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**How institutions matter in the context of business exit: A country comparison using GEM data
and fsQCA**

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How institutions matter in the context of business exit: A country comparison using GEM data and fsQCA

Abstract

Despite evidence of substantial differences in business exit rates across countries, understanding of the institutional conditions contributing to those differences is still incomplete. Methodological limitations have left considerable gaps in our understanding of business exit, due to the dominance of regression models that capture institutional conditions in isolation, but fall short of identifying complex combinations of conditions. Using Global Entrepreneurship Monitor (GEM) data and a fuzzy-set qualitative comparative analysis (fsQCA) of a sample of 54 case countries, we utilise a configurational approach to examine how different combinations of regulatory, normative and cultural-cognitive institutional conditions lead to variations in business exit rates across countries at different stages of economic development. Further, we identify distinct recipes leading to business exit that are associated with the presence or absence of high business exit rates across countries. The study contributes to institutional theory as well as the business exit literature by discussing which combinations of institutions determine when exit is beneficial and detrimental to the economy, but also which specific combinations apply across sets of countries.

Keywords: Business exit, SMEs, Institutional perspectives, Country comparisons, FsQCA, GEM

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Introduction

Business exit results from business owners discontinuing their business (DeTienne and Wennberg, 2016), removing firms and capabilities from the economy (Fortune and Mitchell, 2012). Substantially different business exit rates exist across countries (Kelley *et al.*, 2016). Despite potential impacts on overall business dynamics and economies (Singh *et al.*, 2015), and suggestions institutional contexts in which businesses operate are relevant for such variations (Aidis *et al.*, 2009), understanding institutional conditions contributing to differences remains incomplete (Stenholm *et al.*, 2013; Urbano *et al.*, 2018), under-researched and under-theorised (DeTienne and Wennberg, 2016).

Systematic exploration of such combinations and business exit rates across countries is important. Business exit is inherently part of overall business dynamics and institutional conditions (see Scott, 1995; Kostova, 1997; Stenholm *et al.*, 2013), drive business exit rates with varying effects on economies. Additionally, traditional regression models capture individual institutional conditions in isolation, rather than identifying complex combinations (Deng *et al.*, 2019), creating a gap in understanding business exit.

Drawing from institutional theory, the purpose of this study is to explore which combinations of presence and absence of regulatory, normative and cultural-cognitive institutional conditions across countries at different stages of economic development lead to presence or absence of relative high business exit. This initial broad analysis, is partially driven by the need to identify conditions (and combinations of conditions) present and absent when there are cases of business exit. Rather than identifying precise causal mechanisms, explanations consequently discussed are based on implied elements derived from results rather than identified causal links being sufficient to explain outcomes in themselves.

Applying fuzzy-set qualitative comparative analysis (fsQCA, Ragin, 2008) to Global Entrepreneurship Monitor (GEM) data, this study details business exit across 54 case countries. FsQCA, a set-theoretic

approach, allows investigation of causal relationships depending on contextual conditions. In a recent systematic review, Kraus, Ribeiro-Soriano and Schüssler (2018, p.33) conclude fsQCA is becoming increasingly popular in entrepreneurship research (also see Muñoz and Dimov, 2015), because it can capture complexity “*through testing theory based conditions and contextual influences rather than focusing on single effects of individual variables*”.

This study makes several contributions. Contributing to institutional theory in an emerging research stream exploring how institutional context shapes entrepreneurial activity across countries (Albiol-Sanchez, 2016; Urbano *et al.*, 2018), it identifies how underlying causal complexities of institutions provides in-depth understanding of relevant regulatory, normative and cultural-cognitive institutional combinations, in business exit contexts. Results illustrate regulatory institutional conditions in the form of entrepreneurial framework conditions having differential effects on business exit rates depending on presence or absence of normative as well as cultural-cognitive conditions and economic development stage of countries. Further, findings highlight institutional conditions interacting differently with each other can still result in the same outcome.

Second, we contribute to business exit literature, identifying distinct recipes leading to business exit associated with presence or absence of high business exit rates across countries. Findings confirm business exit rates across countries differ (Albiol-Sanchez, 2016; Kelley *et al.*, 2016), but also suggest institutional conditions leading to exit determine whether such exit is more or less desirable for the economy in which they occur. This responds to calls for more systematic approaches (see Stenholm *et al.*, 2013) defining and measuring rates and types of entrepreneurial activity across different economies.

The next section defines business exit, then draws on institutional theory to identify how regulatory, normative and cultural-cognitive conditions impact on entrepreneurial activities across countries. Thereafter, a conceptual framework is presented and fsQCA’s theoretical assumptions explained in more depth. We then describe the methodological approach followed by presentation of results. Lastly, findings are discussed, developing relevant implications for theory, practice and further research.

Business exit

Two different forms of exit exist in the literature. Entrepreneurs removing themselves from ongoing businesses is referred to as entrepreneurial exit. An entrepreneur discontinuing the business, stopping trading, is referred to as business exit (DeTienne and Wennberg, 2016). This distinction is crucial as complexities of exit become increasingly evident. Fortune and Mitchell (2012) argue that business exit removes the firm as entity and its capabilities from the economy, whilst entrepreneurial exit preserves these intact. In this study, we use the term business exit consistent with GEM (and its dataset), as discontinuation of the business as an entity (Kelley *et al.*, 2016).

Business exit does not necessarily equate to (financial) failure, the two being separate phenomena (Wennberg *et al.*, 2010). Literature focuses on the importance of a fresh start for entrepreneurs in financial insolvency (e.g., Hallinan, 1986; White, 2001), business exit imperative for society to recoup investments (e.g., Lee *et al.*, 2007; Peng *et al.*, 2010) and entrepreneurs learning from mistakes (e.g., Jenkins *et al.*, 2014). It forms an important part of overall business dynamics, positively impacting on future entrepreneurial activity (Hessels *et al.*, 2011; Albiol-Sanchez, 2016), competitiveness and employment growth (Fritsch and Mueller, 2004), revitalising an economy's business stock (Sutaria and Hicks, 2004).

Coad (2014, p.725) argued, however, that empirical evidence only supports 'survival of high-productivity firms is good - or rather - absence of low productivity firms is not bad'. This suggests exit of lower productivity businesses related to necessity-driven contexts might have different effects compared to exit of higher productivity businesses in opportunity-driven contexts, as entrepreneurs engage differently in entrepreneurial activities depending on context (Busenitz *et al.*, 2000; Stenholm *et al.*, 2013). Recent research calls for more country-level investigations of business exit (Albiol-Sanchez, 2016). Systematic exploration of potential causal configurations, through fsQCA, is important to identify where business exit may be regarded as more or less beneficial for the economy, and which institutional contexts are most relevant in influencing such exit types.

Institutional approach to business exit

Recent evidence has emerged suggesting country-specific institutional contexts might be responsible for differing natures and levels of global entrepreneurial activity (Busenitz *et al.*, 2000; De Clercq *et al.*, 2010; Stenholm *et al.*, 2013; Urbano and Alvarez, 2014; Urbano *et al.*, 2018; Valdez and Richardson, 2013). Sociology-based institutional theory distinguishes between regulative, normative and cultural-cognitive institutional dimensions (Scott, 1995), the specific dimensions adapted for use in entrepreneurial research in studies such as Descotes *et al.* (2011), Valdez and Richardson (2013), Urbano and Alvarez (2014) and Moore *et al.* (2015).

In entrepreneurship contexts, the regulatory dimension of a country's institutional profile consists of entrepreneurial framework conditions such as regulations and government policies (Kelley *et al.*, 2016). The normative dimension refers to the degree a country values entrepreneurial activity and considers entrepreneurship an appropriate career choice. The cultural-cognitive dimension refers to individual's knowledge and self-perceived ability to start or operate a business (Busenitz *et al.*, 2000; De Clercq *et al.*, 2010). These three institutional dimensions, including underlying conditions, are important to developing understanding of entrepreneurship activities across different economies (Stenholm *et al.*, 2013; Urbano and Alvarez, 2014; Urbano *et al.*, 2018; Valdez and Richardson, 2013). Entrepreneurial activities include business entry as well as exit and previous research argues that at country-level the two activities are strongly correlated (Estrin and Prevezer, 2010), also suggesting they are affected by the same institutional conditions.

Whilst impacts of institutional dimensions on entrepreneurial entry rates across countries increasingly gains attention (Urbano and Alvarez, 2014; De Clercq *et al.*, 2010; Stenholm *et al.*, 2013), only two studies examining business exit from cross-country perspectives (Hessels *et al.* 2011; Albiol-Sanchez, 2016) were identified, both using GEM data, from 24 and 41 countries respectively, both focusing on effects of business exit on future entrepreneurial activity. Institutional conditions leading to business exit, however, remain unexplored.

Regulatory institutional conditions of business exit

Regulatory institutional conditions most relevant to this study are reflected in national entrepreneurial framework conditions, described as “*the broad policy interest towards entrepreneurship*” (Levie and Autio, 2008, p.241). They predominantly consist of policies providing suitable institutional and regulatory environments, infrastructure, financial resources and training (Busenitz *et al.*, 2000; De Clercq *et al.*, 2010). Inefficient, unpredictable tax systems restrict growth (Estrin *et al.*, 2006), potentially resulting in higher exit rates. Similarly, insolvency laws create entry and exit barriers (Lee *et al.*, 2007). Entrepreneurial framework conditions vary across countries, affecting entrepreneurial performance (Autio *et al.*, 2015; Acs *et al.*, 2016), but little is known about how country-level regulatory conditions affect business exit itself, particularly in countries at different economic development stages. Analysis is also challenging because the relationship between economic development and entrepreneurial activity follows a U-shaped pattern (Acs *et al.*, 1994; Carree *et al.*, 2002). Entrepreneurial activity drops as self-employment in agriculture declines, in favour of higher waged-non-agricultural employment (Wennekers *et al.*, 2010). Opportunity costs of self-employment also increase as fewer individuals accept risks associated with entrepreneurship (Iyigun and Owen, 1998). This trend reverses in later economic development stages as rates of business ownership increase, driven by service sector growth, increasing requirements for individual autonomy makes entrepreneurship increasingly attractive, and more sophisticated niche markets develop (Wennekers *et al.*, 2010). As business entry rates change as economies develop, so do business exit rates (Estrin and Prevezer, 2010). Additionally, while countries in developing stages are dominated by necessity-driven, low growth, short-term orientated entrepreneurship (Manolova *et al.*, 2008), countries at more advanced economic development stages are increasingly dominated by longer term opportunity-driven entrepreneurship (Acs *et al.*, 2008). The nature of this entrepreneurial activity also affects business performance (Hessels *et al.*, 2008), and consequently business exit rates.

Kelley *et al.* (2016) also identify that as economies develop, becoming more complex, unless regulatory institutional conditions also develop to support new and small business, start-up rates reduce, producing

conditions where exit is more likely. In emerging economies, regulatory institutional contexts are less mature, resulting in ambiguity and firm uncertainty (Marcotte, 2014). Rigid and complex bureaucracy, in the case of India, can discourage entrepreneurial activity (Gupta *et al.*, 2014), whilst innovation-driven economies, in North America, tend to have more developed regulatory institutional conditions compared to factor-driven nations in Africa and South-East Asia (Kelley *et al.*, 2016). This suggests regulatory institutional conditions might exert influence on business exit in combination with country economic development stage.

Normative institutional conditions of business exit

Normative conditions represent societal values and refer to the degree a country values entrepreneurial activity through representation in the media, the status attached to successful entrepreneurs and extent to which entrepreneurship is considered an appropriate career choice (Busenitz *et al.*, 2000; De Clercq *et al.*, 2010). In societies where entrepreneurship is highly valued, more people undertake entrepreneurial activities (Davidsson, 1995). This relationship is complex, however. Spencer and Gomez (2004) argue normative institutions only affect entrepreneurial activity positively in combination with economic development stage. In some emerging economies, entrepreneurship refers to self-employment in manual task labour, a means of subsistence with limited status (Spencer and Gomez, 2004), the word 'entrepreneur' viewed negatively (Gupta *et al.*, 2014). For different reasons, in some post-communist economies, entrepreneurs are often perceived as profiteering (Manolova *et al.*, 2008), entrepreneurial activity not always considered favourably (Danis and Shipilov, 2002).

It is through legitimation and moral approval such normative conditions impact not only on level and type of entrepreneurial activity (Etzioni, 1987; Spencer and Gomez, 2004), but also persistence (Burke *et al.*, 2008). Consequently, exit decisions can be driven by similar normative conditions as entry decisions (Callanan and Zimmerman, 2016). If success after business entry is perceived as achieved too easily, or business exit risk mitigated by taking advantage of favourable regulative institutional conditions, such as bankruptcy laws, entrepreneurial activity (including exit) might be considered less favourably by public opinion (Stenholm *et al.*, 2013). This suggests normative institutional conditions

might exert influence on business exit in combination with country economic development stage and/or regulative institutional conditions.

Cultural-cognitive institutional conditions of business exit

According to Moore *et al.* (2015), cultural-cognitive institutional dimensions relate to both knowledge sets as well as shared understandings possessed by people within a country. Urbano and Alvarez (2014) summarise this as shared social knowledge, through individual understanding, influenced by individual experiences. Valdez and Richardson (2013) highlight these measured as aggregates of individual's driving concepts and beliefs. In the context of entrepreneurship, cultural-cognitive conditions reflect knowledge and skills individuals have to start/operate a business (Busenitz *et al.*, 2000; De Clercq *et al.*, 2010), but also fear of failure entrepreneurs experience (Urbano *et al.*, 2018).

In India, Gupta *et al.* (2014) report individuals' knowledge and self-perceived ability to start/operate a business was high, partly reflecting the country's investment in human capital through entrepreneurship education programmes. In contrast, in post-socialist emerging economies, levels of entrepreneurial knowledge and skills are lower due to decades of restricting private sector entrepreneurship (Manolova *et al.*, 2008; Danis and Shipilov, 2002; Smallbone and Welter, 2006). This suggests cultural-cognitive institutional conditions such as perceived entrepreneurial knowledge and skills reflect a country's economic development stage. However, entrepreneurs who believe in their knowledge are more likely to continue entrepreneurial activity compared to discontinuing it (Burke *et al.*, 2008; Hechavarria *et al.*, 2012).

Entrepreneurial fear of failure is another important cultural cognitive dimension, similar to perceptions of skills and abilities, reflecting regulatory institutional conditions, but also normative institutional conditions. For example, failure can be associated with stigmatisation and devaluation of entrepreneurs (Cardon *et al.*, 2011), affected by broader regulatory institutional conditions. Higher individual fear of failure results in reduced entry rates (Arenius and Minniti, 2005; Vaillant and Lafuente, 2007), and subsequently lower rates of exit, as entrepreneurs are more cautious, risk-averse, persisting in existing activity for longer. The European Commission has developed policy to counteract negative effects of

(business exit) stigmatisation (European Commission Enterprise and Industry Group, 2011), as noted previously, exit and failure not necessarily synonymous. Their distinction, however, might be insufficiently acknowledged in societal discourses, having potentially detrimental effects on entrepreneurial activity. This suggests cultural-cognitive institutional conditions might exert influence on business exit in combination with normative and/or regulatory institutional conditions as well as economic development stage.

Configurational conceptualisation of business exit

Our discussion in previous sections identified potential combinations of different institutional conditions and economic development stages, which may affect business exit. Whilst existing literature suggests where complementary or substitute relationships between conditions are possible, the configurational approach is not fully comparable. Previous research focuses on identifying the effect of individual conditions, whereas the configurational approach (see Ragin, 2008) specifically focuses on identifying where conditions in combination are important, emphasizing the exploratory nature of our work. In addition, the configurational approach is used to explain how order emerges from combinations of conditions rather than being pre-designed (Meyer *et al.*, 1993). This means pre-specified relationships are unsuitable for use with the configurational approach, because they go against the explorative nature of the study. Figure 1 therefore illustrates a broad conceptual framework of business exit, where exit may result from a wide range of combinations of (presence and absence of) a country's economic development stage and institutional conditions.

Insert Figure 1 here

Recently, Deng *et al.* (2019, p.194) argued “there is limited and inconsistent knowledge regarding how different institutional dimensions interact with one another”. Instead, the authors suggest effects of combinations of institutional conditions have been overlooked due to the inability of traditional regression analysis to map relationships between combinations of institutional conditions and entrepreneurial outcomes. A configurational approach, offered by fsQCA, is particularly useful when analysing complex causation, “*a situation in which an outcome may follow from several different*

combinations of causal conditions, that is, from different causal ‘recipes’” (Ragin, 2008, p. 23). As previously stated, however, in this study, following identification of which broad conditions (and combinations thereof) are present and absent when there are cases of business exit, discussion of explanations of results is based on implied elements derived from results as opposed to causal links being sufficient to explain outcomes in themselves.

Compared to regression-type analysis, this makes fsQCA ideal for the purpose of understanding the causal complexity of business exit, given its potential for analysing multiple causal conditions simultaneously and identifying relationships between combinations of economic and institutional conditions and business exit across countries. As Douglas *et al.* (2020) suggests, this provides further insight into entrepreneurial activity, which provides an empirical basis for building new theories.

FsQCA is based on three assumptions. First, fsQCA assumes conjunctural causation, some conditions only having an effect in conjunction with other conditions, but not on their own (Woodside, 2013). This might highlight conditions complementing as well as substituting for each other to explain business exit. Second, fsQCA assumes equifinality, more than one causal combination leading to the same outcome (Fiss *et al.*, 2013). Lastly, fsQCA implies potential for asymmetrical relationships between conditions and outcomes (Fiss *et al.*, 2013), causal configurations for presence of high business exit rates potentially differing from causal configurations for absence of high business exit rates across countries.

Referring to our conceptual framework, Figure 1, broadly highlights the potential for combinations of (presence and absence of) institutional and economic conditions to drive business exit. As argued previously, regulatory institutional conditions might, for example, exert their influence on business exit in combination with a country’s economic development stage. Similarly, normative institutional conditions might exert influence on business exit in combination with a country’s economic development stage and/or its regulative institutional conditions. Alternatively/additionally, cultural-cognitive institutional conditions might exert influence on business exit in combination with normative and/or regulatory institutional conditions as well as a country’s economic development stage. These combinations, however, are not exhaustive, particularly given they have been derived from literature

utilising non-configurational approaches. The combinations do however, highlight that there is likely multiple causal combinations explaining the presence and absence of high business exit rates. Further, because the configurational approach also seeks to generate typologies/taxonomies (Meyer *et al.*, 1993), we also argue that resulting causal combinations can be perceived, at least partly, to reflect different “types” of business exit, both signalling underlying strengths and weaknesses of the businesses themselves and indicating whether they are likely to be beneficial or detrimental to the economy.

In summary, the proposed configurational conceptualisation potentially delivers an important theoretical contribution by identifying economic and institutional conditions contributing to presence and absence of high business exit, which can then be discussed in terms of likely effects on the broader economy.

Methods

Methodological Approach

As a set-theoretic approach, fsQCA allows investigation of causal relationships depending on contextual conditions. Relationships between conditions and outcome are defined in terms of sets rather than variables (Ragin, 2013). Here, business exit is conceptualised as a set of economic and institutional conditions, with regulative, normative and social-cognitive conditions chosen as related institutional sub-sets.

Sample

The Global Entrepreneurship Monitor (GEM) consortium has tracked entrepreneurial activity globally since 1999. Our study uses data from the 2015 GEM dataset (Kelley *et al.*, 2016), including complete data from 54 case countries based on the Adult Population Survey (APS) and the National Expert Survey (NES). The APS consists of a representative sample of randomly selected adults aged 18-64 in each country and covers entrepreneurial activity, individual attributes and social values about entrepreneurship. The NES consists of expert perceptions of the entrepreneurial ecosystem in each country.

The GEM dataset includes classification of participating countries by economic development stage according to the World Economic Forum (WEF). Figure 2 highlights the global geographical representation of the sample considered (shaded countries included in study), including economies at different stages of economic development.

Insert Figure 2 here

The number of case countries included in the research was therefore 54, a number of cases in line with previous research in overlapping areas (e.g. Beynon *et al.*, 2016; Beynon *et al.*, 2018), which also undertook a similarly cross-sectional approach. As in those studies, in utilising a single year (2015) GEM dataset for the study it was assumed that values for the variables used were representative of those in countries considered relative to each other, and the dataset and recipes generated would likely be relatively stable over time, a view broadly supported by Beynon *et al.*'s (2020) study results. Future longitudinal research would, however, be required to determine the validity of this, and this limitation is discussed in the conclusions.

Operationalisation

The outcome in our study is business exit (BE). This is measured as the proportion of the adult population that has shut down, discontinued, or quit the business they owned and managed during the past year, and where the business did not continue its activities. As exit could be driven by lack of profitability, personal or family reasons, other job and business opportunities, difficulties in obtaining finance, an incident and bureaucracy (Kelley *et al.*, 2016), the 2015 GEM dataset includes variables measuring each of these reasons. Following exploratory factor analysis with varimax rotation (Hair *et al.*, 2010), two factors were extracted. All items other than bureaucracy (which is excluded from our analysis) loaded on one factor that explained 56 percent of variance and had a good level of reliability with a Cronbach's alpha of 0.82.

Previous research argues distinction is needed between business exit due to financial failure and business exit due to other reasons (Wennberg *et al.*, 2010). Results from our factor analysis instead

support Coad's (2014) conceptualisation of business exit as non-viable either because of financial distress or other options such as outside job opportunities.

To explain business exit across a wider range of economies, four institutional theory-related conditions were identified. First, national framework conditions represent social, cultural and economic context. GEM uses the World Economic Forum's (WEF) Global Competitiveness Report (WEF, 2015) to classify participating countries into three economic development stages depending on gross domestic product per capita and share of exports comprising primary goods, as well as two intermediate stages (these 5 stages coded for fsQCA according to the process identified in Beynon *et al.*, 2018). The three economic development stages are factor-driven economies, efficiency-driven economies and innovation-driven economies, intermediate stages lying between factor-driven, efficiency-driven, and innovation-driven economies. In factor-driven economies, there is heavy reliance on (unskilled) labour and natural resources. In efficiency-driven economies, industrialisation, economies of scale and capital-intensive large organisations are more dominant. In innovation-driven economies, businesses are more knowledge-intense and the service sector expands (Acs *et al.*, 2008).

The remaining three conditions were identified, from variables within the 2015 GEM dataset (Kelley *et al.*, 2016), using exploratory factor analysis with varimax rotation (Hair *et al.*, 2010). FsQCA, is often indicated for case-oriented research where the mechanisms of complex causation revealed are expected to provide fine-grained explanations. Conversely, whilst the scope of this study is broad and uses factor analysis generated conditions, this is in line with previous studies, including Beynon *et al.* (2016, 2018, 2020) and Bouncken *et al.* (2020). Items analysed loaded onto three factors (with eigenvalues above 1) that described 65.3 percent of the total variance with acceptable results (KMO = 0.74, $p < 0.001$). As will be seen, three items (from the GEM elements of the national ecosystem) were omitted from the factors used in the final analysis, due to issues of cross loading (Ramsey *et al.*, 2008), and in order to create factors including at least two variables. Next, we describe these factors (conditions) and the specific labels used identifying the link between Scott's (1995) more general theory and the specific focus on entrepreneurship:

Regulatory institutional conditions consist of nine (of twelve) GEM elements of the national ecosystem influencing entrepreneurial activity more directly, i.e. entrepreneurial framework conditions, data collected through the NES. Items related to financing for entrepreneurs, government support and policies, taxes and bureaucracy, governmental programmes, basic school entrepreneurial education and training, post school entrepreneurial education and training, Research and Development (R&D) transfer, commercial and professional infrastructure, and internal market burdens or entry regulation. These nine items loaded onto one factor explaining 37.6 percent of the variance and showed high reliability (Cronbach's alpha = 0.91), titled *Regulatory institutions: entrepreneurial framework conditions* in the analysis to identify them as related to entrepreneurship specifically.

Factor analysis, and its strength in identifying underlying constructs, is used to support the validity of this EFC factor being best described under the term regulatory institutional conditions, because the majority of the variables included in this factor can be seen to best fit within this description. For R&D transfer and, particularly, education-related variables, there is debate in the literature as to whether these are closer to being cultural-cognitive (Schillo *et al.*, 2016) institutional in nature, or indeed fall outside these definitions altogether, either as control variables (Urbano and Alvarez, 2014) or additional dimensions (e.g. Schillo *et al.*, 2016 allocate R&D and innovation under a separate "conductive" dimension). In this study, however, whilst acknowledging this debate, for reasons related to results of the factor analysis and also following the perspective of Descotes *et al.* (2011), that the regulatory dimension in relation to SME behaviour includes government created programmes that assist firms to acquire resources, including knowledge and training (which can therefore include R&D and education activities), these activities are included within regulatory institutional conditions.

Normative institutional conditions describe how entrepreneurship is regarded in a country, its societal value. It is measured with four items (overlapping with the three item measure in Valdez and Richardson, 2013), including the degree to which successful entrepreneurs receive high status, business start-up is considered a good opportunity, is considered a desirable career choice, and successful entrepreneurs receive media attention. These four items loaded onto one factor explaining 16.3 percent

of the variance and showed good reliability (Cronbach's alpha = 0.71), entitled *Normative institutions: societal value of entrepreneurship* in the analysis.

Cultural-cognitive institutional conditions describes perceived entrepreneurial attributes that impact whether individuals consider starting a business. This condition was measured using two items – the (reverse coded to reflect the negative relation which would have been apparent if not done so) extent to which fear of failure prevents them from setting up a business and the extent to which individuals believe they have the capabilities to start a business (consistent with Valdez and Richardson, 2013). The factor explained 11.4 per cent of the variance, with a Cronbach's alpha of 0.65, considered satisfactory given the small number of items and sample size, and consistent with other studies use of Cronbach Alpha's in the 0.65-0.7 range (e.g. Kearney *et al.*, 2018; Froese *et al.*, 2019). In the analysis, this was entitled *Cultural-cognitive institutions: perceptions of entrepreneurial attributes*.

Method of analysis

Fuzzy-set Qualitative Comparative Analysis (fsQCA) was applied to identify recipes explaining business exit across different economies (countries). To describe countries in set membership terms, the data first needs to be calibrated into grades of membership values on continuous intervals between 0 and 1 (Byrne and Ragin, 2009; Ragin, 2008). The calibration here relies on the direct method that requires the specification of full non-membership in a set (lower-threshold), full membership (upper-threshold) and a crossover point of maximum ambiguity regarding membership (Ragin, 2008), and subsequently assigns membership values to countries (from their condition or outcome values) based on the threshold values identified. Adopting Andrews *et al.*'s (2015; 2019) and Beynon *et al.*'s (2016) approach, the study identifies three threshold qualitative anchors (employed on the continuous conditions and outcome), where the upper threshold can be interpreted as “high” and the lower threshold for each set can be interpreted as “absence of high”.

This qualitative anchor evaluation process draws on identification of the 5th percentile (lower-threshold - x^L in Figure A1), 95th percentile (upper-threshold - x^T) and 50th percentile (crossover point - x^C) values by building on a probability-density function (pdf) graph for each condition or outcome (see

Appendix A Figure A1 for graphical details). The methods of analysis were consistent with previous work in fsQCA (e.g. Andrews *et al.*, 2015; 2019; Beynon *et al.*, 2016; Beynon *et al.*, 2020). Following the work of Douglas *et al.* (2020), in determining cut-off thresholds, the researchers first looked for theoretical rationales, then empirical justifications and only finally the sample data's frequency distribution. The positions of the qualitative anchors across the respective domains was then also reviewed by the authors (the overall GEM index for EFC (Kelley *et al.*, 2016) and the 2018 GEDI index (Acs *et al.*, 2018) considered in these appropriate checks) and deemed appropriate (country labels above the points at the top of the constructed pdf graphs (see Figure A3 for example) were employed to offer country level impact of choice of threshold qualitative anchors - along with alternate fsQCA analyses undertaken based on marginal changes to individual crossover point values also part of this review process - see Andrews *et al.*, 2019, for example of this type of marginal analysis). Using established membership functions (Figure A1 in Appendix A), fuzzy sets allows defining qualitative states while assessing differing levels of membership between full membership and full non-membership (Fiss, 2007; Ragin, 1998; 2008). This builds a more comprehensive picture of effects of combinations of conditions with an outcome (Fiss, 2007).

Using set membership values form of the data, a necessity analysis of individual conditions was first undertaken (Ragin, 2008; Greckhamer *et al.*, 2018), against business exit (BE and ~BE), see Table 1. It shows no conditions exist with consistency value above the regularly employed threshold value of 0.90 (see Greckhamer, 2011; Greckhamer *et al.*, 2018). No single condition is a necessity in terms of business exit (BE and ~BE), though for Economic Development Stage towards ~BE there is a consistency value of 0.894 (below the employed 0.9 threshold – see Vis and Dul (2018) for further consideration of this in the future – a related scatterplot was also constructed to help in this process – not shown).

Insert Table 1 here

For the sufficiency analysis (Ragin, 2008; Andrews *et al.*, 2015), a truth table is created including possible configurations (with at least one country associated with it in strong membership terms - see Beynon *et al.*, 2016), based on the four considered conditions, see Table 2 (Ragin, 2008).

Insert Table 2 here

In Table 2, each row describes a possible configuration of the conditions, number of countries associated with that configuration (see Figure A2 in Appendix A for a Venn diagram representation of the strong membership of countries to each configuration), Raw consistency and PRI score values for each outcome (Dusa, 2019), i.e. BE (henceforth labelled *presence of high business exit*) and not-outcome, i.e. ~BE (henceforth labelled as *absence of high business exit*). With four conditions considered, 16 (= 2^4) possible configurations exist, respectively.

In terms of sufficiency analysis (Andrews *et al.*, 2015), the study only considers configurations with at least one country with strong membership (Kraus *et al.*, 2018; Beynon *et al.*, 2016). This frequency threshold consideration means configurations 1, 2, 6 and 7 (see Figure A2 for configuration details) are termed logical remainders (configurations not observed in the data – see Douglas *et al.* (2020), as they had no country associated with them in strong membership terms). Finally, choice of Raw consistency threshold value to employ was based on general criteria associated with *business exit*. Specifically, following Andrews *et al.* (2015), we identify the highest possible threshold value (to three decimal places of accuracy), while not allowing, for an outcome, any configuration to be associated with both outcome (BE) and not-outcome (~BE) in the subsequent analysis, found to be 0.818 (see details in Table 2). For completeness, PRI consistency scores are also given (and if necessary are checked against a threshold of 0.7). For details on the technical values describing individual and whole solution paths, including consistency and coverage based details, see Andrews *et al.* (2015) and Beynon *et al.* (2016).

Before sufficiency analysis results are presented, solution forms considered are next described. Following Andrews *et al.* (2015), complex and parsimonious solutions are generated and reported (see later in Table 3). Rihoux and Ragin (2009, p.181) define the complex solution as a “minimal formula derived without the aid of any logical remainders”. The parsimonious solution, conversely is, a “minimal formula derived with the aid of logical remainders, without evaluation of their plausibility” (ibid., p. 183). Configurations for which no empirical evidence is available (remainders), but are possible - so-called counterfactuals – are included to produce a more parsimonious solution. Consistent with Douglas *et al.* (2020), the notion of the intermediate solution, which would include ‘easy’

counterfactuals that are consistent with existing empirical and theoretical knowledge (Ragin, 2008), was also considered. Because individual conditions (presence or absence) can only be seen as relevant in combination with others, and the exploratory nature of this study, in the opinion of the authors, no ‘easy’ counterfactuals were identified, hence the intermediate solution is equated to the complex solution (see Andrews *et al.*, 2015; 2019; Douglas *et al.*, 2020), the complex being the one identified for reasons of strict accuracy (where appropriate we will remind the reader on its equality with the intermediate solution). As advocated by Wagemann and Schneider (2010), and as is the case here, we prioritise the discussion surrounding the complex solution (Cooper and Glaesser 2011), an approach also followed in recent studies such as Beynon *et al.*, (2016), Pickernell *et al.* (2019) and Beynon *et al.* (2020).

Results

Sufficiency analysis results reported in Table 3 (see Andrews *et al.*, 2015; 2019, for details of measures included in the table) shows combinations of conditions (henceforth called causal recipes) associated with presence (BE) and absence (~BE) of high business exit, in addition to configurations (shown in Table 2) and groupings of countries (shown in Figure A2) associated with those combinations.

The circle notation employed here is an adapted form from the original notation (Ragin and Fiss, 2008), since we are considering the complex solution with parsimonious solution rather than a discernible intermediate solution and parsimonious solution as in Ragin and Fiss (2008) (for reasons outlined previously the complex solution equates to the intermediate solution). Solid and open circles denote the presence and absence of a condition (no circle ‘does not matter’), respectively, and large and small size indicates core (in complex and parsimonious solutions) and peripheral (in complex solution), respectively.

Insert Table 3 here

When considering complex solutions (for BE and ~BE), three causal recipes describe presence of high business exit (BE), four for absence of high business exit (~BE) outcome. Configurations explaining presence of high business exit rates across countries generally asymmetrically differ from

configurations explaining absence of high business exit rates across countries, apart from one set of causal recipes (CO1 and CN1) that mirror each other.

The three recipes for presence of high business exit rates (CO1-CO3), broadly point to countries where high economic and/or regulatory institutional conditions are absent, but high normative and cultural-cognitive institutional conditions are present. This suggests countries with high business exit rates lack economic development and/or entrepreneurial framework conditions, but entrepreneurship is nevertheless highly valued in these countries and individuals often (in two out of three recipes, CO1 and CO3) feel confident with their entrepreneurial abilities and do not fear failure. Countries covered by these three recipes include Barbados, Botswana, Burkina Faso, Cameroon, Guatemala, Columbia, Peru, Philippines, Iran and Vietnam (see Figure A2). Due to lack of economic development in these countries, entrepreneurs are often pushed into entrepreneurship (Acs *et al.*, 2008; Beynon *et al.*, 2016), in combination with normative and cultural-cognitive institutional pulls. This means entrepreneurship is considered an attractive career choice with high social status attached, fear of failure largely absent amongst entrepreneurs. If resulting high entrepreneurial activity is not supported by effective framework conditions such as access to finance, supportive government policies or taxes, business exit rates are high. As discussed previously, however, presence of high business exit rates is not necessarily a negative, given that it may form part of wider business dynamics (Carree *et al.*, 2002; Jones *et al.*, 2014; Fritsch and Mueller, 2004; Sutaria and Hicks, 2004; Jenkins *et al.*, 2014).

Conversely, in countries where high business exit rates are absent (CN1-CN4), high economic and/or regulatory institutional conditions are present, but high normative and cultural-cognitive institutional conditions are absent. This suggests countries without high business exit rates are economically developed and/or have entrepreneurial framework conditions in place. However, in these countries, entrepreneurship is often not valued and/or individuals lack confidence in their entrepreneurial abilities, instead experiencing fear of failure. In these countries, individuals get pulled into entrepreneurship as a result of economic opportunities and/or regulatory institutional conditions that incentivise entrepreneurship. However, as presence of high economic and/or regulatory institutional conditions are not complemented by presence of high positive societal representations of entrepreneurship and/or

individual entrepreneurial attributes, absence of high business exit rates could be potentially detrimental, owners holding onto businesses for the ‘wrong’ reasons. Business owners may potentially perceive greater need to try sustaining existing businesses (or exit by alternative means), rather than discontinue them. Sunk costs of business exit in such circumstances may be high. Shepherd *et al.* (2009) highlight owner-managers who have invested considerable resources into the business, can be reluctant to exit that business. This could lead to low-productivity firms being kept alive to the detriment of the economy overall (Coad, 2014). Configuration 9, which includes Bulgaria, Hungary, Poland, Slovenia (former communist countries), Greece, Morocco and Italy (see Figure A2), represents countries that are economically developed, but lack other institutional conditions, evidenced in recipes CN2 and CN3. In these countries, existing businesses are less likely to exit, but resulting absence of high business exit is likely to have detrimental economic effects,

Absence of high business exit rates could also be the result of greater focus on innovation more generally, rather than entrepreneurship specifically. An example is configuration 13 that includes Belgium, Finland, Germany and South Korea (see Figure A2). Presence of high economic and regulatory institutional conditions, might indicate these countries specifically focus on providing regulatory framework conditions fostering longevity of innovative, high-productivity firms (CN4). The resulting absence of high business exit is likely economically beneficial.

Discussion

When comparing configuration-based findings with previous literature, it needs to be acknowledged direct comparability is not possible, given that previous research focuses on net effects of single conditions, whereas fsQCA focuses on configurational effects among conditions. There are also multiple recipes that explain presence and absence of high business exit rates across countries. Taking a broad perspective, this study supports Spencer and Gomez (2004) in that business exit rates across countries are driven by a complex combination of institutional conditions. A basic logic underpinning use of fsQCA is that presence or absence of high levels of conditions generating the outcome should not be conflated as explanations for the outcome not to occur (without theoretically-backed arguments) in contrast to mono-causal explanations in the form of regression analyses. Recipes that explain the

presence of high business exit rates across countries support this, being generally different to recipes explaining an absence of high business exit rates across countries, apart from one set of causal recipes (CO1 and CN1) that mirror each other. Evaluating the conceptual framework presented in Figure 1 in combination with the results, allows us to identify six recipes leading to an understanding of business exit. In addition, however, because the configurational approach seeks to generate typologies/taxonomies (Meyer *et al.*, 1993) it is in that spirit that the results are discussed here.

Broadly speaking, presence of high normative institutions in the form of positive societal representations of entrepreneurship as well as high cultural-cognitive institutions in the form of positive perceptions of entrepreneurial attributes are key to explaining the presence of high business exit rates, whilst the presence of high regulatory institutions in the form of supportive entrepreneurial framework conditions are key to explaining an absence of high business exit rates across countries. This highlights that entrepreneurial framework conditions play a different role in driving business exit rates compared to the extent to which entrepreneurship is valued in the society or the extent to which individuals perceive themselves as having entrepreneurial attributes.

Supporting Estrin *et al.* (2006) and Aidis *et al.* (2009), in terms of regulatory institutional conditions, the results indicate that absence of supportive high entrepreneurial framework conditions is related to presence of high business exit rates, whilst their presence is linked to absence of high business exit rates. Effects of regulatory institutional conditions on business exit rates are complex, however, as they exert their influence in combination with normative institutional conditions (Spencer and Gomez, 2004; Stenholm *et al.*, 2013). With regards to cultural-cognitive institutional conditions, our results broadly support Koellinger *et al.*'s (2007) overconfidence hypothesis.

The evidence suggests that in developing countries lacking supportive high entrepreneurial framework conditions, individuals are more likely to perceive themselves as having stronger (cultural-cognitive) entrepreneurial abilities and lower fear of failure, making overconfidence more likely. As a result, start-up and subsequently exit rates are likely to be higher. Conversely, individuals in developed countries with high entrepreneurial framework conditions, perceive themselves as having fewer (absent high cultural-cognitive) entrepreneurial abilities and are more likely to experience fear of failure. High

individual fear of failure results in lower entry rates (Arenius and Minniti, 2005; Vaillant and Lafuente, 2007), and subsequently an absence of high business exit rates.

The three recipes associated with presence of high business exit rates (CO1-CO3) are linked to institutional combinations suggesting such exit is likely beneficial for the economies in question. This is related, either to the nature of the economies as developing, or because absence of high entrepreneurial framework conditions suggests (unsupported) entrepreneurial activity is driven by over optimism of ability (Dawson and Henley, 2013) and/or strong support of entrepreneurial activity by society which would favour business churn. In contrast, most recipes associated with an absence of high business exit rates (CN1-CN3) are linked to institutional combinations suggesting such exit rates are likely detrimental for the economies in question. This is related to the nature of the economies as developed and/or with supportive framework conditions where exit is driven by negative societal or personal views of entrepreneurship. Only in one recipe (CN4), where high economic development and supportive high entrepreneurial framework conditions are both present (and normative and cultural-cognitive conditions are not relevant), would the recipe suggest that the absence of high business exit is driven by institutional conditions that are good for the economy (or at least not affecting the exit decision) and more likely to fostering the longevity of high-productivity, innovative businesses.

Results confirmed that countries differ in relation to their business exit rates. Interpreting the business exit rate itself, however, particularly where high exit rates are absent, requires consideration of the combined effects of economic and institutional conditions leading to exit to understand their differential economic effects.

Conclusions

The findings provide novel evidence regarding the complex combinations of institutional conditions that can explain cross-country variations in business exit rates, contributing to an emerging research stream calling for more nuanced understanding of combined effects of institutional conditions on entrepreneurial activity (Deng *et al.*, 2019; Urbano *et al.*, 2018). Specifically, the study makes a contribution through identifying how institutions matter in the business exit context, in terms of

combinations of institutional conditions determining presence and absence of high business exit outcomes and, crucially, whether such outcomes are likely beneficial or not for the broader economy.

Further, this study contributes to business exit literature by responding to calls for more systematic approaches, defining and measuring rates and types of entrepreneurial activity (see Stenholm *et al.*, 2013). While findings confirm business exit rates differing across countries, we argue business exit rates alone are meaningless, combinations of conditions leading to exit rates determining whether to consider them economically desirable or not. These results will help inform future studies, allowing fuller intermediate solutions, based on empirical and theoretical knowledge to be produced.

We have also identified limitations. First, the factor analysis-based measure of business exit used in this study does not distinguish between business exit due to performance or other issues. Given previous evidence suggesting the majority of business exit is related to non-viability (Coad, 2014), this specific type of business exit could usefully benefit from further investigation.

Second, while we have focused on the broad conditions most consistent with concepts of country institutional profiles from the GEM framework, individual variables that contribute to the factor analysis created conditions might be relevant in their own right, as well as variables omitted from the study due to utilising factor analysis. This study explicitly identifies the sample of countries covered, range of conditions considered, different analyses conducted (e.g. factor analysis encompassing wide range of conditions) and recipes associated with high and non-high rates of business exit. Detailed explanations regarding the calibration process of both conditions and outcomes, types of databases handled and reporting of results have also been provided. However, one of the remaining limitations of this study is created by its aim to explain business exit across a wide range of countries, using a wide range of variables from which to generate the institutional dimensions. Related to this, it must be acknowledged that this initial, broad analysis is at least partially driven by the need to identify which conditions (and combinations thereof) are present and absent when there are cases of business exit, rather than explaining the precise causal mechanisms, explanations therefore based on implied elements derived from the results as opposed to the causal links being sufficient to explain the outcomes in

themselves. In “casting the net” this wide, an inevitable consequence is that more “fine-grained explanations” for individual cases or types of economies, is an area for future research.

Third, this study is cross-sectional in nature as fsQCA has been problematic to apply to longitudinal panel data (Fiss *et al.*, 2013). The stability of (a sub-set of variables at least) of this dataset over time, has, however, been examined in a recent analysis (Beynon *et al.*, 2020), specifically comparing a longitudinal approach (using data from 2007-2017) with an earlier cross-sectional study (Beynon *et al.*, 2016), for drivers of Total Entrepreneurial Activity. That research found strong stability between the cross-sectional and longitudinal analyses in terms of the resulting recipes and also stability for 60 of the 108 countries considered in terms of the recipes they were associated with from year to year. This also indicates, of course, that changes for countries over time, against the recipes they are associated with, are also possible. As such, the cross-sectional study in this study, must be seen as an initial analysis, upon which future longitudinal analysis can be built, considering fsQCAs longitudinally offering a method to unravel the dynamics of business exit over time by identifying how configurations change as economies develop. Thus, the field can move to more dynamic theories of business exit and practitioners will learn more regarding the sequence of institutional condition development necessary for the most beneficial outcomes.

Fourth, fsQCA is still being technically developed, suggesting future work reconsidering necessary conditions in further detail (noting economic development stage relative to ~BE in Table 1). Lastly, we base arguments for differential effects of business exit rates on economies on extant literature. Future research could test those effects using future entrepreneurial activity, or competitiveness.

This study, in an under researched area, should also be regarded as a starting point for further research. The amalgamation, using factor analysis, of a wide range of variables into three, clearly identified institutional causal conditions was necessary because of the nature of the dataset used and supported by previous literature. The analysis then used these conditions to seek to identify combinations of (presence and absence of) high levels of institutional conditions that can provide generalised explanations for business exit outcomes over a very diverse range of countries. In evaluating these results comparison had to be made with the previous studies that existed. These took a more deterministic view, using

single causal variables, which obviously affected the ways in which the results were discussed. This highlights the requirement for further QCA based studies, in order to develop a more relevant evidence base for comparison. Future research could, for example, usefully develop more focused, concise frameworks, tested through equally transparent processes, in line with the fundamentals of fsQCA that also recognise the singularity and specificities of each case within a comparative logic.

Nevertheless, identifying recipes applying to different groups of countries allows policymakers to more clearly identify where and how policy / policy combinations should be focused, given that combinations of institutional conditions are important in explaining business exit. This can assist policy makers strengthen specific institutional conditions to avoid undesirable exits, in this context exits not related to alternative, more beneficial, uses for resources.

Appendix

This Appendix outlines details on the pre-calibration process undertaken on the continuous condition and outcome values describing the considered countries. As described in the main text, the approach following Andrews *et al.* (2015) and Beynon *et al.* (2016) is adopted, the final details are shown in Figure A1.

Insert Figure A1 here

Following the strong membership based approach to associating a case (country) to a configuration, Figure A2 described the respective strong membership details of the 54 countries to the 16 possible configurations.

Insert Figure A2 here

An important part of this pre-calibration approach is the ‘sense checking’ of the identified thresholds (lower threshold, crossover and upper threshold), which contribute to the production of the considered membership values used in the analysis. This is also next demonstrated in this appendix, here just for the condition Entrepreneurial framework conditions, see Figure A3.

Insert Figure A3 here

When reviewing the identified threshold values for each continuous condition and outcome countries were identified around the respective threshold values, Figure A3 shows the case of the condition ‘Entrepreneurial framework conditions’ and specifically the crossover threshold, where a cluster of country values are shown around the identified crossover point.

For this pdf/membership graph six countries are identified to the left and three to the right of its crossover point, and there was consideration of a revised crossover point just to the left of the initially considered one, which would lie between the country values for Poland (left) and Kazakhstan (right) [small gap lies between them], the impact would be to move three countries, Kazakhstan, Spain and Botswana, from originally having strong membership to the absence of high entrepreneurial framework conditions, to being more associated with high entrepreneurial framework conditions. Subsequent impact in terms of configuration country strong membership is shown in the Venn diagram of configurations shown in Figure A4 (can be compared with the final Venn diagram shown in Figure A2).

Insert Figure A4 here

The difference between the two Venn diagrams (in Figure A2 and A4) is in the new positions of the countries Kazakhstan (now in 15:1110), Spain (14: 1101) and Botswana (8: 0111) in above diagram. The difference was then considered using additional data from the 2018 GEDI index (Acs *et al.*, 2018) and, after review it was determined that revising the crossover point was not justified.

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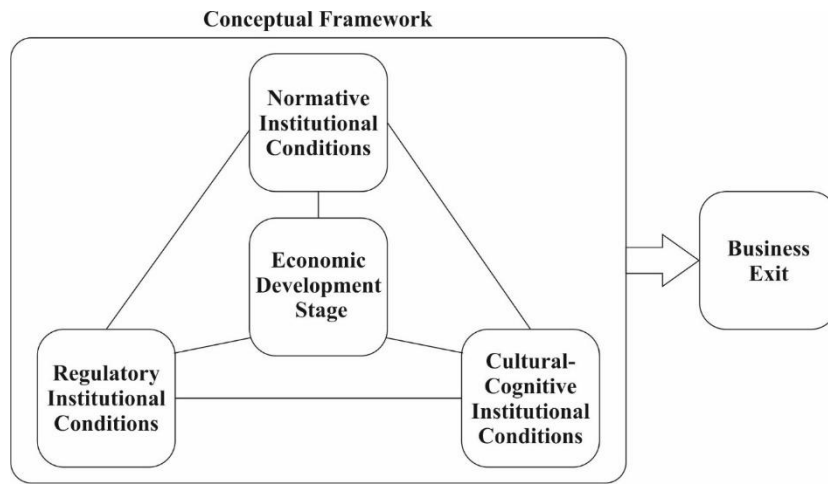


Figure 2. Map showing countries considered in this study (shaded grey)



Table 1. Analysis of necessity results for business exit (BE and ~BE)

Condition		Outcome - Business exit			
		BE		~BE	
		Consistency	Coverage	Consistency	Coverage
Economic Development Stage	var	0.727	0.414	0.894	0.729
	not-var	0.524	0.776	0.281	0.596
Regulatory institutions: entrepreneurial framework conditions	var	0.588	0.503	0.656	0.802
	not-var	0.769	0.610	0.594	0.674
Normative institutions: societal value of entrepreneurship	var	0.824	0.684	0.491	0.583
	not-var	0.497	0.405	0.733	0.857
Cultural-cognitive institutions: perceptions of entrepreneurial attributes	var	0.801	0.652	0.543	0.632
	not-var	0.548	0.456	0.701	0.834

Table 2. Truth table showing configurations of four conditions, with Raw consistency (and PRI score) values to business exit outcome (BE) and not-outcome (~BE); and frequency (No) of countries in that configuration (Cnfg)

Cnfg	Economic Development Stage	Regulatory institutions: entrepreneurial framework conditions	Normative institutions: societal value of entrepreneurship	Cultural-cognitive institutions: perceptions of entrepreneurial attributes	No.	Raw Consistency (PRI score in brackets)		
						BE	~BE	
3	0	0	1	0	2	0.884 (0.623)	0.801 (0.351)	
4	0	0	1	1	2	0.934 (0.851)	0.624 (0.149)	
5	0	1	0	0	1	0.746 (0.071)	0.981 (0.929)	
8	0	1	1	1	2	0.929 (0.832)	0.649 (0.168)	
9	1	0	0	0	7	0.549 (0.117)	0.940 (0.883)	
10	1	0	0	1	6	0.701 (0.307)	0.867 (0.693)	
11	1	0	1	0	6	0.817 (0.482)	0.828 (0.511)	
12	1	0	1	1	4	0.877 (0.669)	0.746 (0.314)	
13	1	1	0	0	4	0.532 (0.025)	0.988 (0.975)	
14	1	1	0	1	7	0.598 (0.150)	0.924 (0.838)	
15	1	1	1	0	9	0.636 (0.130)	0.944 (0.867)	
16	1	1	1	1	4	0.743 (0.406)	0.823 (0.591)	
Raw Consistency threshold						0.818	4 (10)	8 (44)

Table 3. Sufficiency analyses results for business exit, BE and ~BE (including complex and parsimonious solutions), with raw consistency threshold 0.818

Conditions	Business exit (BE)						
	BE (Presence of high business exit rates)			~BE (Absence of high business exit rates)			
Economic Development Stage		⊖	⊖		●	●	●
Regulatory institutions: entrepreneurial framework conditions	⊖	e		●			●
Normative institutions: societal value of entrepreneurship	●	●	●	⊖	⊖		
Cultural-cognitive institutions: perceptions of entrepreneurial attributes	●		●	e		⊖	
Complex Solution	CO1	CO2	CO3	CN1	CN2	CN3	CN4
Configurations	4, 12	3, 4	4, 8	5, 13	9, 10, 13, 14	9, 11, 13, 15	13, 14, 15, 16
Raw Consistency	0.888	0.905	0.941	0.989	0.874	0.862	0.849
PRI Score	0.744	0.798	0.878	0.977	0.812	0.784	0.759
Raw Coverage	0.524	0.427	0.433	0.377	0.675	0.635	0.602
Unique Coverage	0.151	0.054	0.060	0.024	0.083	0.035	0.056
Solution Consistency	0.881			0.797			
Solution PRI Score	0.755			0.714			
Solution Coverage	0.638			0.890			
Parsimonious Solution	PO1	PO2		PN1		PN2	PN3
Configurations	4, 12	3, 4, 8		5, 9, 10, 13, 14		9, 11, 13, 15	13, 14, 15, 16
Raw Consistency	0.888	0.879		0.857		0.862	0.849
PRI Score	0.744	0.768		0.792		0.784	0.759
Raw Coverage	0.524	0.487		0.733		0.635	0.602
Unique Coverage	0.151	0.115		0.142		0.035	0.056
Solution Consistency	0.856			0.785			
Solution PRI Score	0.712			0.703			
Solution Coverage	0.638			0.925			

Figure A1. Pdf and membership functions for continuous conditions and outcome

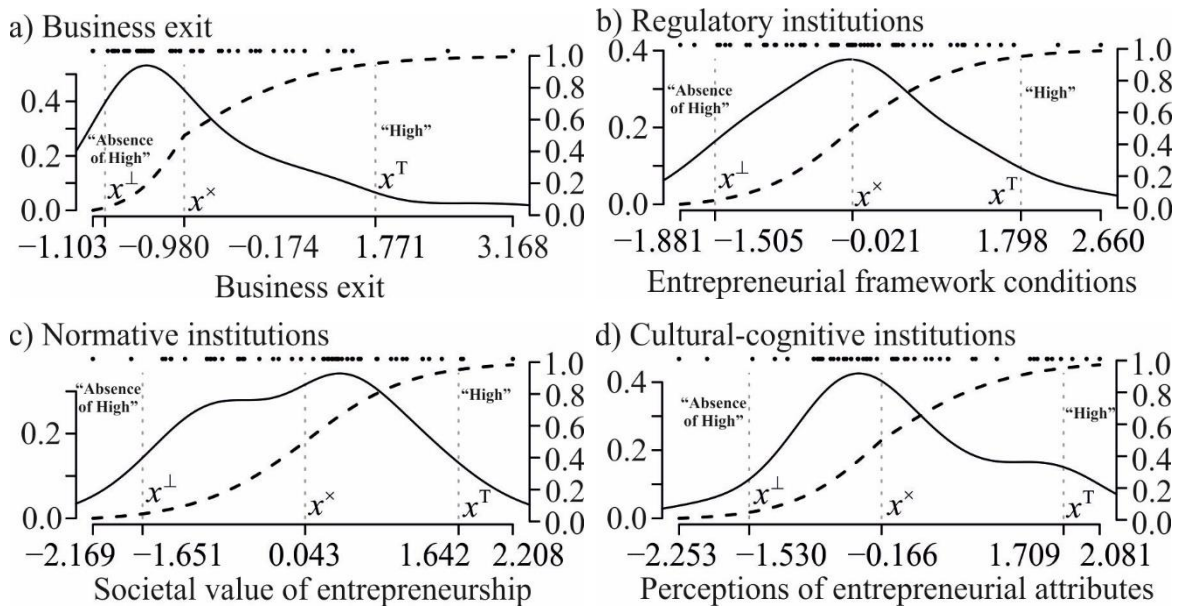


Figure A2. Venn diagram showing 54 countries across configurations based on strong membership, using four conditions

1: 0000		9: 1000	
	2: 0001	10: 1001	Bulgaria Greece Hungary Italy Morocco Poland Slovenia
3: 0010	4: 0011	12: 1011	11: 1010
Iran Vietnam	Botswana Burkina Faso	Barbados Colombia Guatemala Peru	Egypt Brazil Tunisia Romania South Africa Kazakhstan
	Cameroon Philippines	Indonesia Ecuador Chile Netherlands	Australia China Thailand Israel Portugal Taiwan Ireland Sweden
7: 0110	8: 0111	16: 1111	15: 1110
		Malaysia Mexico Latvia Macedonia Switzerland Luxembourg	South Korea Belgium
India	6: 0101	Estonia 14: 1101	Finland Germany
5: 0100			13: 1100

Figure A3. Pdf and membership functions for continuous condition Entrepreneurial framework conditions with country labels now included

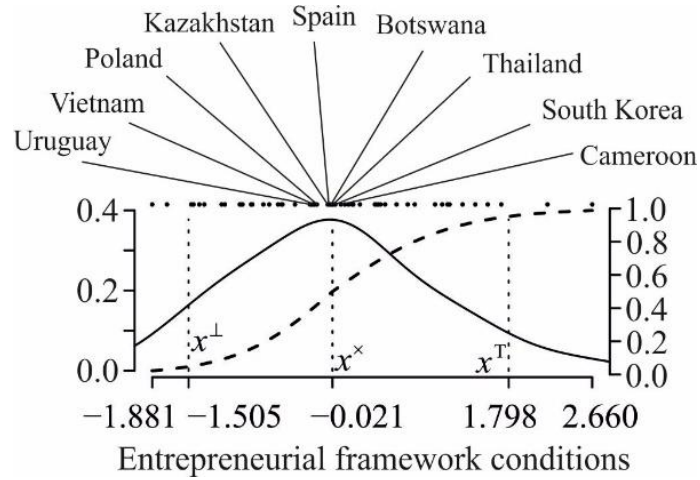


Figure A4. Adjusted Venn diagram showing 54 countries across configurations based on strong membership, using possible change to entrepreneurial framework conditions crossover point

1: 0000		9: 1000	
	2: 0001	10: 1001 Argentina Croatia Puerto Rico Slovakia Uruguay	Bulgaria Greece Hungary Italy Morocco Poland Slovenia
3: 0010 Iran Vietnam	4: 0011 Burkina Faso	Barbados 12: 1011 Colombia Guatemala Peru	11: 1010 Egypt Brazil Tunisia Romania South Africa
	7: 0110 Botswana Cameroon Philippines	Indonesia Ecuador Chile Netherlands	China Taiwan Thailand Portugal Australia UK Kazakhstan Ireland Sweden
	8: 0111	16: 1111 Israel	15: 1110
5: 0100 India	6: 0101	Malaysia Mexico Latvia Macedonia Switzerland Spain Luxembourg Estonia 14: 1101	South Korea Belgium Finland Germany
			13: 1100