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Tackling regional skill shortages: From single employer strategies to local partnerships

This research examines regional skill problems and the strategies implemented to reduce skill shortages by a set of employers (n=16). The data collected in 2019 in a northern region in Portugal indicate considerable and persistent shortages of engineering and IT graduates and non-graduates for operational jobs. The employers implement anticipative strategies interacting with the education system, and the city council has developed a multi-stakeholder partnership. However, the most widespread strategy is remedial and consists of employer-provided training. Employers believe that the partnership has been a fruitful way of expanding economic activities, but further efforts are required to alleviate skill shortages.

Keywords: skill shortages; higher education; vocational education and training; multi-stakeholder partnership

Introduction

The timely availability of the skills mix required to implement business strategies has a major impact on firms' performance. This assumption is not only applicable to countries, but also to regions and local communities. From the 1990s, the qualifications and skills necessary for regional development acquired increasing importance in the political agenda (OECD 2016). A strand of the literature attempts to explain the collaboration and commitment made by firms with local government to develop a VET system (Persson and Hermelin 2020). Other studies acknowledge the role of higher education (HE) as a driver of economic development of weaker regions (Pugh 2017). However, complementarities between HE and vocational education and training (VET) in the preparation of the workforce at the regional level are less explored in the literature. Our research contributes to this debate and attempts to answer the following questions: Is HE expansion and consequently the supply of graduates to the labour

market the solution to skill problems? Or alternatively, is it a necessary but insufficient condition? What role can local and regional partnerships play in providing specific answers to firms' skill problems? And what are the firms' perceptions of these regional partnerships?

The literature indicates that the underlying rationale of HE expansion is indeed to supply high-level skills to the economy and resolve immediate skill problems while anticipating future skill needs (COM 2017). However, a significant body of literature shows that employers still encounter a range of skill problems (e.g. Cappelli 2015; Suleman and Laranjeiro 2018). Recent literature indicates that policy makers are concerned about the status of VET and are discussing coordination mechanisms aimed at making it a valuable source of skilled workforce (Arribas and Papadakis 2019). This stream of the literature recognises that both the nature and drivers of skill shortages as well as production regimes vary across regions and, therefore, solutions to skill problems must be adapted to the specific contexts in which they occur (Sharma, Oczkowski, and Hicks 2017; Persson and Hermelin 2020). This encourages researchers to study skill problems and solutions, including regional partnerships, using the regional level as the unit of analysis (e.g. Froy, Giguère, and Hofer 2012; Sevinc et al. 2020). Additionally, mechanisms and conditions are explored to ascertain how to implement decentralised VET systems (Persson and Hermelin 2020). Nevertheless, employers' reactions to skill problems and their evaluation of political initiatives targeting these problems continue to be scarcely explored at the regional level.

We examine the skill problems faced by employers and the strategies adopted to cope with them in a northern region in Portugal (V.N. Famalicão). The Portuguese education and training system is known to be highly centralised, leaving little room to accommodate regional needs (OECD 2015, 2020). Previous research on the Portuguese

labour market has shown that in spite of huge investments in HE, employers continue to face skill shortages and deficits that entail high training costs for them (Suleman and Laranjeiro 2018). We aim to provide a regional analysis of these issues, hitherto missing, that provides policy makers with relevant information to support the education and training systems' ability to adapt to local needs.

A multi-stakeholder partnership was implemented in V.N. Famalicão in an attempt to resolve skill shortages and deficits at the local level. The partnership, called *Made In¹*, involves different local stakeholders in order to promote education and training, entrepreneurship and innovation in the region. However, the employers' perception of the initiative has not yet been explored. Indeed, to the best of our knowledge, no study has collected insights on partnerships from stakeholders at either the national or local level. Our study thus seeks to i) identify skill shortages reported by employers at the local level; ii) examine their solutions to address this issue; and iii) explore the local partnership's role in tackling regional skill problems. Ultimately, we strive to raise policy makers' awareness on the regional specificities of skill problems and the combination of solutions being implemented by local actors to address them.

The empirical analysis is based on original qualitative data gathered in 2019 from two sources within this region: interviews with a set of employers (n=16) and focus groups with employers, schools and local policymakers. This qualitative material was examined through content analysis which allowed us to classify the skill problems and solutions adopted by the sampled employers.

The rest of the paper is organised as follows. The next section provides an overview of the literature on skill shortages from a regional perspective, together with some notes on the skill problems of the Portuguese labour market and a description of the *Made In* programme. Section 3 is devoted to the methodology. The empirical

evidence is presented and discussed in the Section 4. Finally, Section 5 concludes and sets out policy implications.

Skill shortages and solutions at the regional level

It is well-documented in the literature that human capital is a key ingredient of local economic growth (Plummer and Taylor 2001) and empirical research has shown skills boost local growth, notably in metropolitan areas (Glaeser et. al 2004). It is argued that a qualified workforce is a necessary condition to reduce disparity among regions and increase competitiveness (OECD 2016, Froy, Giguère, and Hofer 2012); to boost some value-added activities (McCann and Ortega-Argilés 2015); and to create challenging jobs at the regional level (Østbye et al. 2018). However, recent literature raises the question of the drivers of growth and discusses the role of skill mismatch in regional labour markets (Sevinc et al. 2020). It suggests that skill shortages thwart regions' performance and prevent them from harnessing their potential.

The literature shows that employers encounter skill shortages, leading to hard-to-fill vacancies (Sharma, Oczkowski, and Hicks 2017; Cappelli 2015). While some of these shortages are widespread, i.e., a large proportion of employers report recruitment problems, others are localised and affect a relatively small number of employers (Green and Owen 2003). Furthermore, whereas some regions may experience severe shortages in particular skills, others enjoy a skill surplus (Cameron 2011). In this context, Sevinc et al. (2020) propose methodological tools to forecast the skill supply and demand in three regions in the UK with a view to reducing the skill mismatch.

A stream of the literature focuses on explanations for skill mismatch at the local level. The imbalance may be an outcome of both the concentration of graduates in large cities (OECD 2016) but also centralised coordination mechanisms (Froy, Giguère, and Hofer 2012; OECD 2016). Not surprisingly, essential changes are being introduced that

will modernise VET and make it more attractive so that it becomes a valuable alternative for young people and their families (Arribas and Papadakis 2019). This process has revealed the inefficiencies of highly centralised coordination mechanisms (Froy, Giguère, and Hofer 2012; OECD 2016) and shows that the supply of skills should be tailored to local and regional labour markets (McCann and Ortega-Argilés 2015), thus rejecting standardised solutions to inherently context-specific skill problems (Sharma, Oczkowski, and Hicks 2017; McCann and Ortega-Argilés 2015). In this context, Persson and Hermelin (2020) provide a discussion on the conditions and mechanisms that support decentralised cooperation in the VET systems and strengthen employers' engagement, notably the role of the municipality, the model of partnership, and the institutional arrangements at national and regional levels.

Finally, some literature focuses on the variety of solutions that have been designed and implemented by different actors to tackle skill shortages at the regional level. It should be noted that researchers discriminate between strategies and solutions (Suleman and Laranjeiro 2018). The former refers to anticipative and remedial strategies, while the latter address the distinction between make and buy, i.e. between train the workforce (make) or recruit ready-to-work candidates from the labour market (buy).

Investment in education and training and the upskilling of the local workforce are the major solutions proposed. Anticipative strategies include interaction with education and training institutions with the aim of anticipating skill needs and embedding the world of work in HE courses (Suleman and Laranjeiro 2018). This type of strategy goes further in the context of the triple helix model (Etzkowitz and Leydesdorff 2000), namely interaction between government, universities and industry to

foster not only university–industry linkages, but also employers’ engagement with HE (Bolden et al. 2009) to improve graduates’ employability.

Anticipative strategies inspire multi-stakeholder partnerships, which are linked especially to sustainable development processes aimed at combining economic and regional development through the social inclusion of vulnerable groups (Hemmati et al. 2002). These partnerships are coordinated groups involving the market, the state and civil society formed to address complex problems (Froy, Giguère, and Hofer 2012), and they illustrate a trend towards the decentralisation of solutions to tackle skill problems and VET policy in different countries (Froy, Giguère, and Hofer 2012; Rogers 2011; Persson and Hermelin 2020). The policy debate now addresses the decentralisation of VET systems to make them attractive to young people (Arribas and Papadakis 2019). However, it is vital to understand how to make regional partnerships more effective and how to strengthen employers’ involvement; however, it encompasses a set of dilemmas (Persson and Hermelin 2020).

The links between HE and VET are particularly important in the case of regions with significant fringes of low-skilled workers (Froy, Giguère, and Hofer 2012) or with a weak economic performance (Pugh 2017). Employers may engage with HE either passively or actively (Hogarth et al. 2007). Passive engagement involves a simple market transaction and HE is basically a recruitment channel, while active engagement includes, for example, work-based learning as well as the design and delivery of courses.

Remedial strategies encompass both recruitment and training policies to overcome skill problems. These strategies pose different challenges for firms. Employers search for trainable candidates endowed with learning abilities so that their training costs are reduced (Thurow 1976). Employers sometimes recruit low-skilled

candidates, especially in the context of a limited supply, and provide extensive workplace-specific training when there are severe and persistent regional skill shortages (Sharma, Oczkowski, and Hicks 2017).

Persson and Hermelin (2020) refer to the uncertainty faced by employers, particularly due to the risk of poaching. In fact, poaching by competitors increases transaction costs and makes employers less willing to provide training (Healy, Mavromaras, and Sloane 2015). Cockrill (2002) describes an extreme situation of employers' unwillingness to train in the Welsh automotive and electronic industries; all employers attempt to buy ready-to-work candidates in the labour market. Nevertheless, they sometimes make considerable investments in training programmes for their workforce, despite the risks and training costs (Suleman and Laranjeiro 2018; Froy, Giguère, and Hofer 2012). Workplace training is still a widespread response to skill shortages, especially at the regional level (Healy, Mavromaras, and Sloane 2012).

The migrant workforce is another potential solution to skill shortages (Froy, Giguère, and Hofer 2012; Healy, Mavromaras, and Sloane 2012). However, specific public policies are required for the successful integration of migrants, and employers must also be engaged to avoid or reduce the underutilisation of their skills (Dietz et al. 2015). Migrant labour involves risks and challenges, notably in terms of skill mismatch (Visintin, Tijdens, and Van Klaveren 2015), and the use of some sectors as the port of entry to the local labour market, therefore leading to high turnover (Treuren, Manoharan, and Vishnu 2019). In sum, addressing skill shortages through migration schemes might be a sub-optimal and short-term solution.

We conclude that employers implement different strategies to meet their skill needs in the context of regional skill shortages. These solutions involve risks and benefits, so employers have to trade the costs off against the benefits. However, there is

no guarantee that the solutions will be successful; skill shortages may persist despite the implementation of suitable strategies. Some successful examples showed that firms involve themselves in VET system, but the major share of funding comes from public investment (Persson and Hermelin (2020)).

National and regional solutions to anticipate the supply of skills in Portugal

The governance of the education system has a highly centralised structure in Portugal (OECD 2015, 2020). Legislation has acknowledged the potentialities of decentralisation (OECD 2020), and it is recognised that the specific skill needs of sub-national economies benefit from the strong involvement of authorities and stakeholders. Nevertheless, the intervention of local and regional stakeholders is often limited to advice or consultations initiated by the central government (OECD 2015, 2020).

In spite of the over-centralisation and under-evaluation of regional skill needs, Portugal has made substantial investments in both HE and vocational training since the 1990s to anticipate skill needs. Furthermore, great efforts have been made in recent years to involve local and regional actors and respond to their particular needs (OECD, 2020).

The upward trend in HE enrolment started in the 1990s and intensified significantly after the adoption of the Bologna model in 2006 (see Portela et al. 2009 for more details). Although Portugal's enrolment rate² was considerably lower than that of the European Union in the 1990s, it rose substantially after the Bologna reform was implemented, drawing closer to the EU average in 2011 i.e. around 60%, and has since remained almost stable.

Nevertheless, there is an excessive concentration of students in the larger regions, notably Lisbon, Oporto, Coimbra, Braga and Aveiro, and more importantly Lisbon has twice as many students as the other large regions³. Faced with this disparity,

in 2018 the Portuguese Government decided to reduce HE vacancies (5%) in large cities (Lisbon and Oporto) in favour of other regions⁴. This shows that policy makers are aware of regional skill needs and are trying to reduce the disparities.

The Portuguese VET has always faced, a set of challenges (see OECD 2020 for details). VET was promoted primarily by the education system and later with the labour market. This initial divide between the Ministries of Education and of Labour continues to affect the system's approaches and priorities. Furthermore, the system is strongly influenced by political priorities for the development of skills policies and is heavily dependent on European funding. Finally, it continues to be less attractive to young people. Notwithstanding, several steps have been taken to ensure high participation rates and quality assurance. These include the definition of the National Qualifications System (NQS) in 2007 to map the relationships and linkages between education, vocational training, and employment; and a systematic approach to skill needs to gather information on the supply of and demand for skills in 2015. Furthermore, local stakeholders are engaged in the definition of skill needs and the implementation of education and training guidelines; the promotion of sub-national economies is one of its key goals.

The *Made In* initiative is an example of multi-stakeholder partnership sponsored by the city council and aimed at connecting different local stakeholders to promote VET, entrepreneurship and innovation in the region of V.N. de Famalicão, a county in the northern region of Portugal. This is a small but dynamic industry-based region, ranking 3rd in the country's export volume and 2nd in gross added value in manufacturing industries⁵. The major sectors of activity include textiles, automobile, metallurgy and agri-food industries. The county also has relatively low unemployment

levels; only 4.1% of people aged 15-64 years were unemployed compared to 5.4% at the national level⁶ in 2018.

Although *Made In* was officially launched in 2014, its origins can be traced back to a 2005 programme aimed at reducing poverty and providing social assistance to more vulnerable populations. However, VET emerged from the outset as a key solution to boost employability and combat poverty. Therefore, employers, public employment services, and VET were integrated in the partnership to provide accurate information on skill needs, to smooth school-to-work transitions and improve employment opportunities. This engagement became even more relevant in the context of the 2008 economic recession. Over time, *Made In* therefore diversified both its scope of action and the stakeholders engaged in it. Now it is involved in the Government Programme Qualifica⁷, which seeks to ensure adult education and training as part of lifelong learning. The primary role of *Made In* is to build bridges between employers, employment services, education, and training system, i.e. to mediate the relationship between local actors and national policy makers.

The annual diagnosis of skill needs warrants special attention as it seeks to obtain accurate answers from VET institutions to overcome skill problems. It also tries to encourage complementarities with employer-provided training, particularly in much-needed sectors (e.g. meat and metalworking industries). Furthermore, the partnership provides consultancy for employer-provided training (e.g. in textiles) to tackle very specific skill needs.

The collaboration with local HE is recent and targets joint R&D projects conducted by firms and advanced education programmes. However, the partnership's rationale remains to connect all local stakeholders of education and training: firms, VET, employment services, HE institutions as well as students and their families. The

goal is to answer the skill needs of the local firms while promoting better employment opportunities for the population.

Data and methodology

This paper draws on the qualitative analysis of empirical data gathered from several complementary sources. It includes face-to-face semi-structured interviews with human resource managers and owners of 16 industry-based firms from the northern region of Portugal (council of V.N. de Famalicão); and 5 focus groups on regional skill problems organised by local policy-makers and with the participation of firms, training organisations and other local actors in the context of the multi-stakeholder partnership. These focus groups represent the partnership's first attempt to engage with local employers not only to learn about skill shortages but also to take the appropriate steps to address them. This illustrates that *Made In* is moving forward in its mission.

We believe that the use of these different data sources will provide a more detailed and nuanced understanding of the questions raised in this paper, namely what are the skill shortages across firms at the local level and how do they vary? How are firms coping with those shortages? How do employers assess the multiple stakeholder partnership's role in reducing skill problems?

The interviews with firm owners and human resource managers are our primary data source and were conducted throughout 2019. Our sample (Table 1) comprises firms with different characteristics in terms of size and years of activity, and that operate in the most representative sectors of the regions' economy (notably textiles, metallurgy and commerce) which, as we have seen, is mostly industry-based. All of the firms have been actively recruiting for both graduate and non-graduate positions in the last 3 years.

[INSERT TABLE 1 HERE]

The focus groups were organised by the city council as part of the *Made In* initiative and took place between March and June 2019. The number of participants varied between 10 and 30 and comprised firms from different sectors, representatives of local VET institutions and local policymakers. The main objectives were to identify firms' skill problems and skill needs, debate the role of VET institutions in the region, and promote more agile and efficient recruitment processes. A member of the research team participated in each meeting and the data gathered were used to complement the information from the interviews with the firms.

Results

Regional skill shortages: graduates and non-graduates

Table 2 summarises the skill problems faced by the employers in our sample and the solutions they use to address them. Hard-to-fill vacancies are the most reported skill problem although there is some mention of ill-prepared graduates, notably due to the lack of soft skills. Almost all employers report hard-to-fill vacancies for both graduate and non-graduate jobs, but the intensity of these difficulties varies across firms and across educational attainment. Employers stress that skill shortages for non-graduate jobs are greater than for graduate jobs: *'It's very difficult to hire people even without the skills that we need'* (F1). Some note that the general lack of technicians is particularly acute at the local level (F2).

[INSERT TABLE 2 HERE]

The graduate level skill shortages are concentrated in high-level technical fields,

notably engineering and IT. However, the skill problem among non-graduates is intense or very severe: *'We have extreme difficulties in hiring [...] for example in technical and maintenance, these are very difficult areas to hire, these profiles are scarce in the market nowadays and they are easily absorbed'* (F8). *'We cannot find school-leavers or experienced professionals from the labour market; this kind of professional is unavailable'* (F13). There is also shortage of less-skilled candidates (F1).

We asked employers about the drivers of skill problems. They underlined: i) the lack of graduates in Engineering and IT; ii) the reduced willingness of young people to take non-graduate technical jobs; iii) the brain drain of young people from the region to other national and international settings; and iv) the demand for very specific skills by some employers.

However, the recruitment of young people for non-graduate technical jobs is the major concern: *'There are many difficulties for non-graduates, at the industrial level [...] there is a shortage of qualified professionals in all areas and we suffer a lot from local and international competition'* (F10). Many employers prefer to hire technicians with practical knowledge than HE graduates. F13 indicates the ratio of one graduate to twenty non-graduates. Furthermore, some of the sampled employers acknowledge that there are few candidates from vocational courses but blame large firms for absorbing them (F11). F11 stresses that large employers benefit from their engagement activities with VET to recruit trainees. Nevertheless, large employers also experience graduate and non-graduate skill shortages despite this engagement and the better employment conditions they provide. Large employers claim they are not immune to regional skill shortages, particularly when these are widespread (F8, F9, F14 and F15). Small and medium firms lack attractiveness, and this leads to hiring difficulties but, more importantly, large employers get in first and recruit the few available candidates.

One employer (F13) underlines the side effects of strong skill specificity. As it is the only firm hiring professionals with a very specific skill (mould making), no VET institution is willing to provide training for so few employers.

The key issue raised by members of the focus group is the imbalance between different sized employers. Whereas participants from SMEs blame large employers for their strategy of headhunting skilled candidates, large employers highlight SMEs' difficulties in complying with the rules set in contractual arrangements. The information summarised in Table 3 furthers our knowledge of the drivers of skill shortages, especially of VET graduates.

[INSERT TABLE 3 HERE]

The education and training system has a threefold effect on supply: young people and their families prefer HE degrees; the VET institutions fail to attract youngsters; and the skills supplied by HE are mismatched with employers' needs. Additionally, international employers are more attractive to the young, who are open-minded and ready to engage in international mobility. Regional skills shortages therefore involve multidimensional drivers, for which there is no single resolution.

In sum, the data show that, in addition to the shortage of IT and engineering graduates, the sampled employers are concerned about hard-to-fill non-graduate vacancies. This structural mismatch affects all industries and employers of all sizes in the region of V.N. de Famalicão.

The solutions to address skill problems: multiple answers from employers and local actors

Table 2 displays the intensity with which employers report skill problems and the variety of strategies to cope with those problems. The findings show that the most important is the firm-level training policy since most employers actively engage in training programmes either in the workplace or with outside providers. Although a major solution for skill shortages, this also attempts to prepare newly hired graduates and non-graduates with specific skills. F1 notes that the rationale behind the training policy is to overcome the lack of candidates by recruiting under-skilled workers and investing in their training, and preparing workers with specific skills: *‘We cannot go to the market to hire people with the know-how to work with our machinery, it is very specific. And so, we provide extensive training from day one and until that person leaves the firm’* (F1).

In addition to the lack of candidates, employers lament that they cannot afford the high wages of ready-to-work candidates, even when they are available: *‘We cannot [hire in the market] because there are no candidates and the employed people earn wages that our firm cannot afford’* (F14).

The employers’ upskilling strategy involves formal and informal training. They often recognise their inability to provide appropriate graduate training and seek the expertise of consultancy companies, specialised training companies, and sometimes HE institutions (F3, F6, F9, F11, F12, F14, and F16). The data show that firms in the sample participate very actively in training activities because they are unable to find ready-to-work candidates with the required skills in the market. Employers must therefore incur non-negligible training costs so that newly hired workers can do specific tasks and use specific tools, and to tackle skill shortages.

Additionally, employers attempt to influence the supply of skills, notably by engaging with education and training institutions (Table 2). Even though all the sampled firms establish some type of relation with education and training institutions, their contact with them is primarily to access the best candidates and develop internship programmes targeting students in the region. Other more active forms of engagement, such as teaching and collaboration in the design of tailored courses, rarely occur in HE (F3), but are slightly more frequent in the case of training schools at non-graduate level (F9; F13; F14). The empirical evidence therefore indicates that employers' active engagement with HE to resolve their skill problems is extremely limited and they use HEIs merely as recruitment channels.

Employers claim that this is due to some on-going barriers, despite some improvements in recent years: *'I believe [the relationship] is getting closer and I feel universities are increasingly open to approaching firms, something which did not happen before'* F5). The major barrier is the lack of awareness of the world of work, which calls for closer ties between HE and workplaces from the early stages of education (F4). This employer *'believes the universities are still distant (...) the students should be put in contact with firms sooner in their university trajectory as happens in programmes abroad where the connections with firms start in the first year of college'*.

On the other hand, collaboration in R&D projects is more common (F2, F6, F7, F8, F10, F12, F14 and F16); this usually involves product development and training as the projects often entail hiring the master and doctorate graduates that participated in their development. In these specific cases, there are closer ties and dedicated HE programmes.

This picture changes somewhat when it comes to VET institutions that prepare students for non-graduate jobs. Employers are again largely involved through internship

programmes, which allow them to attract and screen prospective employees in the context of full employment and strong skill shortages. While almost all employers report this strategy and confirm their willingness to actively participate in the training of new employees, they vary in their level of commitment to the strategy.

A small proportion engage more with VET institutions and refer to teaching activities or designing tailored courses (F9; F13; F14), and they therefore influence the supply of skills. However, there is a widespread perception that VET institutions facilitate engagement more than HE, and are more willing to adapt their curricula to firms' skill needs: *'We collaborate with several training centres (...) if you compare vocational training with higher education, the technical training is much more adapted, closer to the entrepreneurial activity. The teachers have a closer relationship with us and the courses are much more flexible (...) there is that liberty from the pedagogical point of view and professional schools know that if they don't do it, they disappear'* (F9). *'We are very close to [vocational] schools and we give them a lot of support (...) we have our reference school and 50% of our professionals come from them'* (F13).

The employers' perception of the public employment services is quite different from that of the VET institutions. These services rarely interact actively with them to access candidates, and when they do so, it is to participate in public internship programmes. However, employers complain about the bureaucratic burden and process time which are incompatible with their skill needs: *'there is a lot of bureaucracy around these public internships, maybe they have to work like that but for firms it is a significant administrative burden'* (F11). Furthermore, some underline the mismatch between the candidates' occupational profile and the skills required by firms (F4).

In this context, migrant labour emerges as a final resource and the sampled employers do acknowledge that these workers expand the pool of candidates and

consequently help reduce training costs. However, it is a marginal solution and only one employer uses this as a decisive strategy (F15). This is a large and labour-intensive textile firm which has two large contingents of migrant workers from China and Brazil. The Chinese workers have previous experience of the textile industry, and the Brazilians are often graduates but with no previous experience in this industry: *‘We have the workers from China and they already had the know how in textile which we cannot find here (...) we started to need a lot of people in the beginning of the year and we had to open our door because we did not have enough Portuguese to work’* (F15).

Migrant labour is occasionally used by other firms but bureaucratic and culture issues, in addition to skill mismatch, make employers reluctant to adopt this solution (F10, F14). More specifically, Brazilians are often graduates recruited for non-graduate occupations and this involves a high risk of turnover (F14, F16). Employers try to minimise turnover costs by avoiding the hiring of overqualified workers. The participants of focus groups were more enthusiastic about migrant labour. They noted two issues: a small supply of Portuguese workers and huge competition from abroad (e.g. Germany and France) to recruit these few workers.

In the context of the skill shortages described above, *Made In* emerged as a collective solution, organised by the municipality with several different partners in the terrain. It is interesting to note that the initiative was promoted and developed by local stakeholders although the entire northern region of Portugal is affected by skill problems. It indicates that policy makers and stakeholders have recognised the scale of skill problems and have designed solutions that eliminate, or at least mitigate, a long-lasting regional/local labour market problem. But how do employers perceive the role of this partnership?

Employers admit that geographical proximity provides an understanding of local problems and the institutional proximity creates the necessary conditions to mediate these problems (F7, F8). The data indicate that most sampled employers have some interactions with the partnership and, in some cases, develop close or intense ties (Table 2).

One employer notes that ‘...*to be honest, until they arrived I did not exist for them and now I do (...) they have opened up and it has been very good, the firms started to be given attention for the first time (...) there is a proximity and interest and collaboration*’ (F2). This involves information on skill needs, meetings to discuss labour market outcomes, plans to ease the transition of young people, and training strategies. Furthermore, it is accepted that the initiative has encouraged the promotion of some new activities: ‘*Made In has helped us expand in design and confection. It provides information, acts as a mediator (...) we feel that the Town hall is very close to firms and always attentive*’ (F8). ‘*They [the relations with Made In] are very positive, we have established a protocol to support us in an investment we made here (...) and we were even recently contacted with an international request involving the chamber of commerce of Cuba*’ (F11).

However, *Made In*’s response to skill problems and training for non-graduate jobs is still insufficient, despite general agreement about its benefits. For most firms, skill shortages remain a serious and unresolved issue (F11; F13). Some consider that the partnership has specific targets, notably micro-firms, emergent businesses and firms in difficulties (F4). In this context, F4 underlines the successful intervention of *Made In*. Others assume that it attempts to spotlight the region and engage employers in this strategy (F5). *Made In* is undoubtedly relevant in leveraging the local/regional economy (F11). Nevertheless, there is a lack of consensus on its contribution to reducing skill

problems: some, but not for all, believe it is still unsatisfactory. For example, one employer (F7) acknowledges the partnership's role in easing the access to VET institutions, employment services, and job candidates: *'I strongly support the county work... Its interaction with employment services, training institutions... Yes, also makes it easier to search for professionals. It is fantastic to find this level of understanding between entities, which was not usual in our country. This interaction has been extremely relevant to us and has produced very significant fruits in fact'* (F7).

The information gathered in the focus groups further highlights the benefits but also the shortcomings of the *Made In* initiative in addressing local skill shortages (Table 3). It should be noted that the partnership seeks to promote ties between firms and other local stakeholders involved in training and employment (local schools and training centres, employment services and others) and to encourage young people to choose VET training.

The employers participating in the focus groups regret that the partnership has not fulfilled these goals. Young people, but also the unemployed, continue to see VET as less attractive, firms have persistent skills shortages, and employers remain outside the design and delivery of VET courses despite a greater willingness to participate. We conclude from the data that *Made In* has positively impacted innovation and the internationalisation of firms but has not yet had a sufficient impact on the supply of skills; above all, the firms continue to face skill shortages i.e. skill problems remain a serious and unresolved issue.

Discussion and concluding remarks

This research helps answer a key question: Is the expansion of HE and consequently the supply of graduates to the labour market the solution for skill problems? The evidence reported above underlines the need to take the regional level into consideration when

exploring skill problems (Froy, Giguère, and Hofer 2012; Sevinc et al. 2020). The data collected tend to go in the opposite direction of the most cited arguments in favour of HE expansion (COM 2017). In fact, the supply of skilled workforce is found to be the key driver of expansion. Our research shows that employers face hard-to-fill vacancies for IT and engineering graduates, but they blame HE for diverting young people from VET and thus amplifying the skill shortages of technically prepared workers.

Participants of focus group lament the end of the old technical schools that provided them with highly skilled non-graduates until the 1970s. In contrast, Persson and Hermelin (2020) report that young people are attracted to VET and this facilitates the access to very technically-skilled candidates.

We found that the skill problems in V.N. Famalicão are recurrent and widespread across the region as all the sampled employers report recruitment difficulties. This is understood to be a structural skill problem especially linked to the under supply of non-graduates. This evidence highlights the argument that skill is inherently a local issue (Froy, Giguère, and Hofer 2012) and consequently calls for regional/local level responses from stakeholders of education and training (McCann and Ortega-Argilés 2015). Moreover, it suggests that HE expansion might not be the only solution for skill problems, at least in this industry-based region.

The research addresses the solutions adopted to tackle skill problems. Workplace training is a remedial strategy for accessing skills which seems to be influenced by the persistent regional skill shortages at graduate and non-graduate levels. Is this an option? Scholars usually propose a choice between make and buy solutions, as reported by Suleman and Laranjeiro (2018) for the Portuguese labour market. However, employers in the sample have almost a single solution: provide their often under-skilled workforce with extensive training. The fragmentation of privatised vocational training

seems to be the most dangerous outcome of such a solution. This calls for action to foster the different stakeholders' collaboration and engagement. The cases discussed by Persson and Hermelin (2020) suggest that some factors are crucial for an effective partnership, notably the access to suitable skills for all employers, municipality funding and engagement, 'good branding' of VET so that it is attractive to young people, and above all a close relationship between local government and local firms.

The employers' perception of the *Made In* partnership points to two major conclusions. There is a widespread positive perception of the role this local partnership plays in fostering economic performance and helping firms take new directions. The findings illustrate that multi-stakeholder partnerships effectively tackle the region's development (Hemmati et al. 2002) by opening to the international market and encouraging innovation. However, much work remains to be done to reduce skill shortages. It should be noted that local partnerships have only recently been used to tackle skill problems and the critical views indicate that employers are desperate to resolve structural skill problems. However, they must understand that it is still too early to reap the benefits of this engagement; the partnership has a mediating role and is not in itself responsible for resolving the skill problems.

Furthermore, the intervention of local actors is often limited to advice or consultations for VET courses initiated by the central government, i.e. VET system is still highly centralised in Portugal (OECD 2015, 2020). As a result, local actors do not participate in the design of VET policies. The main solution found by the sampled employers is privatised and fragmented workplace training, but it involves risks.

Employers are vulnerable to poaching due to generalised skill shortages (Healy, Mavromaras, and Sloane 2015). The data showed that poaching is not yet a serious issue, but the attractiveness of firms differs substantially. Large firms tend to be

proactive in hiring new school-leavers, taking advantage of their ties with education and training institutions; SMEs are unable to compete with this. Literature has in fact shown that large and wealthy employers dominate the relationship with the education system (Hesketh 2000); small firms have less power to participate since they do not recruit regularly enough to justify these ties (Hogarth et al. 2007). The scale of activity really matters. This is exemplified by F14's very specific skill set and the lack of power to influence the supply of the particular skills required for unusual occupations.

The recruitment of migrant workers was also identified as a solution. However, only one firm uses this as a strategic approach (F16) because of both bureaucratic barriers (Froy, Giguère, and Hofer 2012) and skill mismatch (Visintin, Tijdens, and Van Klaveren 2015). The skill mismatch increases the risk of turnover (Treuren, Manoharan, and Vishnu 2019) and transaction costs therefore reduce employers' willingness to recruit migrants. Furthermore, employers contribute to the underutilisation of migrants' skills since they assign them to jobs requiring lower qualifications (Dietz et al. 2015). Ultimately, it is a marginal solution for the skill problems.

In sum, the solution for skill shortages is multifaceted and represents a serious challenge for all stakeholders at local and national levels. The effectiveness of any solution cannot be taken for granted and employers must often trade the costs of each solution off against the benefits. Therefore, policymakers should ensure governance arrangements in VET that help the formulation and implementation of training policies in line with regional and local skill needs. Efforts are likewise required to raise the status of VET among young people and families and help them when choosing between HE and other valuable alternatives, probably with HE credentials.

Our findings should be examined with caution despite the relevance of the research. This is qualitative research based on a small number of participants and

focusing on industry-based firms. Additional studies are required that compare different sectors, industries, and services, as well as a large sample of employers. Nevertheless, key insights are provided on employers' struggle with the lack of skilled workforce, which undermines the competitiveness and sustainability of a wealthy region.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. <https://www.famalicaomadein.pt/>
2. See UNESCO Institute for Statistics: <http://uis.unesco.org/> for details.
3. <https://www.pordata.pt/Municipios/Alunos+matriculados+no+ensino+superior+total+e+por+n%c3%advel+de+forma%c3%a7%c3%a3o-310>
4. <https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx?v=fe353446-329c-44b3-bcbe-edbc5ad5c7da>
5. <https://www.pordata.pt/Subtema/Municipios/Produ%c3%a7%c3%a3o+e+Com%c3%a9rcio+Internacional-432>
6. <https://www.pordata.pt/Municipios/Desempregados+inscritos+nos+centros+de+emprego+e+d+e+forma%c3%a7%c3%a3o+profissional-220>
7. <https://www.qualifica.gov.pt/#/programaQualifica>

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Table 1. Firms' characteristics

Firm	Year of establishment	Number of workers	Industry
F1	1950	200	Textile for automobiles
F2	2003	30	Polymers
F3	1995	160	Textile
F4	2008	50	Textile
F5	1973	656	Optics
F6	1970	140	Textile
F7	1961	753	Agri-food
F8	1927	1131	Textile
F9	1993	2154	Tyres and metallurgy
F10	1993	63	Metallurgy
F11	1981	67	Metallurgy
F12	2011	38	Textile
F13	1999	72	Metallurgy
F14	1937	1216	Textile
F15	1988	2672	Textile for automobiles
F16	1942	230	Agri-food

Table 2. Firms' skill shortages and strategies used to overcome skill problems

Firms	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Skill shortages/Hard-to fill vacancies																
Graduates	++				++		+++	+	++					+++		++
Non-graduates	++	+++	+++	++		++	+++	+++	++	++	++	++	+++	+++	++	+
Strategies to solve skill problems																
In-company training	+++	+	+++							+	+	+			+++	+++
Engagement with education and training institutions	+	+	+++	+	++	++	++	++	+		+	+	++	++	+	++
Interaction with employment services	+	+	+				++	+++		+	++			+	+	+
Interaction with <i>Made In</i>	+			+	+	+	+	+++	+++	++	+++		+	+	+	++

(+++) very high intensity
 (++) high intensity
 (+) low intensity
 () non-existent

Table 3. Drivers of skill shortages in the supply and demand sides: summary of perceptions of focus groups' participants

Supply side			Demand side		
Individuals & families	VET & employment services	Higher education	Competitors	International markets	Hiring preferences
Unemployed unavailable to engage in VET (1; 5)	Institutions fail to respond to skill needs (1; 3; 5)	Bologna graduates are mismatched with employers' needs (4)	Large firms are more attractive and absorb the little supply (3; 5)	Recruitment of migrants, especially Brazilian (4; 5)	Ageism: employers prefer young people (1; 5)
Young people prefer jobs in services than in industry (1; 2; 3; 4; 5)	Lack of initiatives to make VET more attractive to young people (4; 5)	HE diverts young people from VET (4; 5)	SMEs fail to fulfil employment contract rules (1; 5)	Willingness to internationalise taking advantage of low labour costs (in Africa) (4)	HE graduates due to ability to learn, initiative, methodological abilities (3)
Over-valorisation of HE diplomas, leads sometimes to unemployment or lower wages (3; 4; 5)	Claims that employers should be engaged in VET design and delivery (4)		Engagement with VET is useless; large firms hunt candidates (5)	Brain drain to more advanced economies (Germany) that provide better employment conditions (4; 5)	HE is not a real answer for skill problems (4; 5)
Young people lack motivation to learn (3; 4; 5)	Demands for closer ties between VET and firms; (3; 5)			Better conditions abroad enhance young people's interest in mobility (5)	
	Weak selection of candidates by employment services (1; 5)				