Testing the difference in impact of <i>product innovation</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minorities presence ≥ 50% (c) – H3	chi2(1)=2.39 Prob > chi2=0.12
13	Testing the difference in impact of <i>exporting</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minority presence < 50% (b) – H4	chi2(1)=51.18 Prob > chi2=0.0000
14	Testing the difference in impact of <i>exporting</i> on employment growth between SMEs with ethnic minority presence < 50% (b) vs. SMEs with ethnic minorities presence ≥ 50% (c)	chi2(1)=25.09 Prob > chi2=0.0000
15	Testing the difference in impact of <i>exporting</i> on employment growth between SMEs with no ethnic minority presence (a) vs. SMEs with ethnic minorities presence ≥ 50% (c) – H4	chi2(1)=2.24 Prob > chi2=0.1349

compared with all British white tends to be strongest for the most mixed cases (category (b)), across the hypotheses.

Turning now to the effect of control variables, we observe that a higher total number of partners plays an important role in explaining employment growth rates in the first two cases, but not in the ethnic minorities team-majority case. Interestingly, we also find that the effect of businesses dominated by females on employment growth rates changes across cases, with the effect being positive in mixed-ethnicity case (b) yet reversing its sign in ethnic-minorities dominated case (c) (Model 7). These findings indicate that the interactions between diverse team members may be more efficient for firms with dominant female leadership, associated in turn

with organisational culture which is more conducive to smoothing potential conflicts and achieving organisational objectives via a greater cooperation between diverse team members (Aniemeka et al., 2013; Hofstede, 1998). Finally, consistently across all models, we find a lagged level of turnover to have a positive effect on employment growth, and initial level of employment to be negatively associated with growth, which is in line with the literature (Parker, 2018).

A final comment is required about the timeframe of this analysis. The period 2018–2020 that is available within the ONS dataset includes a period of strong exogenous shocks to the business system due to COVID and Brexit implementation, both occurring during this timeframe. Notably, while Brexit did not

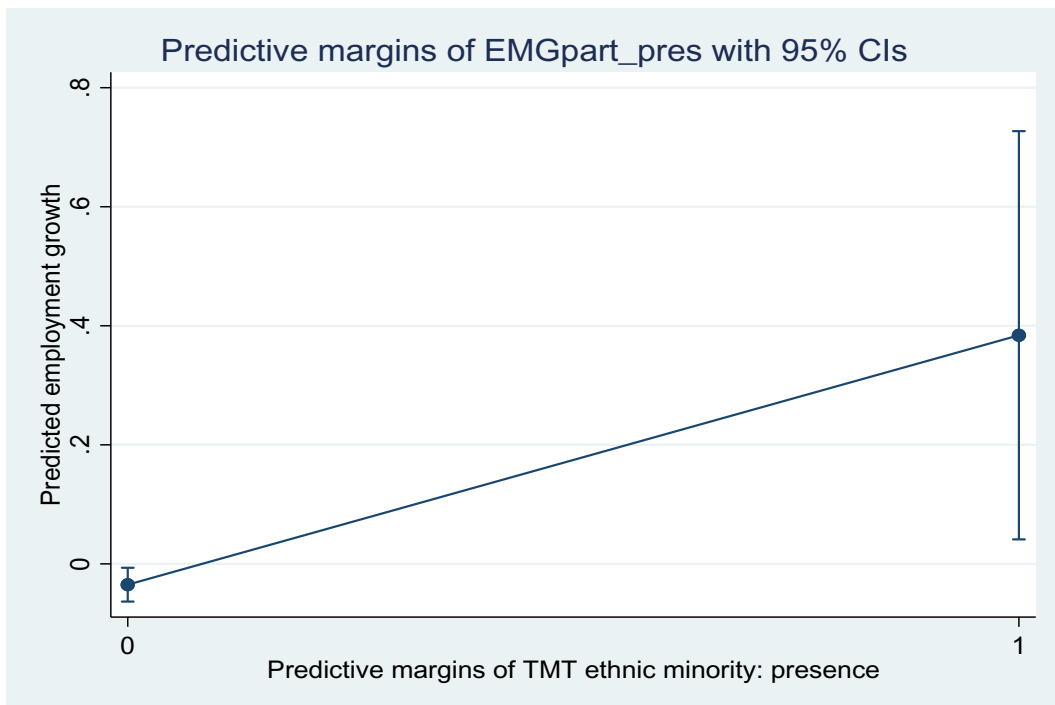
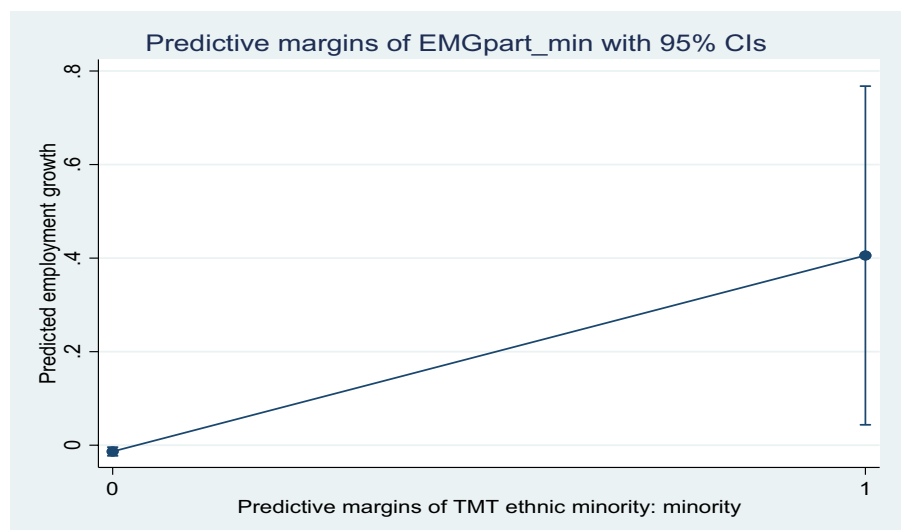


Fig. 1 Marginal effects of ethnic minority: presence. Note: the calculations are based on Model 1 (Table 3)

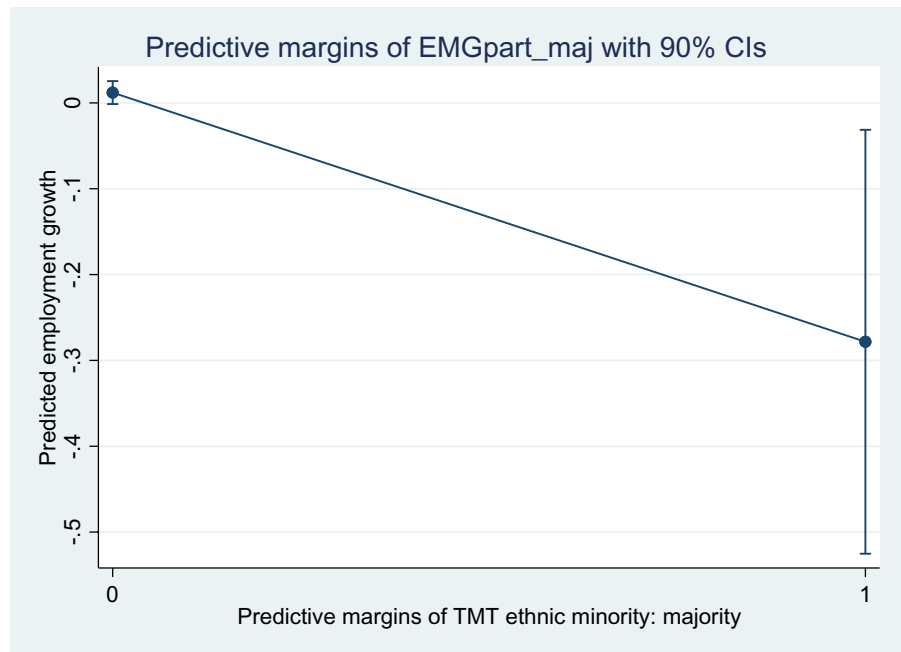
Fig. 2 Marginal effects of ethnic minority: minority. Note: the calculations are based on Model 1 (Table 3)



reduce the migration inflow from the previous period, it altered the geographical origins. The fact that our results stand despite of combining the pre-COVID

and COVID period and parallel to Brexit implementation indicates the more general and enduring nature of our findings.

Fig. 3 Marginal effects of ethnic minority: majority. Note: the calculations are based on Model 1 (Table 3)



5 Discussion and conclusions

We argue that ethnically diverse SME business teams may combine internal social integration with wider linkages to external social capital, producing employment growth. This is supported by our econometric evidence, and we interpret the effect as coming from a varied pool of knowledge that the diverse business team has at its disposal. In the theoretical framework that we adopt in this study, such knowledge resources originate not only from human capital (skills and capabilities) but also from valuable social capital; we see its crucial contribution to firm performance in two ways.

It comes first through the social capital built internally by the ethnically diverse business team, as its members share interest to work effectively together and succeed and, second, through the social capital brought in by the diverse business team members' connections to their ethnic communities, drawing upon social support and diverse opportunities, key to business growth (Mickiewicz et al., 2019; Parrilli, 2012; Parrilli et al., 2019; Saxenian, 2012). We posit that the additive effects of social capital are present under the conditions of cultural diversity alongside direct human capital effects (Prenzel et al., 2024). Social capital generated within SME business teams

enhances the impact of cultural and knowledge differences and facilitates exchange and creation of knowledge within the common space. This underscores the importance of a collective knowledge mechanism at play. Furthermore, we posit that attitudes of openness and tolerance induced by the experience of diversity within business teams may also facilitate obtaining benefits from diverse sources of external social capital. We show the positive effect on employment growth found when a mixed ethnic business team is in place (solution b) vis-à-vis more homogeneous business teams formed either by ethnic majority members only (group a) or dominated by ethnic minorities members (group c), where the latter two combinations lead either to excess homogeneity or excess fragmentation of the business team.

Second, this study analyses the engagement of the business team in few eminently strategic activities that have become critical to promote the competitiveness of firms in the last few decades. In particular, we have aimed to understand how the managers' strategic engagement in digital activities, innovation, and internationalisation impact on firm's growth varies across different types of ethnic composition of SME business teams. We were expecting ethnically mixed business teams to outperform ventures with more

homogenous teams, via amplifying the impact of these critical strategic choices.

We apply the knowledge-based approach linking it with the social capital theory in the context of a business team ethnic diversity to form our framework. Earlier literature reported ambiguous results on the effects of ethnic diversity on performance (Lau & Murnighan, 1988; Hillebrand et al., 2020). By focusing closely on the social capital mechanism related to the ethnic composition of SME business teams, we contribute to clarifying some of these ambiguities, arguing that SME, thanks to the compactness of their business team, are more likely to realise benefits from team's ethnic heterogeneity, compared with large firms.

In our study, we distinguish between businesses with or without ethnic minority presence and then further follow the empirical distribution of our UK sample to distinguish between (a) businesses with no ethnic minority members being present in the business teams, (b) those where ethnic minority members are below 50% of the business team, and (c) ethnic minority members who are in majority among owners and managers. Our evidence brings support to our argument that businesses with minority presence of ethnic minorities among their business team members are more likely to build knowledge resources and bring in more benefits of internal and external social capital than homogeneous groups of entrepreneurs with no ethnic minority presence, or too heterogeneous with majoritarian ethnic minority.

This finding aligns with the results from Prenzel et al. (2024), who emphasise the significance of cultural diversity in driving innovation in firms and startups, as well as with Polyviou et al. (2020), who highlight the importance of internal social capital in enhancing SME performance. Overall, we argue that business teams that combine the benefits that come from the thicker interactions and collaborations between different ethnic groups within the team with benefits of diverse links to external social capital employ resources more effectively. These can be utilised both directly to successfully generate employment growth and to amplify the effects of digitalisation, exporting, and innovation strategies on such growth. To elaborate further on this, we posit that ethnic minorities and the ethnic majority have both access to external social capital with social and economic benefits (e.g. financial support, socialisation

spaces, information leads) that help them maintain an active role in both their community and business. Simultaneously, when they interact and cooperate closely within the same SME business team, they build social capital internally (Coleman, 1988). Moreover, attitudes of openness and tolerance built by experience of internal diversity are also conducive to utilising external linkages to diverse communities more effectively.

Extending our analysis, the micro effects of diversity within business teams may also accumulate and enhance the economic and social capacities of heterogeneous local communities (Parrilli, 2012; Parrilli et al., 2019; Putnam, 2000), thus representing impact of social capital leading from micro (business) to meso/macro (community) level, which deserves further investigation. That links with the literature that emphasises the positive local externalities of ethnic groups meeting in the workplace and learning how to cooperate (Klinenberg, 2018a, b). We would expect that SMEs may be an important place where that social learning can happen. Likewise, it would be important to explore the detail: different types of external social support and networks and knowledge pools. While we postulate the mechanisms that link ethnic composition of business firms with employment growth outcomes, these propositions need to be investigated directly, possibly with the use of qualitative methods as for example by Polyviou et al. (2020).

Applying Coleman's (1988, 1994) argument to SME business teams, we observe that close interdependence, or in his terminology the condition of 'closure', makes likely that the strong micro-level social capital emerges. Furthermore, as argued by Pettigrew (1998), close and repeated contacts among different communities' members enhance attitudes of openness, akin to Putnam's (2000) conceptualisation of bridging social capital. In turn, this factor plays an important role in adaptability and versatility and facilitates wider range of external linkages and therefore is likely to amplify the effects of digitalisation, exporting, and, in particular, innovation. We speculate that these micro effects can be transferred to meso/macro social level, supporting business development of local communities. It has been observed that cross-ethnic contacts in the workplace are conducive to building local (meso level) social capital (Efendic et al., 2015; Klinenberg, 2018a, b; Putnam, 2000), and we argue that SME business teams represent platforms where

these cross-ethnic linkages may become particularly robust, even more than in large companies. In the longer term, this is where we may observe positive externalities from micro to meso/local level, supporting not only the micro growth of SMEs and the effectiveness of their business strategies, but also the wider development processes in the local community.

While we believe that by highlighting these aspects, we make a contribution to the SME growth literature, there are some limitations to our work. It would be desirable to understand more about specific micro-level mechanism that operate within the firms, for which we would need a more detailed survey data, to be able to measure ethnic sources of knowledge and resources, and the emerging attitudes of openness and tolerance directly (Dennissen et al., 2019; Prenzel et al., 2024). As always, longer panel data would enable to construct models for which our claims on causality would become stronger. Finally, it would also be interesting to examine whether our findings are applicable in the contexts outside the UK, thus exploring the generalization of these results across different countries.

Data Availability The data used to produce this work is sourced from the Office for National Statistics (ONS), UK, and is not publicly accessible.

Declarations

Ethics approval This research did not involve any human participants or animals.

Informed consent Not applicable.

Conflict of interest The authors declare no competing interests.

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