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# Open Innovation Practice in the UK-based Food Sector SMEs: Ethnic Minority

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## Abstract

*Innovation and technological modification are the essential sources of productivity growth, international competitiveness and proliferated living standards. In past years, these areas have become the focal points of growing attention due to relentless competition from rapidly emerging knowledge-based economies. In particular, research and policy have begun to focus on small and medium-sized enterprises (SMEs) as a fundamental source and driver of new product developments, innovation and new technologies. The development and implementation of open innovation is considered a potential way to distribute products to the market that have been produced because of the application of innovative techniques. Firms can earn the loyalty of customers through the practical implementation of open innovation strategies. Consequently, reputation can be built up incrementally. This paper aims to provide some insights into how open innovation could enhance the competitiveness of SMEs in the food industry, particularly within the UK ethnic minority.*

**Key words:** Open innovation, food sector SMEs, potential challenges, technological usage, competitiveness

## 1.0 Introduction

The concept of open innovation has become a widespread phenomenon in both the US and Europe over the last decade (Chesbrough, 2003). Many SMEs depend on their ability to be innovative to gain competitive advantage (Parida et al., 2012). However, the usual success rate of innovative efforts tends to be lower than expectations. This is mainly due to the inherent complexity of innovation as well as to the high levels of risk alignment and uncertainty inherent to the innovation process (Griffiths-Hemans & Grover, 2006; Koufteros et al., 2005). In addition, innovative development is usually challenging for SMEs due to the 'liability of smallness'. This is because SMEs have limited financial resources (Grando & Belvedere, 2006). Furthermore, a lack of multidisciplinary competence and less structured approaches to innovation often restrict the ability of SMEs to innovate and attain competitiveness (Bianchi et al., 2010).

Recent studies regarding innovation technology management have proposed several potential benefits of the open innovation processes. Some have described a shift from traditional or closed innovation models with a primary focus on internal research and development (R&D) towards an open innovation approach (Chesbrough, 2003; Parida et al., 2012). Engaging open innovation actively uses and exploits the inward and outward transfer of knowledge and technologies (Chesbrough et al., 2003).

The current study focuses on the potential benefits of open innovation in the UK-based food SMEs. This area is new in the sense that it has not yet been the specific object of any published study.

Many scholars would agree that open innovation could be useful for both SMEs and large firms (Chesbrough, 2003; Chesbrough et al., 2006; Lichtenthaler, 2008a). However, earlier research concentrates on multinational organisations.

SMEs are different from large firms in terms of how they exploit open innovation activities for specific outcomes. SMEs face some inherent limitations, such as a lack of financial resources for R&D, unstructured innovative processes and underdeveloped internal capabilities

(Chesbrough & Crowther, 2006; Lichtenthaler, 2008a; Madrid-Guijarro et al., 2009). Conversely, SMEs are usually less bureaucratic, more willing to take risks, and in positions of specialised knowledge. They tend to react quicker to change management activities, which enables them to be better than larger organisations at adopting open innovation (Christensen et al., 2005; Stam & Elfring, 2008). In addition, the most recent studies of open innovation (OI) in food and beverages merely focus on observations of the effects of open innovation on innovation. They disregard the drivers that encourage food and beverage firms to engage in open innovation activities. One possible solution to this would be to apply a two-step Heckman selection model. This would involve observing the motivation of the firm to adopt open innovation and examining the extent to which it is receptive to openness. It would then require an analysis of the effect of open innovation on organisational performance.

A Schumpeterian (1934) hypothesis postulates that prominent firms are more innovative because of economics of scale in research and development, and better technological knowledge and capabilities. Therefore, it can be said that the bigger the firm, the higher the probability of success. On the other hand, Stock et al. (2002) argued that SMEs are more innovative in comparison to large firms because of their entrepreneurial attitude, flexibility, dynamism and less bureaucratic management.

To date, innovation is increasingly acknowledged as one of the key factors behind organisational success. Innovation has also become of particular interest to the food industry, even though the extensive literature on this industry means it is usually considered as a sector defined by low research intensity (Christensen et al., 1996; Martinez & Briz, 2000). On the other hand, the food industry is considered one of the biggest manufacturing sectors within the European Union (EU) in terms of its contribution to both economic results and employment (Avermaete et al., 2002; Menrad, 2004; Traill & Meulenberg, 2002). A benchmark report on competitiveness by the European Confederation of the food and drink industry (CIAA) illustrates that innovative potential should be enhanced if firms are willing to remain competitive in the market in future (CIAA, 2008). The type of innovation introduced recently in the food industry has embraced scientific and technical approaches to food processing. Some studies illustrate that new food products are more successful than incremental innovations such as line extensions and me-too products that generate only short-term gains and low margin benefits (ECR Europe, 1999; Knox et al., 2001).

### 1.2 Theoretical Context

Understanding how to manage innovation successfully is significant at a time when change becomes a requisite survival strategy. At the same time, it is a risk-taking strategy because it can lead to organisational failure (Olleross, 1986; Tellis & Golder, 1996). Many innovation management studies are normative in nature and focus on how to innovate successfully. Given the fact that innovation management has changed over the last few decades, it seems that many companies have unique notions of what counts as success or best practice (Rothwell, 1994). However, historical divisions may have been accurate in past years, and modern innovation practices advocate that organisations do not automatically decide what best practices are, as prescribed by the dominant model of their time (Ortt & Van der Duin, 2008). In fact, innovation managers often decide the innovation process based on a context.

The term 'Innovation' is increasingly used in all fields of science. Innovation is increasingly recognised as making a significant contribution to organisational success, performance, and survival. Innovations vary significantly in their nature. Damanpour et al. (2009) advocate that the urgency of an organisation's innovation management process is often determined by pressure from the external environment. These factors include competition, deregulation, isomorphism, scarce resources and customer demand (Baregheh et al., 2012; O'Keffee et al.,

2016). Damanpour (1996) defines innovation as a multifaceted construct that encompasses the generation, development, and implementation of an idea or behaviour which is new to the adopting organisation. Companies rarely innovate on their own, but instead tend to cooperate with agents (Bayona-Saez et al., 2017). Innovation processes are systematic and interactive. Research on the interactive process has increased following Chesbrough's (2003) publication. There has been substantial colloquium apropos of the categorisation of innovation. Open innovation is a recognised example of innovation management in the business world. In addition, open innovation is one of the more recent innovation strategies in business management research. Chesbrough (2003) coined the term 'Open Innovation' to describe a shift in the innovation paradigm from closed or in-house R&D of new products to an open innovation model which is associated with internal and external ideas, knowledge and technologies to create and commercialise new products and services. Open innovation is described as 'the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand markets for the external use of innovation' (Chesbrough, 2003). Open innovation encompasses the most important changes to innovation activities, which can be characterised as more distributed, multidisciplinary, trans-border, cross-institutional and inter-temporal than those that were salient in the 20th century, which were confined to one conceptual framework (Bianchi et al., 2011; Chiaroni et al., 2011; Dalhandera & Gann, 2010; Huizingh, 2011). This framework postulates that innovation is significantly achievable beyond R&D activities. Rather, innovation can be viewed as a consequence of the smart and targeted combined use and application of knowledge and competences with special emphasis on the willingness to integrate third party 'knowledge and abilities into one organisation's activities' (Vanhaverbeke & Cloudt, 2014).

In a broad sense, the main understanding of open innovation implies that innovations result from sharing competences between different players along and beyond the value chain, with implications for external relationships (Chesbrough, 2003; Chesbrough et al., 2006). It has long been assumed that open innovation was the preserve of larger organisations. A redefined open innovation definition is 'open innovation is a distributed innovation process based on purposively managed knowledge flows across organisational boundaries, using both pecuniary and non-pecuniary mechanisms in line with the organisation's business model'. This flow of knowledge may involve external knowledge sources through internal process, knowledge outflows from core organisations leveraging internal knowledge through external commercialisation processes and coupling external knowledge sources and commercialisation activities (Chesbrough, 2003a, 2006b; Gassmann & Enkel, 2004; Dahlander & Gann, 2010; West & Bogers, 2014).

Early research on open innovation mainly focused on the adoption of open innovation approaches and practices in large high-tech industries such as IBM (Chesbrough, 2003), Xerox, Addidas (Piller & Walcher, 2006) and Proctor & Gamble (Dodgson et al., 2006). These organisations managed innovation and new product development as internal processes, and profoundly depended on their own knowledge, R&D capacity and technology to develop new products in their own laboratories which represented significant strategic assets (Wynarczyk, 2013). The 'closed innovation paradigm' labelled by Chesbrough (2003) provided a considerable entry barrier for potential competitors, particularly small and medium-sized firms which typically retain competitive advantage and lead time in the marketplace (Teece, 1986). Subsequently, research advocates that open innovation strategies are also being practised in small and medium-sized firms (Bianchi et al., 2011; Lee et al., 2010; Van de Vrande et al., 2009; Wynarczyk, 2013). However, empirical studies on open innovation practices in small and medium-sized enterprises remain relatively scarce (Wynarczyk et al., 2013).

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Innovation and technological modification are the essential sources of productivity growth, international competitiveness and proliferated living standards. In past years, these areas have become the focal points of growing attention due to relentless competition from rapidly emerging knowledge-based economies (Department for Business, Innovation and Skills, 2011; Talwar & Hancock, 2010). In particular, research and policy have begun to focus on SMEs as a fundamental source and driver of new product developments, innovation and new technologies (Wynarczyk & Piperopoulos, 2013). According to the latest report from the European Commission (2015/16), just under 23 million SMEs generated €3.9 trillion in value added and employed around 90 million people. Thus, innovative SMEs play a significant role in national and regional economic development and international competitiveness.

However, studies have demonstrated that only a small population of SMEs are responsible for most of the positive effects regarding innovation, new product development, R&D, exporting, creating employability and wealth creation (Nesta, 2009; Wynarczyk & Thwaites, 2000). Amongst such innovative firms, only a small number of SMEs have the desire, capacity and opportunity to successfully pursue growth, expansion and diversification beyond their local marketplace. In the current knowledge-based environment, fledging SMEs in particular are inhibited by both internal and external structural barriers such as smallness, management capabilities, skilled workers, financial stability and access to external knowledge. A report published by NESTA (2009) shows that only 6 per cent of SMEs with high growth rates created half of the new jobs in existing businesses between 2002 and 2008, and innovation has been involved in the competitiveness and growth of these businesses. The rationale for OI adaptation in practice by SMEs varies amongst large and multinational firms. This is due to the size of the firms as well as the extent of economic and financial gains and inter-firm relationships. On the other hand, investment in research and development is considered the primary driver of innovation and increased productivity. The contribution of R&D to company growth and economic development has been recognised by many scholars in the past. In particular, Cohen and Levinthal (1990) regarded investment in internal R&D as a significant asset in evaluating and utilising external knowledge and technology.

However, it has been argued that British businesses are not research-intensive in comparison with other advanced countries all over the world (Wynarczyk, 2013). The previous year's records evidence that investment in R&D and patenting has been relatively low. R&D, research and employment are mostly concentrated in a limited range of industrial sectors in UK businesses. A small proportion of large firms are located in more affluent areas of the country such as in the south-east. It has been estimated that over 80 per cent of total R&D expenditure is conducted by the one hundred most active firms (Wynarczyk, 2013). Conversely, independently owned SMEs account for only 3 per cent of total R&D expenditure in UK business. These are assumed to be amongst the most focal causes of the productivity gap that exists between the UK and other comparable economies (Sainsbury, 2007; R&D Scoreboard, 2009).

The potential issues of SMEs can be identified and solved. The main challenge for business support intermediaries and policymakers in the recent economic and financial crisis is to recognise and support those factors which are capable of 'making a difference' to promote firms with innovation and growth potential. It has been claimed that open innovation significantly helps SMEs to eradicate many boundaries such as location, technology and both internal financial and human resources. OI practice offers a different strategy through which growth-oriented SMEs can access inter-firm resources at low cost. It stands in the way of developing new products and entering into new markets (Chesbrough, 2003).

### 1.3 Managerial Implications and Conclusion

The food industry is considered one of the most significant industrial sectors of the global economy. It ranks highly in terms of employment, turnover, and value-added investment. The food processing industry was traditionally characterised as the most reluctant industry to embrace new technologies (Brasili & Fanfani, 2006).

From a historical perspective, the food processing industry has long been associated with low technology. In fact, R&D activities in the food industry are considered of secondary importance compared to other industrial sectors, for instance the chemical industry and the Information and Communication Technology (ICT) industry (Samadi, 2014).

Even though multinational food companies invest heavily in R&D, most large and multinational companies do not have the means to invest in modern laboratories and intensive research. Yet it is noticeable that the food industry has changed dramatically over the last decade. For instance, competition has been amplified in both national and international markets, and the industry has encountered a string of threats to food processing. Furthermore, a range of cultural and environmental issues have arisen in the food debate (Avermaete & Viaene, 2002).

Avermaete and Viaene (2002) suggest that the food industry should undertake innovative processes to improve product quality, expand consumer confidence and encourage modernisation. This will also lead to technological development, and stability in response to these changes. Higher standards of living combine with greater potential spending on commodities with higher added value, together with better packaging. Samadi (2014) suggests that these standards can be achieved through innovative management and technological development. Innovation is considered one of the primary determinants of success and long-term survival for companies in the food industry.

Mansfield (1995) stated that academic research has contributed to business innovation activities in various industries. Innovation is achieved through R&D, which is carried out by universities and research centres who apply efficient methods to production and supply in the food industry (Samadi, 2014). There is much pressure on universities to raise research funding to actively contribute to industrial innovation (Muscio et al., 2010).

Industrial policy depends a great deal on technology transfer as a tool for the development of knowledge-intensive economies and increased competitiveness (Bozeman, 2000). Despite having excellent innovation potential, the food industry is generally based on 'redundant technologies' (Muscio et al., 2010). SMEs are actively involved in the food industry and studies have indicated that SMEs adopt OI in practice due to the need for external resources that could help to develop and commercialise new products (Samadi, 2014). However, the industrial structure is generally composed of SMEs with low R&D capacity.

### References:

- Avermaete, T., Viaene, J., & Morgan, E. J. (2002). Impact of knowledge on innovation in small food firms. *Mededelingen Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen*, 67(4), 47–50.
- Bayona-Saez, C., Cruz-Cazares, C., Garcia-Marco, T., & Garcia, M. S. (2017). Open innovation in the food and beverage industry. *Management Decision*, 55(3), 526–546.
- Baregheh, A., Rowley, J., Sambrook, S., & Davies, D. (2012). Food sector SMEs and innovation types. *British Food Journal*, 114(11), 1640–1653. Available online at <http://dx.doi.org/10.1108/00070701211273126> (Accessed March 21, 2017)

## Open Innovation Practice in the UK-based Food Sector SMEs: Ethnic Minority

- Bianchi, M, Campodall'Orto, S, Frattini, F, & Vercesi, P. (2010). Enabling open innovation in small-and-medium-sized enterprises: How to find alternative applications for your technologies. *R&D Management*, 40(4), 414–431.
- Bozeman, B. (2000). Technology transfer and public policy: a review of research and theory. *Research Policy*, 29, 627–655.
- Brasili, C. & Fanfani, R. (2006). *Agri-food districts: theory and evidence, The New European Rurality: Strategies for small firms*. Cornwall, UK: MPG Books.
- Chesbrough, H. (2003). *Open innovation*. Boston: Harvard Business School Press.
- Chesbrough, H. (2006). Open innovation: a new paradigm for understanding industrial innovation. In: H. Chesbrough, W. Vanhaverbeke, & J. West (Eds.), *Open innovation: Researching a new paradigm*. Oxford: Oxford University Press, pp. 1–12.
- Chesbrough, H. & Crowther, A. K. (2006). Beyond high tech: Early adopters of open innovation in other industries. *R&D Management*, 36(3), 229–236.
- Chiaroni, D., Chiesa, V., & Frattini, F. (2011). The open innovation journey: How firms dynamically implement the emerging innovation management paradigm. *Technovation*, 31, 34–43.
- Christensen, C. M., Cook, S., & Hall, T. (2005). Marketing malpractice: the cause and the cure. *Harvard Business Review*, 83, 74–83.
- CIAA (2008). *Review of key competitiveness indicators for the European food industry*. Brussels: CIAA.
- Cohen, W. M. & Levinthal, D. A. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 35, 128–152.
- Dahlander, L. & Gann, D. M. (2010). How open is innovation? *Research Policy*, 39(6), 699–709.
- Damanpour, F., Walker, R. M., & Avellaneda, C. N. (2009). Combinative effects of innovation types and organizational performance: a longitudinal study of service organizations. *Journal of Management Studies*, 46(4), 650–675.
- Dodgson, M., Gann, D., & Salter, A. (2006). The role of technology in the shift towards open innovation: the case of Procter & Gamble. *R&D Management*, 36(3), 333–346.
- ECR Europe (1999). *Efficient product introductions: the development of value-creating relationships*. Cambridge: Ernst & Young and AC Nielsen.
- Gassmann, O. & Enkel, E. (2004). Towards a theory of open innovation: three core process archetypes. *R&D Management Conference*, Portugal.
- Grando, A. & Belvedere, V. (2006). District's manufacturing performances: a comparison among large, small-to-medium-sized and district enterprises. *International Journal of Production Economics*, 104(1), 85–99.
- Griffiths-Hemans, J. & Grover, R. (2006). Setting the stage for creative new products: Investigating the idea fruition process. *Journal of the Academy of Marketing Science*, 34(1), 27–39.
- Huizingh, E. K. R. E. (2011). Open innovation: State of the art and future perspectives. *Technovation*.
- Knox, B., Parr, H., & Bunting, B. (2001). Model of 'best practice' for the food industry. *Proceedings of the British Nutrition Society*, 60(169a).



## Open Innovation Practice in the UK-based Food Sector SMEs: Ethnic Minority

- Koufteros, X., Vonderembse, M., & Jayaram, J. (2005). Internal and external integration for product development: the contingency, effects of uncertainty, equivocality, and platform strategy. *Decision Science*, 36(1), 97–133.
- Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs – an intermediated network model. *Research Policy*, 39, (290-300). Available online: <http://doi.org/10.1016/j.respol.2009.12.009> (Accessed April 11, 2018)
- Lichtenthaler, U. (2008a). Open innovation in practice: an analysis of strategic approaches to technology transactions. *IEEE Transactions on Engineering Management*, 55(1), 148–157.
- Madrid-Guijarro, A., Garcia, D., & Van Auken, H. (2009). Barriers to innovation among Spanish manufacturing SMEs. *Journal of Small Business Management*, 47(4), 465–488.
- Martinez, M., & Briz, J. (2000). Innovation in the Spanish food & drink industry. *The International Food and Agribusiness Management Review*, 3(2), 155–176.
- Mazzola, E., Bruccoleri, M., & Perrone, G. (2012). The effect of inbound, outbound and coupled innovation on performance. *International Journal of Innovation Management*, 16(6), 27. Available online at: 10.1142/S1363919612400087 (Accessed October 23, 2018)
- Menral, K. (2004). Innovations in the food industry in Germany. *Research Policy*, 33(6-7), 845–878.
- NESTA (2009). The vital 6 per cent: how high-growth innovative businesses generate prosperity and jobs. available at: [www.nesta.org.uk/library/documents/Vital-six-percent-Nov2010-v3.pdf](http://www.nesta.org.uk/library/documents/Vital-six-percent-Nov2010-v3.pdf).
- Olleros, F. (1986). Emerging industries and the burnout of pioneers. *The Journal of Product Innovation Management*, 3(1), 5–18.
- Ortt, J. R. & van der Duin, P. A. (2008). The evolution of innovation management towards contextual innovation. *European Journal of Innovation Management*, 11(4), 522–538.
- Parida, V., Westerberg, M., & Frishammar, J. (2012). Inbound open innovation activities in high-tech SMEs: the impact on innovation performance. *Journal of Small Business Management*, 50(2), 283–309.
- Piller, F. T. & Walcher, D. (2006). Toolkits for idea competitions: a novel method to integrate users in new product development. *R&D Management*, 36(3), 307–318.
- R&D scoreboard (2009). *Department for Business Innovation & Skills*. The National Archives.
- Samadi, S. (2014). Open innovation business model in the food industry: Exploring the link with academia and SMEs. *Journal of Economics, Business and Management*, 2(3).
- Schumpeter, J. (1934). *The theory of economic development*. Cambridge, England: Cambridge University Press.
- Stam, W. & Elfring, T. (2008). Entrepreneurial orientation and new venture performance: the moderating role of intra- and extra-industry social capital. *Academy of Management Journal*, 51(1), 97–111.
- Stock, G. N., Greis, N. P., & Fisher, W. A. (2002). Firm size and dynamic technological innovation. *Technovation*, 22, 537–549.
- Talwar, R. & Hancock, T. (2010). The shape of jobs to come. *Possible New Careers Emerging from Advances in Science and Technology*, 2010–2030.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Tellis, G. J. & Golder, P. (1996). First to market, first to fail? Real causes of enduring market leadership. *Sloan Management Review*, 37(2), 65–75.

## Open Innovation Practice in the UK-based Food Sector SMEs: Ethnic Minority

Traill, W. B. & Meulenber, M. (2002). Innovation in the food industry. *Agribusiness*, 18(1), 1–21.

Van de Vrande, V., De Jong, J.P.J., Vanhaverbeke, W., & De Rochemont, M. (2009). Open innovation in SMEs: Trends, motives and management challenges. *Technovation*, 29, 423–437.

Vanhaverbeke, W. & Cloudt, M. (2014). Theories of the firm and open innovation. *New Frontiers in Open Innovation*, 256–278.

West, J. & Bogers, M. 2014. Leveraging external sources of innovation: a review of research on open innovation. *Journal of Product Innovation Management*, 31(4): 814–831.

Wynarczyk, P. & Thwaites, A.T. (2000). The role of medium-sized innovative manufacturing firms in regional economic performance: some evidence from the Northeast region of England”, in Daring, W., Oakey, R. and Kipling, M. (Eds), *New Technology Based Firms at the Turn of the Century*, Elsevier Science, Amsterdam.

Wynarczyk, P. (2013). Open innovation in SMEs: a dynamic approach to modern entrepreneurship in the twenty-first characteristics, network openness and network. *Information International Journal of Technology Management*, 62(2), 223–250.