



# Clashing institutional interests in skills between government and industry: An analysis of demand for technical and soft skills of graduates in the UK



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## ABSTRACT

Technological knowledge and skills provide a basis for developing national competitiveness. However, there is an emerging clash of interests in the UK labour market between employers and policy makers. The former requests highly skilled workers who often jealously train in house for their specific operations while the latter aims to reduce unemployment through the expansion of vocational training to lower skilled workers. Universities need to find their strategic position in the knowledge economy characterised by radical technological change and shifting occupational structure by meeting the future skills demand while balancing between the clashing institutional interests. This study analyses 510 job advertisements in the supply chain management area, using a combination of OMDS and HCA techniques. The advertisements are categorised by means of six dimensions according to the skills, duties and job type. This study analyses not only employers' needs in skill types according to job roles but also emerging institutional clashes in the job market and their implications for skills training policy and curriculum development.

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## 1. Introduction

Technological trajectories determine the division of labour and occupational structure within the national economic system as the new technological specialisation expedites the shift in its industrial structure (Antonelli and Fassio, 2014). The increasing globalisation of product and capital markets triggered by technological changes reshapes the distribution of labour, pushing towards upskilling and re-skilling of the workforce (Berman et al., 1994). Governmental agendas for science and technology policy invariably stress both short and long term needs of scientific knowledge and technical skills. Examples include China's focus on the diffusion of the internet and scientific knowledge in the population as by the 12th 5-year-plan for development (National People's Congress, 2011), the EU Innovation Policy (European Commission, 2013) and the SciSIP policy of the USA (National Science Foundation, 2014).

Although fostering technological knowledge does not necessary correspond to the creation of innovation (Archibugi and Pietrobelli, 2003), advanced industrialised countries (AICs) have shifted from capital intensive to knowledge based economies. Given the pressure for specialisation in the tertiary sector, AICs saw an increase in technological

knowledge that pushes up the demand for upskilled labour while pushing down the demand for both capital and unskilled labour, therefore jobs require an increasingly higher level of technological knowledge at all levels (Khayyat and Lee, 2014). As structural change in the labour demand pattern has occurred in AICs, as part of the globalisation process (Cagnin et al., 2013; Haegeman et al., 2013), some speculation has been made about the projection of future skills needs and demand (Gallouj et al., 2014). However, AICs have also experienced ongoing economic and political stagnation since the 2008 economic crisis (Antonelli and Fassio, 2014) accompanied by increasing unemployment. Such conditions of austerity and instability have constrained the government's capacity to invest in technological development and upskilling of labour force. This view is echoed by a recent EU report: "The certain risk of jobs polarisation is still signalled, as new job growth is concentrated in jobs requiring high-level qualifications and those which have, traditionally, required low-level ones. This trend is underpinned by technology replacing people carrying out routine tasks at all qualification levels" (CEDEFOP, 2012, p. 48).

As the private sector calls for more specialised knowledge and higher technical skills, (Jensen et al., 2007), the UK government and higher educational institutions are concerned about the provision of technological knowledge and learning (UK Government, 2014; Walker, 2014). With the increasing unemployment generated by the economic downturn, it is paramount for jobseekers to be as competitive as possible to find a job. This is particularly true in fast moving industries

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where the skill base has to change quickly to adapt to the rapid technological change (Kamprath and Mietzner, 2015). Despite the pressure for the upskilling of the future workforce, paradoxically, the government's urge for vocational training programmes to develop basic skills in the unemployed population (CEDEFOP, 2008, 2012) has pushed universities to expand specialised vocational training for soft skills to enhance employability of graduates (Onar et al., 2013; Sohal, 2013).

However, it is often difficult for universities to identify exactly what kind of skills they have to instill into the future workforce (Laurillard, 2013). Recently, university courses specialising in operations management, supply chain management and logistics have proliferated, because they are at the base of all industries and sectors involving production, manufacturing, wholesaling, or retailing (Dreher and Ryan, 2004; Sohal, 2013). Universities are also introducing more technical modules in their programmes, such as business analytics, quantitative analysis and statistical modelling. Since the job market became increasingly demanding (Salomonson et al., 2012; Wilton, 2011), universities need to answer several important questions in designing relevant courses to prospective employers: what kind of skills are employers looking for?; what level of salaries are employers prepared to pay?; what are the implications of technological change for curriculum development?; and what is the policy direction of responding to UK's future skills demand?

Intensifying globalisation and the pressure for industrial competition (Brown et al., 2001; Eltantawy et al., 2009) have shifted AICs' policy focus from capital and infrastructure investment to high-tech research and development. Consequently, governments in AICs need to meet the increasing demand for multi-skilled and specialised workers (Hayward and James, 2004) while tackling the challenge of continuous workforce up-skilling (Crouch et al., 1999; Wolf, 2002). In industrial markets in general – where firms strive to generate innovation for commercial exploitation – and in the area of supply chain and logistics management in particular – by which firms seek efficiency in procurement, production and distribution processes – the recent changes in the institutional and technological environments have created a conflicting demands between technical/hard and human/soft skills as well as the professional roles and job associated with them (Fuller and Unwin, 2003; Öberg, 2013).

Although the governments of AICs recognise the strategic importance of technological knowledge creation and diffusion, changing economic conditions under the global crisis have altered the perceived need for skills (Giunipero et al., 2005; Wu et al., 2013), sometimes reflecting a gap or mismatch between what is demanded by employers and what policy makers push forward to tackle unemployment (Wachner et al., 2009) in the areas of vocational training, further and higher education and workforce skilling. For instance, 'government policy in England over the last 25 years has been successful in increasing the supply of qualifications but this has led to over qualification of the workforce at intermediate skills levels' (Hayward and James, 2004, p. 7). Likewise, higher education policy in the EU and the Bologna process – in an attempt to harmonise institutional differences among member countries – (Bernon and Mena, 2013) have created agendas closely tied to industrial requirements, which made higher education itself 'a commodity that needs to be sold in a global marketplace' (Hayward and James, 2004, p. 9).

Knowledge-based economies need to develop skills for enhancing technological innovation through an educational system which promotes not only scientific and technological knowledge but also critical thinking and problem solving (Khayyat and Lee, 2014). While the European Community forecasts an increase in the demand for technical skills as part of the natural future skills demand of knowledge-based economies (CEDEFOP, 2012), the UK offers a depressing prospect for technological knowledge and skills development, with only 21.8% of the country's population showing numeracy competency at Level 2 or above (BIS, 2012, p. 3). In such a scenario, political, social and economic pressures create clashes of institutional interests due to unbalanced

power distribution among different actors (Crouch et al., 1999). While economic policies are shaped by the increasing power of the industry, the satisfaction of social (e.g., inclusion) and macro-economic (e.g., unemployment) needs often conflict with industrial requirements for skills (Handel, 2003), hampering the long-term technological development.

Universities need to find their strategic position in the knowledge economy characterised by radical technological change and shifting occupational structure by responding to the challenges of meeting the future skills demand while balancing between the clashing institutional interests. This study analyses 510 job advertisements in the supply chain management area, using a combination of OMDS and HCA techniques. By examining the content of the advertisements, we found that they can be categorised by means of six dimensions according to the skills, duties and job type. This paper addresses this problem by proposing a framework based on institutional clashes that contribute to innovation theory with an institutional dimension affecting the generation of those skills that generate innovation. This framework also offers a tool for policy makers to reflect current educational setup and focus on the potential relaxation of the tension created in the national innovation system by this institutional clash. This study analyses not only employers' needs in skill types according to job roles but also emerging institutional clashes in the job market and their implications for skills training policy and curriculum development.

## 2. Analytical framework: salient challenges in upskilling and the employability dilemma

Under the pressure of global competition requiring governments to prioritise technological development and prompting employers to demand skills that are complementary to firms' strategic needs, AICs' economic policies aim at (i) increasing employment in the wider adult population; and at (ii) increasing the skills amongst the youth through education policies (Crouch et al., 1999). Unfortunately, and quite counter-intuitively, effective employment policies does not depend just on education policies (Crouch et al., 1999, pp. vii–ix) because: (i) highly technical skills can be applied to niches of a high-tech field, (ii) individual firms have diverse needs for skills that often do not match the public demand for mass-provision of skills. Furthermore, (iii) firms already engage in a variety of vocational training. If governments carry on deferring skills provision and training to the private sector, policy making will be limited to providing skills to the unemployed. Policy makers concentrating only on residual care of the unemployed cannot push the innovation and regional development agendas effectively.

Weak collaboration between governments and firms also undermine the provision of advanced skills policies aligned with the industry's needs. Collaboration between private and public sector for the development of higher skills in prospective employees should be stronger and better coordinated. Nevertheless, as many firms tend to protect their business practices and processes, it hampers the provision of public training, limiting it to basic or low skills (Crouch et al., 1999, pp. 72–73). Paradoxically 'the pace of change is now so fast partly because firms increasingly want skills defined in terms of their individual company culture or technology, when they are reluctant to allow even representative business associations to be involved in their affairs' (Crouch et al., 1999, p. viii).

## 3. Technical skills, upskilling and the risk of educational failure

In recent years the UK job market saw an increase of supply of Business and Management graduates (Lutz and Birou, 2013; Wilton, 2011). Policy makers in the UK promoted higher education (Wilton, 2011) and encouraged 'training the workforce (Edwards and Miller, 1998) to enhance social cohesion by lowering the socio-economic divide in the population (Deer, 2004; Hagan et al., 2011). However, broadening access to higher education also enlarged the availability of 'highly-skilled'

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