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Exploring survival rates of companies in the UK video-games industry: An empirical study

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ABSTRACT

The study presented in this paper investigates companies operating in the UK video-game industry with regard to their levels of survivability. Using a unique dataset of companies founded between 2009 and 2014, and combining elements and theories from the fields of Organisational Ecology and Industrial Organisation, the authors develop a set of hierarchical logistic regressions to explore and examine the effects of a range of variables such as industry concentration, market size and density on companies' survival rates. The analysis addresses locational dimension of the video-game industry is considered by introducing an extra regionally-related variable into the models, associated with the number of video-game university programmes locally available. In addition, companies are investigated with regard to their organisational type in order to identify potential effects associated with their intrinsic organisational structures.

Findings from the analysis confirm that UK video-game companies operate in an increasingly globalised market, limiting the effects related to any operation conducted at a local level. For instance, a higher supply of specialised graduates within spatial proximity does not contribute significantly to increase the chances of survivability of video-game companies, although different locations seem to provide better conditions and higher life expectancy, mainly due to positive network effects occurring at a local level. Results seem also to suggest that investing in managerial resources increases businesses' survival rates, corroborating evidence about the significant role entrepreneurs have for companies operating within innovative and technologically intensive industries.

1. Introduction

The number of studies addressing and investigating creative industries, thus industries whose main products and services are based on the provision and development of artistic and cultural activities, has increased significantly in the past 20 years. Creative industries are a relatively new concept and tend to be characterised by intensive process and product innovation (Marchand and Hennig-Thurau, 2013). Most of empirical research on creative industry currently focuses on music and audio-visual entertainment, with many studies exploring and examining the structure of these industries and the economic impact creative companies and workforces generate predominantly within communities located in urban areas, and how these function as a driver for innovation (Clifton, 2008; Florida, 2002; Parmentier and Mangematin, 2014). However, the number of studies analysing the video-game industry and its impact on economic systems remains relatively low.

Among creative industries, the video-game industry is probably the one that experienced the highest level of growth since its first development in the early 1970s. The industry has been characterised by numerous emerging and disruptive technologies which have constantly reshaped companies operating within it, completely changing industry's production processes as well as risks and opportunities for companies. This cyclical re-shuffling poses some questions in relation to how video-game companies can survive in such a volatile market, and about the implications for economies and supply chains at a regional level.

Particularly in the UK, the video-game industry registered a significant growth, fuelled by global hits from Grand Theft Auto IV (the fastest

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selling entertainment product of all time), Runescape, Broken Sword and the Fable series. The UK is now one of the top five games developing countries, just behind the US, Japan, Canada, and South Korea. Recent suggest that the amount of business activities related with digital video-games could be worth as much as £1.72 billion to the UK economy with a Gross Value Added (GVA) of £540 million, with an annual growth rate of 22% in the number of active companies between 2011 and 2013 (Mateos-Garcia et al., 2014). The growth of the UK video-games industry has also an economic impact in terms of employment and investments. The industry employs over 10800 highly skilled development staff, the majority of which are employed outside London (TIGA, 2016). Being operating in an R&D intensive industry, two fifths of UK game developers have a dedicated R&D budget and spend on average 20% of turnover on R&D activities.

Despite these impressive figures and the success of the UK video-game industry, however, there is a significant paucity of studies addressing and investigating issues and challenges faced by businesses operating within this industry.

The aim of this paper is to contribute filling this gap by exploring and examining which factors have an impact on the survival rates of companies in the UK video-game industry. By developing their analysis on a unique dataset comprising information from videogames companies between 2009 and 2014, the authors depart from the traditional approaches used in the business management and entrepreneurship fields, and use a mixed approach with elements extracted from Organisational Ecology (OE) and Industrial Organisation (IO) theories to investigate locational dimensions alongside the diverse organisational types of newly founded companies operating in the industry. In doing so, the authors develop a set of hierarchical logistic regressions using variables such as industry concentration; market size and density, exploring companies' survivability and examining the relationship between potential entrepreneurial growth and economic performance in the UK video-game industry.

The paper comprises six sections including this brief introduction. Section 2 discusses the theoretical background and rationale behind the analysis of the industry, introducing the main aspects of OE and IO theories and examining the resource partitioning model as a potential bridge between OE and IO. Section 3 provides an overview of the video-game industry, starting with a brief historical analysis and then focusing on the UK. Section 4 illustrates the data analysis, including the hierarchical logistic models used to investigate companies' survivability in the industry. Section 5 explores the results gathered from the data analysis. Section 6 concludes.

2. Theoretical background

2.1. Measuring companies' survivability and performance

Assessing the levels of survivability of companies in a given industry or market is a challenging task. Several academic studies focused on examining the factors that affect entry rates and post entry performances of new companies (Armington and Acs, 2003; Evans and Leighton, 1989; Santarelli and Vivarelli, 2007). These factors can be categorised into three main groups: environmental or exogenous; related to the companies' location or organisational settings; or related to personal attributes and psychological profiles of companies' owners and managers (Evans and Leighton, 1989; Pennings et al., 2013). Some studies investigating newly founded companies argue that entry rates in a given market are driven by profit expectations associated with a favourable economic and legislative environment (Armington and Acs, 2003; Kirchoff and Armington, 2002; Orr, 1974), along with increased labour density in areas where companies are located (Krugman, 1991). Other studies focus on owners and entrepreneurs, using their psychological profiles and corresponding personalities to predict companies' success and/or failure rates (Steward, 1996). Other studies again focus on post-entry performances, using instruments such as financial performances and benchmarking, and growth rates as main tools to understand companies' survivability (Murphy et al., 1996).

While all these different approaches help to understand how companies can adapt and survive within different situations and contexts, it seems that access to both financial and human capital remains a crucial aspect for newly founded companies (Boone and Van Witteloostuijn, 1996; Krugman, 1991). Many studies investigating the links between companies' survival rates and financial capitals identified a positive relationship between the two (Carroll, 1997; Holtz-Eakin et al., 1993). However, caution is required when interpreting these relationships as cause-effect, as access to funding may not have an immediate impact on new companies' survival rates in any given market (Carroll, 1997; Hannan, 1993). In addition, the ability of companies to attract and retain human capital, such as employees with specific skillsets and education, appears equally important in terms of survival (Preisendorfer and Voss, 1990).

The presence of specialised labour catchments within spatial proximity also appears to have a significant positive impact on companies' post-entry performances (Bates, 1990; Santarelli and Vivarelli, 2007). This positive impact is further enhanced by the ability of companies to match their needs with skillsets supplied locally (Armington and Acs, 2003). Moreover, companies started by entrepreneurs with a broader skillset and diversified expertise tend to survive longer in the industry, particularly when entrepreneurs are supported by specialist employees (Boone and Van Witteloostuijn, 1996; Evans and Leighton, 1990).

Contrary to the extensive empirical literature that revolves around entrepreneurship, companies' performances and entry-rates, the amount of research addressing theoretical frameworks explaining companies' survivability has been limited and sparse. Two main limitations may affect research progress in this field: firstly, causality effects are difficult to identify and disentangle within entrepreneurial processes; and secondly, there is a lack of empirical research examining companies' life expectancy and innovation after they enter a given market.

2.2. Combining Organisational Ecology (OE) and Industrial Organisation (IO)

The main approaches and studies used within the OE field focus on the identification and evaluation of factors resulting in companies' organisational success and failure. According to OE, the chances of survival for a company in a given industry, or its organisational survivability, are determined (or selected) by the corresponding environment (Winter, 1990). Empirical studies are predominant in the OE field and focus on entrepreneurship factors like new organisational formations, mortality process, life cycles of the companies and organisational structure (Carroll, 1997; Hannan, 1993). OE studies examine densities (number of companies in a sector) to investigate foundation and mortality rates as well as the population dynamics and patterns of evolution within the density and markets (Carroll, 1997). Some studies have investigated companies' life cycles using demographic characteristics such as companies' age, size, organisational structure and cultural values (Amburgey and Rao, 1996). While the relationship between companies' age, size and survival rates is not clear, there is a consensus among researchers that younger companies face greater exit risks, these indicated as liability of newness. However, since younger companies tend to be small in size, it is difficult to identify and distinguish between age and size effects - these indicated as liability of smallness – when examining companies' survival rates.

Generally, OE approaches appear to provide not only the context for policy implications, but also a range of comprehensive mapping systems to understand dynamics and networks involving companies operating in a given environment or spatial context (Boone and Van Witteloostuijn, 1995). According to IO, three types of market structures have an impact on a given industry performance: i) a concentrated market, ii) a fragmented market and iii) a dual-market (Boone et al., 2009). The type of market structure is determined by the concentration and