Temporal and Geographic Stress Testing of Entrepreneurial Proportionalities in United States Counties

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Abstract: Urbanization is one of man’s greatest challenges. Its handling requires a better understanding of orderliness in the demographic–socioeconomic–entrepreneurial domain of human settlements. Operating business enterprises are manifestations of successful entrepreneurship, which is the characteristic of interest here. Non-linear entrepreneurial proportionalities can be detected through the use of log–log regressions (power law analyses). Such analyses revealed many entrepreneurial proportionalities in datasets of a large number of U.S. counties. This enabled the examination of the temporal and geographic sensitivities of three entrepreneurial types: total entrepreneurship (expressed in total enterprise numbers), new entrepreneurship (the ability to successfully start enterprises of types not yet present), and existing entrepreneurship (the ability to start more enterprises of types already present). Stress testing of the entrepreneurial proportionalities during a period of economic growth (2000 to 2007) followed by a period of economic decline (the so-called Great Recession from 2007 to 2010) enabled the examination of a hypothesis that suggested that the entrepreneurial proportionalities are not temporally or geographically sensitive. The hypothesis is accepted for new and existing entrepreneurship. Total entrepreneurship is geographically sensitive, but not temporally. There is apparently no lack of entrepreneurship in human settlements. Their total entrepreneurship (expressed as total enterprise numbers) appears to be a function of their population sizes and prosperity/poverty levels.

Keywords: entrepreneurship; new entrepreneurship; existing entrepreneurship; entrepreneurial space; entrepreneurial proportionalities; human settlements; U.S. counties; power laws; stress testing

1. Introduction

Global urbanization is one of the greatest challenges humanity faces after becoming social [1]. Although cities have proven to be humanity’s engines of creativity, wealth creation, and economic growth, their rapid and ongoing growth has also been a source of pollution and disease [2]. This has contributed to global problems such as climate change and incipient crises in food, energy, and water availability. The future of humanity and the long-term sustainability of the planet are inextricably linked to the fate of human settlements [2].

Scaling studies reveal the underlying principles that determine the dominant behavior of highly complex systems [3]. In urban studies, scaling research [4] has demonstrated that the spatial and temporal levels of the social, economic, and political interactions of urban settlements are subject to constraints imposed by environmental conditions, technology, and institutions [3,5]. Settlement Scaling Theory (SST) provides the means to generate predictions for how measurable quantitative attributes of human settlements are related to their population sizes [3].

Some surprisingly simple, but statistically significant, proportionalities have been recorded in the enterprise structures of many human settlements. One indicates that the total number of enterprises—a measure of total entrepreneurship (a fuller discussion of entrepreneurship follows below)—in human settlements such as South African towns [6],
U.S. counties [7], U.S. micropolitan statistical areas [8], and U.S. metropolitan statistical areas (MSAs) [9] are linearly proportional to their population sizes [6–9]. The second proportionality indicates that new entrepreneurship (the ability to successfully start new business types not yet present in a human settlement) in South African towns [10] and smaller U.S. counties [11] is sub-linearly proportional to their total enterprise numbers. A third proportionality follows from the foregoing. Existing entrepreneurship (the ability to start more businesses of types already present) represents the difference between total and new entrepreneurship. Given that new entrepreneurship is related to total entrepreneurship, existing entrepreneurship is, therefore, also related [11].

The first proportionality extends over many orders of magnitude of population size and enterprise numbers of MSAs. Youn et al. [9] remarked that there is approximately one business establishment for every 22 people in U.S. cities, regardless of their size, and, on average, a new workplace is created each time a city size increases by 22 people. Due to the limitations of enterprise-type classification systems [9], the second proportionality was found to apply to smaller human settlements (maximum enterprise richness values of approximately 300 to 350) [6,7]. This proportionality is a regular, but non-linear, increase of about 60 percent in the number of different enterprise types in human settlements when their enterprise numbers double [10–12]. The third proportionality is a regular and super-linear increase of about 135 percent in the existing entrepreneurship of human settlements when their enterprise numbers double [11].

Entrepreneurship clearly plays a role in these proportionalities. The first involves entrepreneurship that manifests in the total number of enterprises and employees in human settlements. The second involves abilities to identify and successfully pursue business opportunities of business types that have not previously been present in specific human settlements. The third involves abilities to identify and successfully pursue more business opportunities of business types that are already present in specific human settlements. These proportionalities have elicited some comments but are still not well understood. For instance, Youn et al. [9] remarked that the remarkable constancy of the average number of employees and the average number of establishments across U.S. cities is contrary to previous wisdom and somewhat puzzling. Understanding the dynamics and vulnerabilities of these proportionalities should enhance knowledge about the entrepreneurial sustainability of human settlements. This is what is being pursued here.

1.1. Literature Survey

1.1.1. Human Settlements and Enterprise Dynamics

Cities are man’s greatest invention and are gateways for ideas [13]. Cities are also a standard unit of observation in urban economics [14]. A project of the Santa Fe Institute was started early in the new millennium to investigate the demographic and socioeconomic dynamics of cities [2]. Scaling analyses were used to reveal the underlying dynamics and structure of cities [2–5,15,16]. The development of the SST [4] provided a set of hypotheses and relationships that together estimate how measurable quantitative attributes of settlements are related per capita. The functional properties of cities, such as levels of economic productivity, material infrastructure, and even conflict, vary in a scale invariant way from the largest cities to the smallest towns within urban systems [17]. Even the smallest settlements have elements that functionally find correspondence in larger modern cities. The power law is the preferred scale invariant function to describe the characteristics of cities across scales [17]. Power laws quantify how measurable aggregate properties respond to changes in the size of a system [18]. Their analytical power stems from the fact that responses are often simple, regular, and systematic over a wide range of sizes, indicating that there are underlying generic constraints at work on these systems as they develop. Power law analyses are used in this contribution.

However, the views and research practices of the Santa Fe group have been criticized [19]. Martin & Sunley [19] stated that a formal (mathematical) modelling methodology is neither necessary nor sufficient for understanding the complex behavior of the economic
landscape. They added that evolutionary processes in the socioeconomic sphere are not easily reduced to, nor rarely can be adequately represented by, formal models. However, over the last few decades and in diverse disciplines such as economics, geography, and complex systems, perspectives have arisen that many properties of cities are quantitatively predictable due to agglomeration or scaling effects [17,20]. A theoretical framework that combines two main processes, namely, the dynamics of agglomeration/polarization and the unfolding of an associated nexus of locations, land uses, and human interactions, is now available and provides the means to understand all cities [21]. Understanding the dynamics of the constraints mentioned in Ref. [18] is obviously important and is a major reason for this contribution. In such a pursuit, it is necessary to consider innovation and entrepreneurship as potential constraints in the linkages of the demographic–socioeconomic domains of human settlements.

1.1.2. Innovation and Entrepreneurship as Elements in City Dynamics

The clustering of talent and economic assets, face-to-face interaction, buzz, diversity, and the critical mass that only cities can provide are essential elements in innovation, creativity, and economic growth [22,23]. The expansion of city populations requires the expansion of innovation cycles at a continually accelerating rate in order to sustain growth and avoid stagnation or collapse [15]. For instance, patent production as an indicator of innovation scales super-linearly with increases in city populations [2].

Entrepreneurship is a crucial mechanism in economic development [24]. The function of entrepreneurs is to reform or revolutionize the patterns of production by exploiting inventions or untried technological possibilities for producing new commodities or producing old ones in new ways [25,26]. Such ‘industrial mutation’ revolutionizes the economic structure from within by incessantly destroying the old one and creating a new one [25].

Entrepreneurship, in common with other unit ideas such as leadership, is an elusive concept [27]. It is broad and wide-ranging, and its boundaries are fuzzy and may incorporate a number of disciplinary approaches. For instance, entrepreneurship has been defined over time in terms of: Environmental, structural, strategic, and leader personality qualities [28]; attempts at new ventures or new business creations [29]; the extraction of value from environments [30]; and the pursuit of opportunity beyond resources controlled [31]. Davidsson [32] cautioned that there is a paradox if entrepreneurship research is limited to something that can be defined by an outcome criterion, e.g., a successful new business, then some important parts of the entrepreneurial process, e.g., failure, may be missed.

Given that the focus of this contribution is on the entrepreneurial dynamics of selected human settlements, it is necessary to focus on outcomes. Therefore, entrepreneurship is here defined in terms of three outcomes: (i) how many enterprises are in operation in a specific human settlement (i.e., total entrepreneurship, which is the manifestation of successful entrepreneurship), (ii) how many different enterprise types are present in the settlement (the ability to conceive business opportunities linked to enterprise types not yet present, i.e., new entrepreneurship), and (iii) existing entrepreneurship (the difference between total and new entrepreneurship, a measure of the repetition of business ideas that are already in operation).

How does entrepreneurship relate to SST? The enterprise numbers (measures of total entrepreneurship) of MSAs and U.S. counties have a linear or almost linear per capita relationship [9,33] and in this way appear to follow the basic SST tenet of being per capita based [34]. However, the number of enterprises in U.S. counties is not only a function of their population numbers, but also of the prosperity/poverty levels of their communities, i.e., their buying power [33] (which is more fully explained later). Total entrepreneurship in these counties is, therefore, only partially dependent on population numbers. In addition, new entrepreneurship and existing entrepreneurship are strongly and non-linearly related to total entrepreneurship [35]. Their per capita links are, therefore, indirect. This contribution takes this difference into account by focusing on two entrepreneurially-based relationships: that between total entrepreneurship and new entrepreneurship, and that
between total entrepreneurship and existing entrepreneurship. These links have not been explored before. It is now necessary to review knowledge about each of the entrepreneurship types mentioned before.

Total Entrepreneurship (Which Is Estimated from the Total Number of Enterprises in a Human Settlement)

Linear per capita indicators are often used to characterize and rank cities [34]. This approach was initially used in this analysis but discarded when non-linear proportionalities were revealed (see later). Proportionalities between the population numbers and total entrepreneurship of human settlements are a seemingly common characteristic of human settlements [6,9,12]. For instance, analyses by Youn et al. of a large number of U.S. MSAs [9] revealed a linear relationship. Statistically significant linear relationships between the population sizes and total enterprises have also been reported for South African towns [6] and Alabama counties [12]. In these cases, the proportionalities were detected over ranges of small to large towns or counties.

These observations generated a number of questions: Why are there proportionalities between population and enterprise numbers when large numbers of human settlements (e.g., thousands of U.S. counties) that range widely in size and geographic location are investigated? What are the implications of these proportionalities? Three issues seem to be important. Firstly, there cannot be a lack of entrepreneurs in any settlement because its population size is involved in the determination of its enterprise numbers and not some entrepreneurial measure. In other words, population size contributes to the determination of the ‘entrepreneurial space’ of settlements. Entrepreneurial space determines how many enterprises can survive and exist in a settlement [10,11,33]. Secondly, the population numbers and total enterprise numbers of human settlements have been linked in a measure of community prosperity/poverty, termed the enterprise dependency index (EDI) [33]. This index expresses the financial ability of a settlement to sustain enterprises. It is expressed in terms of persons per enterprise. Higher indices indicate poorer communities, and vice versa. The number of enterprises in any human settlement, therefore, depends on both its population size as well as the buying power (financial ability) of its population to sustain enterprises. Stated differently, the population number and the prosperity/poverty status of a human community determine the extent of its entrepreneurial space. Thirdly, a full understanding of the resistance to change of total enterprises versus population proportionality should benefit from an examination of their behavior under stress conditions. Such conditions occurred in the U.S. economy in the 2000 to 2010 period. The U.S. economy grew from 1990 to 2007, a phenomenon that would stress the proportionalities in one direction. Thereafter, the financial crisis and ensuing recession (starting in 2007 and lasting to 2010) injured the US economy [36], a situation that would stress the proportionalities in a different direction. A comparison of the proportionalities of the same human settlements at three different time intervals, i.e., 2000 (during growth phase), 2007 (end of growth phase), and 2010 (end of the recession), would test the resistance to change of the proportionality between population size and total entrepreneurship.

New Entrepreneurship

New entrepreneurship is a measure of business diversity. However, is business diversity important? Diversity is a defining property of complex adaptive systems, whether it be ecosystems, social systems, or economies [37]. The success and resilience of cities, together with their role in innovation and wealth creation, are driven by their ever-expanding diversity [9]. The internal heterogeneity and diversity of cities contribute to their success [38]. If business diversity is important in cities, is this also the case in regions (such as counties) or countries?

The relationship between regional economic diversity and growth and stability has been debated for many decades [39,40]. Some regional scientists have historically promoted policies of economic diversification to achieve economic goals [41]. Regions are also subject
to a never-ending process of creative destruction—the process that Schumpeter identified in 1939 as the driving force behind economic development [26]. In the long run, regions depend on their ability to create and attract new industries to offset the decline in and destruction of other parts of their economies.

Making new products or offering new services involves significant challenges [42]. The mix of products that countries are able to make is reflected in their business diversities [43]. The diversity of products and services, therefore, stems from enterprise diversity, which is dependent on new entrepreneurship. The latter is, therefore, an important element in the success of regions and countries.

The number of enterprise types in an economy represents the number of times entrepreneurs in a specific location have successfully started enterprises of types that were not present before. This number, therefore, represents a measure of business diversity and, thus, of new entrepreneurship. A surprisingly simple non-linear proportionality between total entrepreneurship and new entrepreneurship has been detected in South African towns [10,35] and some U.S. counties [11].

In natural ecology, there was confusion in the use of diversity terminologies to describe ecosystems [44]. It was suggested that the term, species richness, should be used as a reference to the number of species in a given area or in a given sample and the term, species diversity, should be used as an expression or index of some relationship between the number of species and number of individuals in a natural ecosystem. Based on a similar logic, the term, enterprise richness, was adopted to reflect the number of enterprise types in human settlements [10,11,35]. In this contribution, the term, new entrepreneurship, is based on the enterprise richness (i.e., number of different enterprise types) of human settlements. It reflects the number of instances where an entrepreneur or group of entrepreneurs successfully founded new business types that have not been present before in a settlement. It must be contrasted with existing entrepreneurship, which is necessary to start more enterprises of types that are already present in a human settlement, e.g., the second or third restaurant, and so on.

The exponent of the power law relationship between the total entrepreneurship and new entrepreneurship of human settlements is typically in the order of 0.65. This indicates that for every doubling (100% increase) of total entrepreneurship, new entrepreneurship increases by only approximately 60%. Figure 1 illustrates the use of a hypothetical power law equation to show the importance of new and existing entrepreneurship as functions of the total entrepreneurship of a human settlement. At a total entrepreneurship of 180, the needs for new entrepreneurs and existing entrepreneurs are identical. Below this number new entrepreneurs are increasingly more important. Above this number existing entrepreneurs increasingly dominate. Therefore, the entrepreneurial challenges of small and large human settlements differ significantly. It is important to note that the growth of total entrepreneurship in human settlements always involves both new and existing entrepreneurship, albeit in different proportions. This situation is generally true for towns in South Africa, U.S. counties, and U.S. micropolitan statistical areas—and might apply elsewhere too.

Total entrepreneurship can be divided in more than one way. It can be divided into new and existing entrepreneurship and it can also be divided into entrepreneurship in tradable sectors and entrepreneurship in non-tradable sectors [41]. There is some commonality between new entrepreneurship and entrepreneurship in the tradable sector of human settlements. Both sectors are related in a non-linear way with total entrepreneurship. However, the former scales strongly sub-linearly with total entrepreneurship [11] and the latter slightly sub-linearly [45]. New entrepreneurship and entrepreneurship in the tradable sector are, therefore, not identical. In this contribution, the focus is on new entrepreneurship rather than on entrepreneurship in the tradable sector.
How resistant to change is the total entrepreneurship and new entrepreneurship relationship? For instance, it might be geographically or temporally insensitive [35]. Data about the growth phase before and during the subsequent decline of the U.S. economy (before and during the recession of 2007) [36] provides an opportunity to stress test the resistance to change of the relationship. A comparison of the proportionality of the same human settlements at three different time intervals, i.e., 2000 (during an economic growth phase), 2007 (end of growth phase), and 2010 (after the recession), would test demographic and economic changes as constraints on the proportionality between total and new entrepreneurship.

Existing Entrepreneurship

There is a third entrepreneurial proportionality in human settlements, i.e., existing entrepreneurship [11]. It is simply the difference between the total entrepreneurship and new entrepreneurship of a human settlement, i.e., entrepreneurship focused on business types already present in a human settlement. Therefore, it represents ‘more of the same’ entrepreneurship. A statistically significant power law relationship between total entrepreneurship and existing entrepreneurship was registered in Texas counties [12] and South African towns [45]. The exponents of the power laws are super-linear, and existing entrepreneurship increases by approximately 150% upon every doubling of total entrepreneurship (100% increase). In addition, there is a logarithmic relationship between new entrepreneurship and existing entrepreneurship [11]. Existing entrepreneurship expands rapidly as the size of human settlements and their corresponding new entrepreneurship levels increase (Figure 1).

There is some commonality between existing entrepreneurship and entrepreneurship in the non-tradable sector of human settlements. However, these entrepreneurial types are not identical. In South African towns, existing entrepreneurship scales strongly super-linearly and entrepreneurship in the non-tradable sector scales slightly super-linearly with total entrepreneurship [45]. Existing entrepreneurship as well as entrepreneurship in the non-tradable sector are focused on local markets [45,46]. The vast majority of jobs in modern societies are in local services, which are served by people such as waiters, plumbers, nurses, teachers, real estate agents, hairdressers, etc. These people offer services that are produced and consumed locally [46]. Local economies are differentiated by the geographical ranges of the markets of their traded and non-traded industries [47]. In this contribution, the focus is on existing entrepreneurship rather than on entrepreneurship in the non-tradable sector.
1.2. Purpose of This Investigation

Entrepreneurship is a crucial mechanism in economic development [24]. The characteristics of cities enhance innovation and creativity [22, 23]. Constraints imposed by environmental conditions, technology, and institutions impact the spatial and temporal levels of the social, economic, and political interactions of urban settlements [3, 5]. Therefore, constraints that might impact entrepreneurship in human settlements should be investigated. The prime purpose of this contribution is to investigate the resistance to change of the three entrepreneurial proportionalities present in human settlements, namely those between: total entrepreneurship and population size; total entrepreneurship and new entrepreneurship; and total entrepreneurship and existing entrepreneurship. Such analyses have not been carried out before. The basic hypothesis is that these proportionalities are temporally and geographically robust. To test the hypothesis, the influence of economic changes on the properties of the proportionalities during periods of economic growth and decline is examined. In other words, it is examined if time, geographic location, or community prosperity/poverty levels influence the properties of the proportionalities. U.S. counties were selected as the human settlements in the study.

2. Materials and Methods

2.1. Analytic Strategy

This analysis involves the responses of the three proportionalities to economic changes. One proportionality has a per capita base (total entrepreneurship per population). The other two have an entrepreneurial base (new entrepreneurship per total entrepreneurship, and existing entrepreneurship per total entrepreneurship). The basic premise here is that changes in potential external controlling factors may influence the properties of the proportionalities. The use of appropriate information from U.S. counties from a period when the U.S economy was growing strongly, only to be followed by a significant recession, provides an opportunity to investigate the temporal robustness of the proportionalities. In addition, the use of the data of a large number of U.S. counties from different U.S. states also provides an opportunity to investigate the influence of geographic location on the properties of the proportionalities.

Three different years have been selected to quantify the status quo of the three proportionalities as well as the prosperity/poverty levels of all the counties, and, where possible, groups of counties from 29 different U.S. states. The chosen years are: 2000, during an economic growth phase of the U.S. economy; 2007, at the end of the end of the growth phase and at the onset of the recession; and 2010, after the recession.

An important part of this analysis is a focus on new entrepreneurship. The North American Industrial Classification System (NAICS) [48] is used for the classification of the enterprises of the counties. Given the limitations of this system when the enterprises of large human settlements are classified [9], 1785 small counties (Appendix A) with between 30 and 250 enterprise types were selected for this study (see more later). Precisely the same group of counties was used in the analyses of each of the three selected years.

2.2. Datasets Used

The County Business Patterns datasets of the U.S. Census Bureau [49] were used to obtain information on the numbers of enterprises (called establishments in the datasets) and enterprise types of the selected U.S. counties for 2000, 2007, and 2010. Population estimates were obtained from the Small Area Income and Poverty Estimates (SAIPE) program of the U.S. Census Bureau [50].

2.3. Selection of Counties

The number of enterprise types and total enterprises in the county dataset for 2000 were plotted (not presented here). With the larger number of enterprises, there was a distinct skewness of enterprise types against total enterprises in the counties. This indicated limitations in the NAICS classification system to classify all enterprise types of large human
settlements [9]. Given that there is no apparent skewness in the range of 30 to 250 enterprise types, 1785 counties (Appendix A) within this range were selected for study.

2.4. Quantifying Enterprise Numbers, Enterprise Types and Population Numbers

Excel spreadsheets were used to list the numbers of enterprises, enterprise types, and populations of each of the 1785 selected counties. The totals of each of these characteristics for 2000, 2007, and 2010 were calculated.

2.5. Quantifying Entrepreneurship

2.5.1. Total Entrepreneurship

The total number of enterprises (estABLishments) of a county in the datasheet was taken as a measure of its total entrepreneurship.

2.5.2. New Entrepreneurship

The number of enterprise types in a county was represented by its number of different 6-digit classifications [49] in annual datasheets for 2000, 2007, and 2010. This served as a measure of its new entrepreneurship.

2.5.3. Existing Entrepreneurship

The existing entrepreneurship of a county was obtained by subtracting its new entrepreneurship from its total entrepreneurship.

2.6. Entrepreneurial Proportionalities

2.6.1. Population and Enterprise Relationships

The population to total entrepreneurship relationship for each of the three years (2000, 2007, and 2010) for the 1785 counties as well as for groups of counties within different U.S. states were calculated. Based on Ref. [7], log-log regression analyses (power laws) were used. Microsoft Excel software was used for these analyses.

The nature of the exponents—i.e., super-linear, linear, or sub-linear [2]—of the power laws enabled the determination of the type of relationship between population numbers and total entrepreneurship of all (1785) or groups of counties. The calculation of population per enterprise ratios for different population levels and different groups of counties followed. These ratios are used as measures of the prosperity/poverty states (called enterprise dependency indices, EDIs) [51] of all (1785) or groups of counties from 29 different states.

2.6.2. Total Entrepreneurship and New Entrepreneurship Ratios

Log-log regression (power law) analyses were used to determine the relationships between total entrepreneurship and new entrepreneurship of the groups of counties of 29 different states for 2000, 2007, and 2010.

2.6.3. Testing the Temporal and Geographic Robustness of the Proportionalities

Tests of the resistance to change of the different proportionalities involved either all 1785 counties or county groups from 29 states that have 20 or more representatives among the 1785 counties. The number 20 was chosen as the minimum number of counties to use in determinations of the relationships for geographic comparisons. Testing resistance to temporal change involved comparisons of proportionalities of all or groups of counties for the periods from 2000 to 2007 and 2007 to 2010. Testing resistance to geographic change involved comparisons of the proportionalities of the groups of counties from different U.S. states.

2.6.4. Total Entrepreneurship-Existing Entrepreneurship Relationships

Given a strong relationship between new entrepreneurship and total entrepreneurship, a strong relationship is expected between total entrepreneurship and existing entrepreneurship. Testing resistance to temporal or geographic change involved comparisons of pro-
portionalities for all 1785 counties or groups of them for the periods from 2000 to 2007 and 2007 to 2010.

3. Results

Two unique features are used in this contribution. Firstly, precisely the same 1785 counties are followed through the period from 2000 to 2010. The trends are, therefore, not interpreted in terms of a mixed bag of counties but are based on the same entities throughout. Secondly, the 1785 counties included in the study do not represent all U.S. counties, but only those counties with new entrepreneurship values between 30 and 250 (see Section 2.3). These are, therefore, smaller counties. In addition, the counties reported under the title of a specific U.S. state do not represent all the counties of that state, but only those with new entrepreneurship values between 30 and 250 (i.e., smaller counties).

3.1. The Overall Relationship between Population and Enterprise Numbers of the 1785 Counties

Two techniques were used to examine the relationship between the population and total enterprise numbers of the selected group of counties. Firstly, the total populations and total entrepreneurship were quantified and compared for 2000, 2007, and 2010. Secondly, log–log (power law) regressions were used to quantify the relationships for the same years.

3.1.1. Total Population and Total Entrepreneurship

The total population and total entrepreneurship numbers of the 1785 counties are presented in Table 1 for the years 2000, 2007, and 2010. The relationships between population numbers and enterprise numbers, a measure of the prosperity/poverty of communities, are also reflected. The total populations of the counties increased throughout the 2000 to 2010 period. In the 2000 to 2007 period, total entrepreneurship increased relatively faster than the populations and overall community prosperity increased (EDI decreased). During the recession from 2007 to 2010, the populations still increased, but the total entrepreneurship decreased and the poverty of the counties increased (higher EDI values). The recession had a definite negative impact. These results justified a basic premise of the study, i.e., that periods of strong economic growth or decline would enable an assessment of the robustness (resistance to change) of the enterprise proportionalities of U.S. counties.

Table 1. Population numbers and total entrepreneurship levels of the 1785 counties for 2000, 2007, and 2010. The year 2000 represents a year during a growth phase of the economy in the United States. The year 2007 represents the end of the growth phase and the onset of a recession. The year 2010 represents the impact of the recession after three years.

| Year | Total population | Total entrepreneurship | Persons/enterprise *
|------|------------------|------------------------|---------------------|
| 2000 | 27,897,900       | 587,832                | 47.5                |
| 2007 | 28,136,519       | 623,719                | 45.1                |
| 2010 | 28,741,293       | 580,301                | 49.5                |

* Persons/enterprise = Enterprise Dependency Index (EDI), a measure of community prosperity/poverty.

3.1.2. Power Law Analyses of Total Population Numbers and Total Entrepreneurship of the 1785 Counties

There was a statistically significant non-linear power law relationship with a sub-linear exponent between population numbers and total entrepreneurship of the 1785 counties in 2000 (Figure 2). Virtually identical relationships were also recorded for 2007 and 2010 (Table 2), indicating that the non-linear relationship between total entrepreneurship and population is very robust. Neither the economic growth period (2000 to 2007) nor the recession (2007 to 2010) had much of an impact on the properties of the power laws. The exponents and constants of the power laws remained virtually identical. Use of these power laws to predict total entrepreneurship values from different county population sizes for the three years showed that overall population numbers and entrepreneurship values increased during economic growth (2000 to 2007) and declined during the recession (2007
to 2010) (Table 3). The latter decline was more prominent in larger rather than smaller counties.

**Figure 2.** The power law relationship between county population numbers and total enterprise numbers in 2000.

**Table 2.** Power law relationships between the population numbers and total entrepreneurship of 1785 U.S. counties in 2000, 2007, and 2010.

|        | 2000     | 2007     | 2010     |
|--------|----------|----------|----------|
| Constant | 0.125    | 0.1385   | 0.1417   |
| Exponent | 0.8142   | 0.8088   | 0.7973   |
| Correlation coefficient | 0.87   | 0.86     | 0.86     |
| Variation explained (%) | 74.9   | 74.2     | 74.0     |

**Table 3.** Use of the equations in Table 2 to predict total entrepreneurship as a function of county populations in 2000, 2007, and 2010. Ratio = increase in total entrepreneurship upon a doubling of population numbers. Enterprises = total entrepreneurship. EDI = persons/entrepreneurship value.

| Population | Enterprises | Ratio | EDI | Enterprises | Ratio | EDI | Enterprises | Ratio | EDI |
|------------|-------------|-------|-----|-------------|-------|-----|-------------|-------|-----|
| 2000       | 61          | 1.76  | 32.8| 65          | 1.75  | 30.9| 61          | 1.74  | 32.9|
| 4000       | 107         | 1.76  | 37.4| 113         | 1.75  | 35.3| 106         | 1.74  | 37.9|
| 8000       | 188         | 1.76  | 42.5| 199         | 1.75  | 40.3| 183         | 1.74  | 43.6|
| 16,000     | 331         | 1.76  | 48.3| 348         | 1.75  | 46.0| 319         | 1.74  | 50.2|
| 32,000     | 582         | 1.76  | 55.0| 610         | 1.75  | 52.5| 554         | 1.74  | 57.8|
| 64,000     | 1024        | 1.76  | 62.5| 1056        | 1.75  | 59.9| 962         | 1.74  | 66.5|
| 128,000    | 1800        | 1.76  | 71.1| 1871        | 1.75  | 68.4| 1672        | 1.74  | 76.5|

The power laws (Table 2) also suggest that community prosperity (lower EDIs) is higher in smaller rather than larger members of the 1785 counties. Community poverty is higher (higher EDIs) in the larger members (Table 3). The range of EDIs as functions of county population size (Table 3) is much higher than the changes in EDIs induced by the growth or decline events. Although enterprise numbers are clearly associated with county population sizes (see Figure 2), the community prosperity/poverty values of counties are also significant determinants of the economic wellbeing of counties (see EDIs in Table 3). The following section considers the impacts of geographic location.

**3.2. Trends in Population and Enterprise Numbers of County Groups from Different U.S. States**

States with more than 20 counties in the group of 1785 counties were selected for further analyses. Twenty-nine U.S. states containing 1639 counties are represented (Table 4).
Table 4. The population and total entrepreneurship values in 2000, 2007, and 2010 of U.S. states with 20 or more counties among the selected group of 1785 counties. Growth phase = 2000 to 2007; The recession = 2007 to 2010; n = number of counties with new entrepreneurship values between 30 and 250. Data of the same counties was analyzed for 2000, 2007, and 2010.

| State          | n  | Populations 2000 | Populations 2007 | Populations 2010 | Total Entrepreneurship 2000 | Total Entrepreneurship 2007 | Total Entrepreneurship 2010 |
|----------------|----|------------------|------------------|------------------|-----------------------------|-----------------------------|-----------------------------|
| Alabama        | 37 | 794,975          | 770,143          | 773,701          | 14,543                       | 14,453                      | 12,983                      |
| Arkansas       | 55 | 915,508          | 893,197          | 892,648          | 18,391                       | 17,977                      | 16,592                      |
| Colorado       | 58 | 331,370          | 333,567          | 337,612          | 10,863                       | 12,480                      | 11,337                      |
| Florida        | 27 | 575,064          | 627,825          | 665,241          | 9208                         | 11,611                      | 10,525                      |
| Georgia        | 105| 1,704,942        | 1,805,938        | 1,864,160        | 30,083                       | 34,941                      | 30,963                      |
| Iowa           | 77 | 1,100,473        | 1,062,078        | 1,068,712        | 30,844                       | 31,010                      | 29,600                      |
| Idaho          | 31 | 351,130          | 369,886          | 389,418          | 8371                         | 10,643                      | 9370                        |
| Illinois       | 62 | 1,038,848        | 1,022,108        | 1,026,887        | 24,490                       | 24,234                      | 22,822                      |
| Indiana        | 45 | 933,019          | 920,261          | 932,631          | 19,144                       | 19,715                      | 18,148                      |
| Kansas         | 85 | 687,683          | 655,262          | 675,030          | 19,755                       | 19,575                      | 18,421                      |
| Kentucky       | 91 | 1,518,495        | 1,549,386        | 1,551,241        | 26,327                       | 27,042                      | 25,313                      |
| Louisiana      | 40 | 887,415          | 874,383          | 884,916          | 15,049                       | 15,871                      | 15,522                      |
| Michigan       | 31 | 517,007          | 507,531          | 499,295          | 13,489                       | 13,029                      | 11,716                      |
| Minnesota      | 53 | 778,896          | 768,750          | 778,939          | 21,334                       | 22,450                      | 21,265                      |
| Missouri       | 86 | 1,331,933        | 1,353,680        | 1,385,631        | 29,175                       | 31,035                      | 28,458                      |
| Mississippi    | 63 | 1,290,578        | 1,287,342        | 1,289,464        | 22,689                       | 23,564                      | 21,972                      |
| Montana        | 40 | 295,675          | 292,120          | 304,166          | 874                  | 9908                        | 9450                        |
| North Carolina | 42 | 932,588          | 973,460          | 1,024,279        | 17,867                       | 20,050                      | 17,997                      |
| North Dakota   | 42 | 243,909          | 224,765          | 233,281          | 7710                         | 7741                        | 7824                        |
| Nebraska       | 69 | 545,894          | 520,775          | 525,135          | 15,839                       | 16,211                      | 15,666                      |
| Ohio           | 26 | 733,596          | 735,348          | 746,391          | 13,199                       | 13,170                      | 11,914                      |
| Oklahoma       | 56 | 946,649          | 954,044          | 995,881          | 18,521                       | 20,089                      | 19,588                      |
| South Carolina | 22 | 562,578          | 547,465          | 557,068          | 9496                         | 9888                        | 8914                        |
| South Dakota   | 53 | 336,748          | 337,248          | 351,960          | 9784                         | 10,751                      | 10,504                      |
| Tennessee      | 63 | 1,398,059        | 1,443,023        | 1,470,634        | 22,074                       | 23,015                      | 20,941                      |
| Texas          | 167| 2,379,298        | 2,415,197        | 2,523,775        | 46,365                       | 48,451                      | 47,091                      |
| Virginia       | 58 | 997,832          | 1,045,369        | 1,055,067        | 20,757                       | 23,560                      | 21,106                      |
| Wisconsin      | 32 | 619,061          | 621,465          | 627,822          | 15,807                       | 16,718                      | 15,359                      |
| West Virginia  | 43 | 846,380          | 833,639          | 846,116          | 15,972                       | 15,731                      | 14,400                      |

3.2.1. Total Population and Total Entrepreneurship Values of Counties within States

During the economic growth phase (2000 to 2007), the combined population and total entrepreneurship dynamics of the groups were complex (Table 4). The population and total entrepreneurship of groups in six states (Alabama, Arkansas, Illinois, Kansas, Michigan, and West Virginia) decreased. In nine states (Kentucky, Missouri, North Carolina, Oklahoma, South Dakota, Tennessee, Texas, Virginia, and Wisconsin), these parameters increased. In the rest of the groups (Iowa, Indiana, Louisiana, Minnesota, Montana, North Dakota, Nebraska, Ohio, and South Carolina), there was a mixture: either their population numbers increased whilst their total entrepreneurship decreased or vice versa. During the recession (2007 to 2010), the dynamics changed totally. In 26 of the 29 groups, populations increased whilst total entrepreneurship decreased. In Arkansas and Michigan, both parameters decreased, whilst in North Dakota they increased. These dynamics during the economic growth phase and the recession support the contention that their demographic and entrepreneurial dynamics offer opportunities to investigate the robustness of the demographic and entrepreneurial proportionalities of the selected counties.
3.2.2. Population and Total Entrepreneurship Relationships of the Groups from Different U.S. States

Power law analyses were used to determine the population versus total entrepreneurship relationships of the county groups in 2000, 2007, and 2010 (Table 5). The correlations are all statistically significant ($p < 0.001$, as deduced from the variances explained by the power laws and presented in Table 5). The exponents of the power laws (Table 6) reveal several important points. Firstly, there are large differences between the exponents of the power laws for the different county groups. Some groups have super-linear (larger than unity) exponents (Alabama, Arkansas, Georgia, Illinois, Indiana, Kentucky, Mississippi, South Carolina, and Tennessee), while others have linear or near linear exponents (Florida, Iowa, Louisiana, Ohio, and West Virginia), and the rest have sub-linear (less than unity) exponents (Colorado, Florida, Idaho, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Carolina, North Dakota, Oklahoma, South Dakota, Texas, Virginia, and Wisconsin). The population–total entrepreneurship relationship of the groups, therefore, seems to be geographically sensitive. Secondly, the power law exponents of a county group from a specific state were not temporally sensitive. Neither a period of economic growth (2000 to 2007) nor a period of economic decline (2007 to 2010) affected them much (Table 6). Consequently, there seems to be a strong and enduring temporal robustness (resistance to change) in the population number–total entrepreneurship relationships. Thirdly, power laws deal with relationships between county populations and county enterprises. These are the two constituents of the EDI, a measure of the prosperity/poverty of communities. The impacts of the 2000 to 2010 period on community prosperity/poverty levels are considered in the next section.

Table 5. Percentage variance explained by log–log regressions (power laws) between population numbers and total entrepreneurship of the county groups of 29 U.S. states.

| State     | 2000  | 2007  | 2010  | State     | 2000  | 2007  | 2010  |
|-----------|-------|-------|-------|-----------|-------|-------|-------|
| Alabama   | 82.1  | 84.1  | 84.1  | Missouri  | 87.7  | 89.5  | 88.5  |
| Arkansas  | 81.6  | 79.9  | 79.5  | Montana   | 85.2  | 83.8  | 82.2  |
| Colorado  | 72.1  | 65.5  | 66.3  | Nebraska  | 88.9  | 88.5  | 88.1  |
| Florida   | 81.6  | 92.0  | 89.9  | North Dakota | 71.0  | 71.5  | 74.7  |
| Georgia   | 71.9  | 72.9  | 75.1  | North Carolina | 86.7  | 87.0  | 86.3  |
| Iowa      | 79.3  | 74.6  | 73.4  | Ohio      | 76.0  | 75.8  | 72.0  |
| Idaho     | 66.9  | 66.8  | 74.5  | Oklahoma  | 78.2  | 77.5  | 75.3  |
| Illinois  | 91.6  | 91.4  | 91.8  | South Carolina | 87.1  | 84.3  | 87.2  |
| Indiana   | 82.8  | 84.5  | 84.7  | South Dakota | 83.9  | 89.9  | 91.7  |
| Kansas    | 88.9  | 88.2  | 88.2  | Tennessee  | 87.2  | 88.3  | 88.6  |
| Kentucky  | 81.3  | 82.9  | 84.3  | Texas     | 80.8  | 82.7  | 83.2  |
| Louisiana | 80.8  | 86.1  | 85.3  | Virginia  | 82.3  | 78.5  | 78.6  |
| Michigan  | 74.2  | 74.2  | 73.9  | Wisconsin | 72.9  | 66.1  | 67.4  |
| Minnesota | 89.7  | 91.5  | 90.2  | West Virginia | 84.1  | 85.5  | 84.3  |
| Mississippi | 87.1 | 86.9  | 88.5  |           |       |       |       |

Table 6. Power law exponents of the regressions between the population numbers and total entrepreneurship of groups of counties in 29 U.S. states.

| State     | 2000  | 2007  | 2010  | State     | 2000  | 2007  | 2010  |
|-----------|-------|-------|-------|-----------|-------|-------|-------|
| Alabama   | 1.2857| 1.2892| 1.2624| Missouri  | 0.9573| 0.9563| 0.9309|
| Arkansas  | 1.1971| 1.1823| 1.1628| Montana   | 0.9060| 0.8980| 0.8917|
| Colorado  | 0.8542| 0.8815| 0.8490| Nebraska  | 0.9320| 0.9294| 0.9467|
| Florida   | 0.9102| 1.0039| 1.0091| North Carolina | 0.8610| 0.8790| 0.8733|
| Georgia   | 1.0621| 1.1026| 1.1123| North Dakota | 0.8781| 0.8980| 0.8565|
| Iowa      | 0.9995| 0.9885| 0.9760| Ohio      | 1.0587| 1.0373| 1.0475|
Table 6. Cont.

| State          | 2000   | 2007   | 2010   | State          | 2000   | 2007   | 2010   |
|---------------|--------|--------|--------|---------------|--------|--------|--------|
| Idaho         | 0.8625 | 0.8595 | 0.8668 | Oklahoma      | 0.8294 | 0.8630 | 0.8797 |
| Illinois      | 1.1337 | 1.1420 | 1.1451 | South Carolina| 1.1123 | 1.1511 | 1.1644 |
| Indiana       | 1.1633 | 1.1508 | 1.1511 | South Dakota  | 0.9193 | 0.9005 | 0.8787 |
| Kansas        | 0.8453 | 0.8134 | 0.7858 | Tennessee     | 1.1090 | 1.0822 | 1.0897 |
| Kentucky      | 1.1644 | 1.1657 | 1.1712 | Texas         | 0.8285 | 0.8364 | 0.8558 |
| Louisiana     | 0.9730 | 0.9548 | 0.9424 | Virginia      | 0.9190 | 0.9197 | 0.9461 |
| Michigan      | 0.8659 | 0.8749 | 0.8677 | Wisconsin     | 0.8959 | 0.8428 | 0.7959 |
| Minnesota     | 0.8546 | 0.8640 | 0.8265 | West Virginia | 1.0264 | 0.9966 | 1.0237 |
| Mississippi   | 1.1804 | 1.2082 | 1.1677 |              |        |        |        |

3.2.3. Community Prosperity/Poverty of All or Groups of Counties

The enterprise dependency index (EDI), which is a measure of community prosperity/poverty, is the relationship between the number of people and total entrepreneurship in a human settlement. Power laws (Tables 5 and 6) relate population size and total entrepreneurship to one another and can be used to determine how prosperity/poverty levels change in response to changes in the population sizes of the counties. Three examples are used to illustrate these analyses (Table 7). The exponents of the power laws of Alabama were greater than 1.25 in all three years (Table 6). Alabama serves as an example of the EDI dynamics of counties with super-linear exponents during the economic growth and recession phases. The exponents of the power laws of Iowa were close in unity in all three years (Table 6). Iowa serves as an example of the EDI dynamics of groupings with linear exponents. The exponents of the power laws of Oklahoma were sub-linear and approximately 0.85 in all three years. Oklahoma serves as an example of the EDI dynamics of groupings with sub-linear exponents.

Table 7. Examples of the 2000, 2007, and 2010 dynamics of the enterprise dependency indices of county groupings with power laws with super-linear, linear, or sub-linear exponents.

| Example          | Population | 2000 | 2007 | 2010 |
|------------------|------------|------|------|------|
|                  | Enterprises | EDI  | Enterprises | EDI  | Enterprises | EDI  |
| Alabama (super-linear) | 8000      | 104   | 76.7  | 108   | 74.3  | 101   | 78.8 |
|                  |            |       |       |      |       |       |      |
|                  |            | 16,000| 254   | 62.9  | 263   | 60.8  | 243   | 65.7 |
|                  |            | 32,000| 620   | 51.6  | 643   | 49.8  | 584   | 54.8 |
|                  |            | 64,000| 1511  | 42.4  | 1571  | 40.7  | 1401  | 45.7 |
| Iowa (linear)    |            |       |       |      |       |       |      |
|                  | 8000       | 222   | 36.0  | 232   | 34.4  | 222   | 36.0 |
|                  |            |       |       |      |       |       |      |
|                  | 16,000     | 444   | 36.0  | 461   | 34.7  | 438   | 36.6 |
|                  |            |       |       |      |       |       |      |
|                  | 32,000     | 888   | 36.0  | 915   | 35.0  | 861   | 37.2 |
|                  |            |       |       |      |       |       |      |
|                  | 64,000     | 1776  | 36.0  | 1815  | 35.3  | 1693  | 37.8 |
| Oklahoma (sub-linear) | 8000      | 178   | 44.9  | 186   | 43.0  | 171   | 46.7 |
|                  |            |       |       |      |       |       |      |
|                  | 16,000     | 317   | 50.5  | 338   | 47.3  | 315   | 50.8 |
|                  |            |       |       |      |       |       |      |
|                  | 32,000     | 563   | 56.8  | 615   | 52.0  | 580   | 55.2 |
|                  |            |       |       |      |       |       |      |
|                  | 64,000     | 1001  | 63.9  | 1119  | 57.2  | 1067  | 60.0 |

Three broad issues emerge from Table 7. Firstly, the variation in EDIs of the county groups from Alabama (super-linear power law exponent) and Oklahoma (sub-linear power law exponent) is larger across population levels than across years. Population levels appear to have a greater association with community prosperity/poverty dynamics than phases of economic growth or decline. Secondly, in all of the examples, and at every population level, EDIs decreased somewhat during the growth phase (2000 to 2007), i.e., all communities became more prosperous. During the recession, however, all communities became poorer (their EDIs increased). Thirdly, in human settlements with power laws with super-linear exponents, poverty levels are predicted to decrease from small to large
settlements. Communities in smaller settlements are predicted to be poorer (have higher EDIs) than communities in larger settlements. In human settlements with power laws with sub-linear exponents, poverty (EDI) should increase from large to small settlements. In this group, communities in smaller settlements are more prosperous (have lower EDIs) than larger communities. In human settlements with power laws with linear exponents, EDIs are similar across all population levels. In this group, communities in smaller settlements are equally prosperous or poor compared to communities in larger communities.

3.3. Relationships between New Entrepreneurship and Total Entrepreneurship of All or Selected Groups of Counties

3.3.1. Relationships between Total Entrepreneurship and New Entrepreneurship of the 1785 Counties

In 2000, there was a statistically significant ($p < 0.001$) non-linear power law relationship with a sub-linear exponent between total entrepreneurship and new entrepreneurship of the 1785 counties (Figure 3). Virtually identical relationships were also recorded for 2007 and 2010 (Table 8). The relationships were temporally robust.

![Figure 3. The power law relationship between total entrepreneurship and new entrepreneurship in 1785 U.S. counties in 2000.](image)

|                | 2000  | 2007  | 2010  |
|----------------|-------|-------|-------|
| Constant       | 2.824 | 2.791 | 2.687 |
| Exponent       | 0.6777| 0.6799| 0.687 |
| Correlation coefficient | 0.98 | 0.98 | 0.98 |
| Variation explained (%) | 96.5 | 96.7 | 96.7 |

Graphs similar to Figure 1 enabled the calculation of total enterprise numbers, where new entrepreneurship equals total entrepreneurship in the counties in the different years. These results were virtually the same: 215 total enterprises in 2000, 215 in 2007, and 211 in 2010. All of these results indicate that the non-linear relationship between total entrepreneurship and new entrepreneurship of the 1785 counties is temporally robust. Neither the economic growth period (2000 to 2007) nor the recession (2007 to 2010) had any significant impact. If this is true for all of the selected counties, is it also true for counties in different geographic locations?
3.3.2. Total and New Entrepreneurship of County Groups of Different U.S. States

Power law analyses were used to determine the relationships between new entrepreneurship and total entrepreneurship of the different county groups (described in Table 5) in 2000, 2007, and 2010. To test the temporal and geographic impacts on the power law parameters, some characteristics of these power laws are compared in Table 9. The temporal impacts of the economic growth period (2000 to 2007) and the recession (2007 to 2010) were very limited in all cases. For instance, the maximum difference between two years of the exponents of a county group of a specific state was 0.053 (Idaho group in 2000 versus 2007). The differences of the power law exponents between county groups of different states were more pronounced. For instance, in 2000 the difference between the power law exponents of Ohio and Montana was 0.127, which was more than double that of the temporal difference. Nevertheless, even the impact of different geographic locations on the new entrepreneurship–total entrepreneurship relationship appears to be limited. These relationships were robust overall.

Table 9. Power law characteristics in 2000, 2007, and 2010 of the new entrepreneurship–total entrepreneurship relationships of county groups of different U.S. states.

| States       | Power Law Exponents Where New = Total Entrepreneurship * | Doubling Percentage ** |
|--------------|----------------------------------------------------------|------------------------|
|              | 2000  | 2007  | 2010  | 2000  | 2007  | 2010  | 2000  | 2007  | 2010  |
| Alabama      | 0.6287 | 0.6320 | 0.6541 | 209   | 210   | 196   | 55    | 55    | 57    |
| Arkansas     | 0.6718 | 0.7124 | 0.7290 | 226   | 222   | 214   | 59    | 64    | 64    |
| Colorado     | 0.7034 | 0.6628 | 0.6672 | 203   | 202   | 202   | 63    | 58    | 59    |
| Florida      | 0.6851 | 0.6475 | 0.6630 | 239   | 244   | 241   | 61    | 57    | 58    |
| Georgia      | 0.6888 | 0.6725 | 0.7022 | 238   | 229   | 225   | 61    | 60    | 63    |
| Iowa         | 0.6406 | 0.6375 | 0.6362 | 221   | 233   | 228   | 56    | 56    | 55    |
| Idaho        | 0.6943 | 0.6409 | 0.6678 | 235   | 238   | 243   | 62    | 56    | 59    |
| Illinois     | 0.6403 | 0.6687 | 0.6729 | 218   | 210   | 202   | 56    | 59    | 59    |
| Indiana      | 0.6620 | 0.6512 | 0.6610 | 240   | 258   | 254   | 58    | 57    | 58    |
| Kansas       | 0.6928 | 0.7089 | 0.7085 | 233   | 232   | 230   | 62    | 63    | 63    |
| Kentucky     | 0.6818 | 0.6935 | 0.6996 | 218   | 223   | 213   | 60    | 62    | 62    |
| Louisiana    | 0.6345 | 0.6427 | 0.6522 | 218   | 221   | 204   | 55    | 56    | 57    |
| Michigan     | 0.7029 | 0.6938 | 0.7080 | 183   | 210   | 203   | 63    | 62    | 63    |
| Minnesota    | 0.6420 | 0.6495 | 0.6503 | 226   | 232   | 227   | 56    | 57    | 57    |
| Mississippi  | 0.6859 | 0.6933 | 0.6967 | 200   | 193   | 184   | 61    | 62    | 62    |
| Missouri     | 0.6852 | 0.6773 | 0.6749 | 229   | 230   | 230   | 61    | 60    | 60    |
| Montana      | 0.7312 | 0.7015 | 0.7101 | 250   | 250   | 236   | 66    | 63    | 64    |
| Nebraska     | 0.7091 | 0.7196 | 0.7078 | 202   | 212   | 201   | 63    | 65    | 65    |
| North Carolina | 0.6644 | 0.6402 | 0.6544 | 208   | 222   | 220   | 58    | 56    | 57    |
| North Dakota | 0.7009 | 0.6970 | 0.6764 | 206   | 210   | 204   | 63    | 62    | 60    |
| Ohio         | 0.6044 | 0.6083 | 0.6222 | 252   | 262   | 209   | 52    | 52    | 54    |
| Oklahoma     | 0.6511 | 0.6634 | 0.6565 | 218   | 208   | 199   | 57    | 58    | 58    |
| South Carolina | 0.6049 | 0.6448 | 0.6239 | 240   | 222   | 234   | 52    | 56    | 54    |
| South Dakota | 0.7122 | 0.7205 | 0.7043 | 232   | 219   | 226   | 64    | 65    | 63    |
| Tennessee    | 0.6715 | 0.6760 | 0.6920 | 232   | 224   | 218   | 59    | 60    | 62    |
| Texas        | 0.6883 | 0.7000 | 0.7084 | 217   | 213   | 201   | 61    | 62    | 63    |
| Virginia     | 0.6599 | 0.6474 | 0.6570 | 204   | 212   | 217   | 58    | 57    | 58    |
| Wisconsin    | 0.6158 | 0.6232 | 0.6439 | 232   | 228   | 222   | 53    | 54    | 56    |
| West Virginia | 0.6368 | 0.6576 | 0.6675 | 202   | 189   | 187   | 55    | 58    | 59    |

* Enterprise number where total entrepreneurship equals new entrepreneurship. ** Percentage increase of new entrepreneurship when total entrepreneurship doubles.
3.4. The Relationship between Existing Entrepreneurship and Total Entrepreneurship of U.S. Counties

3.4.1. Relationships between Total Entrepreneurship and Existing Entrepreneurship in 1785 U.S. Counties

In 2000, there was a statistically significant ($p < 0.001$) power law relationship with a super-linear exponent between the total entrepreneurship and existing entrepreneurship of the 1785 counties (Figure 4). Virtually identical relationships were also recorded for 2007 and 2010 (Table 10). Neither economic growth during 2000 to 2007 nor economic decline during the recession (2007 to 2010) had any significant impact on this relationship; it is temporally robust.

![Figure 4. The power law relationship between total entrepreneurship and existing entrepreneurship of 1785 U.S. counties in 2000.](image)

Table 10. Power law relationships between total entrepreneurship and existing entrepreneurship of 1785 U.S. counties in 2000, 2007, and 2010.

|       | 2000     | 2007     | 2010     |
|-------|----------|----------|----------|
| Constant | 0.0723   | 0.0769   | 0.0762   |
| Exponent | 1.3475   | 1.3358   | 1.339    |
| Correlation coefficient | 0.99     | 0.99     | 0.99     |
| Variation explained (%) | 99.4     | 99.5     | 99.4     |

3.4.2. Total and Existing Entrepreneurship of County Groups from Different U.S. States

Power law analyses were used to determine the relationships between the existing entrepreneurship and total entrepreneurship of the different county groups (described in Table 5) in 2000, 2007, and 2010. To test the temporal and geographic impacts on the power laws, some characteristics of these power laws are compared in Table 11. Although the relationships for the group of counties of a specific state are very similar in 2000, 2007, and 2010, there are some small differences between states, suggesting a slight influence of geographic location. However, these differences are small, and the relationships appear to be quite robust (resistant to change).
Table 11. Power law characteristics in 2000, 2007, and 2010 for the existing entrepreneurship–total entrepreneurship relationships of county groups in different U.S. states.

| Groups         | Power Law Constants |       | Power Law Constants |       |
|----------------|---------------------|-------|---------------------|-------|
|                | 2000    | 2007    | 2010    | 2000    | 2007    | 2010    |
|                | 0.0980  | 0.0911  | 0.0969  | 1.3001  | 1.3119  | 1.3040  |
| Alabama        | 0.0925  | 0.1021  | 0.1186  | 1.3055  | 1.2875  | 1.2631  |
| Arkansas       | 0.0732  | 0.0560  | 0.0543  | 1.3444  | 1.3858  | 1.3936  |
| Colorado       | 0.0816  | 0.0257  | 0.0270  | 1.3877  | 1.3641  | 1.3471  |
| Florida        | 0.1023  | 0.0940  | 0.0914  | 1.2910  | 1.3029  | 1.3088  |
| Georgia        | 0.0889  | 0.0531  | 0.0519  | 1.3890  | 1.3967  | 1.4015  |
| Iowa           | 0.0737  | 0.1008  | 0.0970  | 1.3442  | 1.2917  | 1.2998  |
| Idaho          | 0.0704  | 0.0753  | 0.0789  | 1.3472  | 1.3331  | 1.3264  |
| Illinois       | 0.0545  | 0.0641  | 0.0650  | 1.3980  | 1.3688  | 1.3677  |
| Indiana        | 0.0817  | 0.0850  | 0.0866  | 1.3280  | 1.3192  | 1.3182  |
| Iowa           | 0.0853  | 0.0952  | 0.1049  | 1.3216  | 1.3017  | 1.2881  |
| Kansas         | 0.1579  | 0.1231  | 0.1218  | 1.2210  | 1.2581  | 1.2610  |
| Kentucky       | 0.1002  | 0.0914  | 0.0936  | 1.2928  | 1.3059  | 1.3035  |
| Louisiana      | 0.0854  | 0.1205  | 0.1262  | 1.2868  | 1.2643  | 1.2583  |
| Michigan       | 0.0545  | 0.0932  | 0.0781  | 1.3085  | 1.3014  | 1.3326  |
| Minnesota      | 0.1087  | 0.0502  | 0.0592  | 1.3626  | 1.3976  | 1.3821  |
| Mississippi    | 0.0316  | 0.0736  | 0.0731  | 1.3329  | 1.3417  | 1.3524  |
| North Carolina | 0.1059  | 0.1074  | 0.0927  | 1.2844  | 1.2881  | 1.3047  |
| North Dakota   | 0.0892  | 0.0615  | 0.0473  | 1.3620  | 1.3382  | 1.4331  |
| Ohio           | 0.0935  | 0.0866  | 0.0792  | 1.3016  | 1.3119  | 1.3277  |
| Oklahoma       | 0.0747  | 0.0924  | 0.0820  | 1.3420  | 1.3060  | 1.3285  |
| South Carolina | 0.0828  | 0.1030  | 0.0671  | 1.3241  | 1.2886  | 1.3592  |
| South Dakota   | 0.0433  | 0.0691  | 0.0564  | 1.4414  | 1.3556  | 1.3900  |
| Tennessee      | 0.0643  | 0.0699  | 0.0770  | 1.3635  | 1.3505  | 1.3357  |
| Texas          | 0.0567  | 0.0629  | 0.0702  | 1.3903  | 1.3716  | 1.3552  |
| Virginia       | 0.0836  | 0.0825  | 0.0747  | 1.3269  | 1.3264  | 1.3426  |
| Wisconsin      | 0.0930  | 0.1211  | 0.1190  | 1.3050  | 1.2622  | 1.2651  |
| West Virginia  | 0.0848  | 0.1061  | 0.1027  | 1.3250  | 1.2891  | 1.2948  |

4. Discussion

Global urbanization is a significant challenge to mankind [1]. Its successful handling over the long-term requires knowledge of the behavior of highly complex systems [3] such as the demographic–socioeconomic–entrepreneurial domain of human settlements [2]. Scaling studies have contributed a lot of information in studies of human settlements [3] and were also useful in this study.

Entrepreneurship remains a topic that attracts research attention. Recent studies focused on the business models of a subset of “blue” entrepreneurs focused on marine plastic pollution mitigation [52] and on investigating how innovation promotes digital start-up performance in China [53]. The business model innovation architecture was disassembled into three elements, value proposition, value creation, and value capture, to assess their roles [53]. A psychoanalytic approach was used to investigate the entrepreneurial process of how individuals form ideas for new venture creation [54]. A study of the role of the entrepreneurial orientation of Kenyan farmers as reflected in their innovativeness, proactiveness, and risk-taking was also undertaken [55]. These studies focused on the attitudes of individuals (i.e., entrepreneurs) [54,55] or aspects of the business models they use [52,53]. In contrast, this contribution has focused on the physical manifestation of entrepreneurship, i.e., enterprises linked to different entrepreneurial types.

It was kept in mind that entrepreneurship is an elusive concept, but that it can be measured in terms of outputs [27]. Therefore, the number and types of enterprises present in U.S. counties were quantified. The related entrepreneurship entities are total entrepreneurship (the maximum number of enterprises that can be carried in a county), new entrepreneurship
(the number of different enterprise types in a county economy), and existing entrepreneurship (the difference between total and new entrepreneurship). This was a useful strategy.

Many questions have been raised about the reasons for and implications of entrepreneurially-linked proportionalities in human settlements [10,11,33,35]. For instance, what is the reason that such proportionalities are present in human settlements when their populations extend over many orders of magnitude and when they are geographically widely spread? Why is there such a strong relationship between total enterprise numbers (total entrepreneurship) and the number of enterprise types? The latter relationship might be linked to the idea that entrepreneurial spaces control the total number of enterprises that can be ‘carried’ in specific human settlements [11].

Increased financial instability in many countries led to the stress testing of financial systems to quantify their vulnerabilities [56]. This contribution tested a hypothesis that the entrepreneurially-linked proportionalities of U.S. counties are temporally and geographically robust. The techniques used here to quantify the entrepreneurially-linked proportionalities during periods of economic growth and decline and for different geographic locations basically constituted stress testing of the proportionalities under vastly different economic and geographic conditions. This was a useful strategy, and the following was recorded.

The presence of orderliness in the demographic–socioeconomic–entrepreneurial domain of human settlements [1–10] was reconfirmed. This study focused on smaller U.S. counties in order to include sensible measurements of new entrepreneurship in the analysis. The 1785 selected counties (Appendix A) housed about 28 million people (Table 1), a sizeable portion of the U.S. population. County population numbers increased throughout the study period (2000 to 2010), but total enterprise numbers (total entrepreneurship) did not. Total enterprise numbers increased during the economic growth period but declined during the recession (Table 1). Overall, the period of economic growth (2000 to 2007) led to an increase in community prosperity and the recession (2007 to 2010) led to a decrease (Table 1).

Close to linear relationships between population and enterprise numbers were reported for U.S. metropolitan statistical areas [9] and Texas counties [12]. In this study, however, total enterprise numbers (total entrepreneurship) in the selected 1785 U.S. counties, representing smaller counties, were sub-linearly related (power law exponents about 0.8) to their population numbers in the 2000 to 2010 period (Table 2). These sub-linear relationships might reflect an inherent characteristic of smaller counties, i.e., smaller counties have proportionately more enterprises in relation to their population sizes than larger counties. In other words, counties with smaller populations tend to have more prosperous communities than counties with larger populations (Table 3). The relationships between county population and enterprise numbers are temporally robust.

An examination of the dynamics of population and total enterprise numbers of groups of counties from different states reflected a much more complex situation (Table 4). During the economic growth period (2000 to 2007), the populations and total enterprises of some states increased in step. In others, they decreased in step, and in some there were mixed dynamics. In contrast, during the recession (2007 to 2010), populations kept on increasing in virtually all of the county groups while enterprise numbers decreased. In general, communities could not carry as many enterprises during the recession (communities became poorer) and their entrepreneurial spaces decreased.

The power law relationships between the population numbers and total entrepreneurship of counties from different states revealed several important issues. Firstly, all of the power law relationships are statistically significant ($p = 0.01$) (Table 5). In general, counties with larger populations have proportionally more total entrepreneurship. This is in step with previous research results [7,11,12,33,51]. Secondly, the power law exponents of the counties from a specific state tended to be temporally stable (Table 6). Conditions of economic growth or decline did not influence the exponents of the total entrepreneurship–total population relationships of individual county groups much, which is a finding reported
here for the first time. Thirdly, there are distinct differences between the power law exponents of different county groups. Some are super-linear, some are linear, and some are sub-linear (Table 6). These differences are probably linked to the prosperity/poverty statuses of the county groups (Table 7), but this is an issue that deserves further investigation [31].

Innovation and entrepreneurship are undeniably interrelated [24,57]. To assess the potential for innovation and entrepreneurship of European Union countries and regions, Ref. [24] used extensive databases and a complex multivariate analysis entailing clustering, and Ref. [57] used a complex matrix system. In contrast, this study quantified different entrepreneurial types with simple power law regression analyses. The power law relationships between total entrepreneurship and new entrepreneurship of the 1785 counties during the 2000 to 2010 period have sub-linear exponents (Table 8). These relationships were temporally stable during the economic growth and decline periods. For the county groups of the different states, the relationships were also temporally and geographically stable (Table 9). Economic or geographic stress factors, therefore, did not alter the proportional relationships between total entrepreneurship and new or existing entrepreneurship. Total entrepreneurship is only partially per capita dependent and new and existing entrepreneurship even less so. The per capita links of the different forms of entrepreneurship deserve to be studied further.

The similarity of the power law exponents of the total entrepreneurship–new entrepreneurship relationships in human settlements is remarkable. In South African towns, the exponents range from 0.67 to 0.71 [35,45]. In a group of small U.S. counties, the range is from 0.68 to 0.70 [11]. In Texas counties, it is 0.68 [12]), and in Alabama counties it is 0.61 [58]. In this study, the range is 0.60 to 0.73 (Tables 8 and 9). Despite the fact that two different enterprise classification systems were used in South Africa and the U.S., the magnitude of the exponents are very similar, and they appear to be temporally and geographically robust. This suggests that the total entrepreneurship–new entrepreneurship relationship might be universally applicable.

The relationship between total entrepreneurship and existing entrepreneurship is finally considered. The exponents of the power laws describing this relationship for the 1785 counties are super-linear and range from 1.34 to 1.35 (Table 9), which is almost identical to an exponent of 1.35 that had been recorded for Texas counties [12]. The relationship is undoubtedly temporally stable during economic growth and decline phases (Table 9). Power laws also describe the same relationships of county groups of the different U.S. states (Table 10). Their exponents vary between 1.26 and 1.39, which are very similar to that recorded for the 1785 counties (Table 10). The relationship between total entrepreneurship and existing entrepreneurship is also geographically stable (Table 11).

What does the non-linear and strong association of new entrepreneurship and existing entrepreneurship with total entrepreneurship signify? New entrepreneurship is a measure of the capacity of some members of a community to identify and successfully start enterprises of types not yet present. Given that the function of entrepreneurs is to exploit inventions or untried technological possibilities to produce new commodities or produce old ones in new ways [21,22], new entrepreneurship is a crucial measure of the innovative capacity of communities. Two aspects of this contribution are especially important: (1) The creative use of the power laws recorded in Table 9 provide the means to estimate the total enterprise numbers at which new and existing county entrepreneurship equaled one another in the 2000 to 2010 period. Furthermore, there was surprising robustness with 215 total enterprises in 2000, 215 in 2007, and 211 in 2010. Counties with fewer than approximately 215 enterprises are more dependent on new entrepreneurship than counties with more than 215 enterprises. This illustrates that smaller human settlements have a significant challenge, i.e., to raise, find, or attract creative persons (new entrepreneurs) who can identify and successfully start businesses of types that are not present in the settlement (see more on this topic later). (2) New entrepreneurship remains important in all counties, even in very large ones where new entrepreneurship usually constitutes some
10 to 20 percent of total entrepreneurship (Figure 1). Economic development strategies do not generally focus on this aspect.

Total entrepreneurship and new entrepreneurship are also closely related (Figure 3). There is also some spread of data points around the line-of-best-fit in Figure 3. For instance, at a new entrepreneurship level of 100, county total entrepreneurship varied from 167 to 240. New entrepreneurship is, therefore, not solely impacted by total entrepreneurship. One or more other factors also play a role. These factors must still be identified. The relationship between total entrepreneurship and existing entrepreneurship similarly exhibits some variation around the line-of-best-fit (Figure 4). This is especially true for smaller counties. For instance, at an existing entrepreneurship level of 21 to 23, total entrepreneurship varied from 59 to 81, which is a large spread. Existing entrepreneurship is, therefore, also not solely impacted by total entrepreneurship. One or more additional factors play a role, and these must still be identified.

In this regard, the traded and non-traded economic sectors are of interest. The vast majority of jobs in local economies are in the non-tradable sector [46,47]. The enterprises of this sector offer services that are produced and consumed locally. The same market is served by existing entrepreneurship. However, entrepreneurship in the tradable economic sector, which is the main driver of prosperity in U.S. communities [46,47], is not identical to new entrepreneurship [51]. It follows that existing entrepreneurship, which also serves local economies, cannot be identical to entrepreneurship in the non-tradable sector. There is a logarithmic relationship between new and existing entrepreneurship and in U.S. counties [11]. When local economies expand, existing entrepreneurship increases much more rapidly than new entrepreneurship (Figure 1). New entrepreneurship is, consequently, proportionally more important in smaller counties than existing entrepreneurship in larger counties. This resonates with the view that the non-tradable sector is responsible for the vast majority of jobs in local economies [46,47]. Deeper insight gained here demonstrates the dynamics of existing entrepreneurship and add to the quantitative understanding of how different elements of entrepreneurship act as drivers of events in human settlements. This process should be continued.

The hypothesis tested in this study is that the entrepreneurially-linked proportionals of human settlements are not temporally or geographically sensitive. The results indicate that this is true for the relationships of new and existing entrepreneurship, but not for those of total entrepreneurship. The latter relationships might be influenced by different levels of prosperity/poverty in human communities, and this has raised the need to think about the concept of entrepreneurial space [11], which is defined as a combination of the population size of a human settlement and the population’s ability to buy goods.

The temporal robustness of all three proportionals as well as the geographic robustness of new and existing entrepreneurship (determined by analyzing data of a large number of U.S. counties) inevitably led to a conclusion that there could not have been shortages of entrepreneurs in the large number of counties studied here. If there were shortages, there should have been much more patchiness in the enterprise numbers of the counties and such strong and statistically significant power law regressions would not have been observed.

Empirical data are often important in urbanization studies because it is impossible to perform experiments with human settlements. This was also the case in this contribution. Krugman [59] remarked about an agglomeration phenomenon of people in cities (Zipf’s law) that a striking empirical regularity was detected with no good theory to account for it. The entrepreneurial regularities observed here also suffer from the same malady. There is still a lack of a theory to account for them. However, a fuller understanding of the concept of entrepreneurial spaces could be helpful.

Finally, there is an enigma to consider. The existence of the extensive entrepreneurial proportionals observed here indicates temporal and geographic entrepreneurial constancy (stasis) in the economic systems of the counties studied here. How does one reconcile such stasis with Schumpeter’s process of creative destruction [25,26]? Schumpeter referred
to ongoing change in the form of ‘industrial mutation’ that incessantly destroys the old economic system and creates a new one [25]. Yet, proportionalities that equate with stasis have been observed. An examination of the enigma of stasis and change in the entrepreneurial domain of human settlements should receive research attention.

5. Conclusions

This study was dependent on the use of empirical data. However, large publicly available datasets about U.S. counties enabled for a strategy to use information from different years in order to obtain comparable data.

The division of total entrepreneurship into new entrepreneurship and existing entrepreneurship yielded useful information. This is an unusual practice in entrepreneurship research.

The presence of orderliness in the demographic–socioeconomic–entrepreneurial domain of U.S. counties was reconfirmed in a number of different ways and indicated that:

1. In the 2000 to 2010 period, the total entrepreneurship of a large number of U.S. counties or groups of counties from different U.S. states was sub-linearly related to their population numbers,
2. the new entrepreneurship of these counties or groups of counties from different U.S. states was sub-linearly related to their total entrepreneurship, and
3. the existing entrepreneurship of the counties or groups of counties from different U.S. states was super-linearly related to their total entrepreneurship.

Stress testing of the entrepreneurially-linked proportionalities of U.S. counties during a period of economic growth (2000 to 2007) followed by a recession (2007 to 2010) proved to be a useful technique. Principally, it indicated that:

1. The relationships of new entrepreneurship and existing entrepreneurship with the total entrepreneurship of all counties or groups of counties are temporally and geographically robust. Neither economic growth nor economic decline influenced the properties of the relationships.
2. The properties of the relationship between population numbers and total enterprise numbers are temporally robust but not geographically robust. The detected robustness should be taken into account in economic development planning.

Differences in community prosperity/poverty levels apparently caused the lack of geographic robustness. Entrepreneurial space (the total number of enterprises that can be ‘carried’ in a specific human settlement) is apparently determined by how many people are present in a community and their financial ability to procure goods or services from enterprises. This issue deserves further elucidation.

The temporal robustness of all three proportionalities as well as the geographic robustness of new and existing entrepreneurship provide little evidence of patchiness in the entrepreneurial orderliness of the counties. This indicates there was no lack of entrepreneurs in the counties because all entrepreneurial spaces were occupied.

The presence of extensive entrepreneurial proportionalities in the counties indicates temporal and geographic entrepreneurial stasis in their economic systems. Reconciliation of the idea of stasis with the Schumpeterian idea of creative destruction in economies [26] is a significant challenge that should be resolved.

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Appendix A

Table A1. The counties used in this study.

| County    | State | County | State | County | State | County | State |
|-----------|-------|--------|-------|--------|-------|--------|-------|
| Abbeville | SC    | Audrain| MO    | Blaine | OK    | Burke  | ND    |
| Acomack   | VA    | Audubon| IA    | Blanton| TX    | Burleson| TX    |
| Adair     | MO    | Aurora | SD    | Bland  | VA    | Burnett| WI    |
| Adair     | OK    | Austin | TX    | Beckley| GA    | Burt   | NE    |
| Adair     | IA    | Avery  | NC    | Bledsoe| TN    | Butler | AL    |
| Adair     | KY    | Avery  | LA    | Boise  | ID    | Butler | NE    |
| Adams     | ID    | Bacon  | GA    | Bolivar| MS    | Butler | IA    |
| Adams     | ND    | Bailey  | TX    | Bollinger| MO  | Butler  | KY    |
| Adams     | OH    | Baker  | FL    | Bon Homme| SD  | Butte   | ID    |
| Adams     | WA    | Baker  | OR    | Bond   | IL    | Butte  | SD    |
| Adams     | IA    | Ballard| KY    | Boone  | NE    | Butts  | GA    |
| Adams     | SC    | Bamberg| Boone | WY    | Caddo | OK    |       |
| Aitkin     | MN    | Bandera| TX    | Boone  | IA    | Caldwell| LA    |
| Alcona    | MI    | Banks  | GA    | Bosque | TX    | Caldwell| MO    |
| Aleutians  | AK    | Baraga | MI    | Botetourt| VA  | Caldwell| TX    |
| West      | IL    | Barber | KS    | Bottineau| ND  | Caldwell| KY    |
| Alexander  | NC    | Barbour| AL    | Boundary| ID  | Calhoun| AR    |
| Alexander  | OK    | Barbour| WV    | Bourbon | KS  | Calhoun| FL    |
| Algiers    | MI    | Barnes | ND    | Bourbon | KY  | Calhoun| GA    |
| Allamakee  | IA    | Barnwell| SC    | Bowman | ND  | Calhoun| IL    |
| Alleghany  | NC    | Barton | MO    | Box Butte| NE  | Calhoun| MS    |
| Allen     | LA    | Bates  | MO    | Box Elder| UT  | Calhoun| SC    |
| Allen     | KS    | Bath   | VA    | Boyd   | NE    | Calhoun| TX    |
| Allen     | KY    | Bath   | KY    | Bracken | KY  | Calhoun| WV    |
| Allendale  | SC    | Bayfield| WI    | Bradford| FL  | Calhoun| IA    |
| Alpine    | CA    | Bayside| TX    | Bradley | AR  | Callahan| TX    |
| Amelia    | VA    | Beadle | SD    | Brantley| GA  | Callaway| MO    |
| Amherst   | VA    | Bear Lake| ID    | Braxton | WV  | Calloway| KY    |
| Amite     | MS    | Beaufort| LA    | Breathitt| KY  | Calumet| WI    |
| Anderson  | KS    | Beaver | OK    | Breckinridge| KY  | Camden  | GA    |
| Anderson  | KY    | Beaver | UT    | Bremer  | IA   | Camden  | NC    |
| Andrew    | MO    | Beaverhead| MT    | Brewer  | TX   | Cameron | LA    |
| Andrews   | TX    | Beckham| OK    | Briscoe | TX   | Cameron | PA    |
| Anson     | NC    | Bee    | TX    | Bristol Bay| AK  | Camp   | TX    |
| Antelope  | NE    | Bell   | KY    | Broadwater| MT  | Campbell| SD    |
| Antrim    | MI    | Ben Hill| GA    | Brooke  | WV   | Campbell| TN    |
| Apache    | AZ    | Benewah| ID    | Brooks  | GA   | Cardwell| GA    |
| Appanoose  | IA    | Bennett| SD    | Brooks  | TX   | Cannon  | TN    |
| Apppling  | GA    | Benson | ND    | Brown   | IL   | Carbon  | MT    |
| Appomattox | VA    | Benton | MS    | Brown   | MN   | Carbon  | UT    |
| Aransas   | TX    | Benton | MO    | Brown   | NE   | Carbon  | WY    |
| Archer    | TX    | Benton | TN    | Brown   | OH   | Caribou | ID    |
| Arenac    | MI    | Benton | IN    | Brown   | IN   | Carlisle| KY    |
| Arkansas  | AR    | Benton | IA    | Brown   | KS   | Carroll | MN    |
| Ashie     | NC    | Benzie | MI    | Brule   | SD   | Caroline| MD    |
| Ashland   | WI    | Berrien| GA    | Brunswick| VA  | Caroline| VA    |
| Ashley    | AR    | Bertie | NC    | Bryan   | GA   | Carroll | AR    |
| Asotin    | WA    | Bethel | AK    | Bryan   | OK   | Carroll | MS    |
| Assumption| LA    | Bibb   | AL    | Buchanan| VA  | Carroll | MO    |
| Atascosa  | TX    | Bienville| TX    | Buchanan| IA  | Carroll | OH    |
| Atchison  | MO    | Big Horn| MT    | Buckingham| VA  | Carroll | TN    |
| Atchison  | KS    | Big Stone| MN    | Buena Vista| IA  | Carroll | IL    |
| Atkinson  | GA    | Blackford| IN    | Buffalo | WI   | Carroll | IN    |
| Atoka     | OK    | Bladen | NC    | Bullock | AL   | Carroll | IA    |
| County    | State | County   | State | County   | State | County   | State |
|-----------|-------|----------|-------|----------|-------|----------|-------|
| Attala    | MS    | Blaine   | MT    | Burke    | GA    | Carroll  | KY    |
| Carson    | TX    | Chouteau | MT    | Colfax   | NE    | Curry    | OR    |
| Carter    | MO    | Chowan   | NC    | Colfax   | NM    | Custer   | CO    |
| Carter    | TN    | Christian | IL    | Colleton | SC    | Custer   | ID    |
| Carter    | KY    | Churchill | NV    | Collingsworth | TX    | Custer   | MT    |
| Casey     | KY    | Cibola   | NM    | Colorado | TX    | Custer   | NE    |
| Cass      | MN    | Cimarron | OK    | Columbia | AR    | Custer   | OK    |
| Cass      | NE    | Claiborne | LA    | Columbia | WA    | Custer   | SD    |
| Cass      | TX    | Claiborne | MS    | Colusa   | CA    | Dade     | GA    |
| Cass      | IL    | Claiborne | TN    | Comanche | TX    | Dade     | MO    |
| Cass      | IA    | Clare    | MI    | Comanche | KS    | Dakota   | NE    |
| Cassia    | ID    | Clarendon | SC    | Concho   | TX    | Dallam   | TX    |
| Castro    | TX    | Clark    | AR    | Concordia | LA    | Dallas   | AR    |
| Caswell   | NC    | Clark    | MO    | Conceh   | AL    | Dallas   | MO    |
| Catahoula | LA    | Clark    | SD    | Conejos  | CO    | Daniels  | MT    |
| Catron    | NM    | Clark    | WI    | Converse | WY    | Davie    | NC    |
| Cavalier  | ND    | Clark    | IL    | Conway   | AR    | Daviess  | MO    |
| Cedar     | MO    | Clark    | KS    | Cook     | GA    | Daviess  | IN    |
| Cedar     | NE    | Clarke   | AL    | Cook     | MN    | Davis    | IA    |
| Cedar     | IA    | Clarke   | MS    | Cooper   | MO    | Dawes    | NE    |
| Chaffee   | CO    | Clarke   | VA    | Coosa    | AL    | Dawson   | GA    |
| Chambers  | AL    | Clarke   | IA    | Copiah   | MS    | Dawson   | MT    |
| Chambers  | TX    | Clay     | AL    | Corson   | SD    | Dawson   | NE    |
| Chariton  | MO    | Clay     | AR    | Coryell  | TX    | Dawson   | TX    |
| Charles City | VA | Clay | GA | Costilla | CO | Day | SD |
| Charles Mix | SD | Clay | MS | Cottle | TX | De Soto | LA |
| Charlotte | VA    | Clay     | NE    | Cotton   | OK    | De Witt  | IL    |
| Charleston | GA    | Clay     | NC    | Cottonwood | MN | Deaf Smith | TX |
| Chase     | NE    | Clay     | SD    | Covington | AL | DeBaca | NM |
| Chase     | KS    | Clay     | TN    | Covington | MS | Decatur | GA |
| Chattahoochee | GA | Clay | TX | Craig | OK | Decatur | TN |
| Chattooga | GA    | Clay     | WV    | Craig    | VA    | Decatur  | IN    |
| Chaotaqua | KS    | Clay     | IL    | Crane    | TX    | Decatur  | IA    |
| Cheatham  | TN    | Clay     | IN    | Crawford | GA    | Decatur  | KS    |
| Cheboygan | MI    | Clay     | KS    | Crawford | MI    | Deer Lodge | MT |
| Cherokee  | AL    | Clay     | KY    | Crawford | MO    | DeKalb   | MO    |
| Cherokee  | NC    | Clayton  | IA    | Crawford | WI    | DeKalb   | TN    |
| Cherokee  | OK    | Clear Creek | CO | Crawford | IL | Del Norte | CA |
| Cherokee  | IA    | Clearwater | ID | Crawford | IN | Delaware | OK |
| Cherokee  | KS    | Clearwater | MN | Crawford | IA    | Delaware | IA |
| Cherry    | NE    | Cleburne | AL    | Crenshaw | AL    | Delta    | TX    |
| Chester   | SC    | Cleburne | AR    | Crisp    | GA    | Denali   | AK    |
| Chester   | TN    | Cleveland | AR | Crittenden | KY    | Dent     | MO    |
| Chesterfield | SC | Clinch | GA | Crockett | TN | Desha    | AR    |
| Cheyenne  | CO    | Clinton  | MO    | Crockett | TX    | DeSoto   | FL    |
| Cheyenne  | NE    | Clinton  | IL    | Crook    | OR    | Deuel    | NE    |
| Cheyenne  | KS    | Clinton  | IN    | Crook    | WY    | Deuel    | SD    |
| Chickasaw | MS    | Clinton  | KY    | Crosby   | TX    | Dewey    | OK    |
| Chickasaw | IA    | Cloud    | KS    | Cross    | AR    | Dewey    | SD    |
| Chicot    | AR    | Coahoma  | MS    | Crowley  | CO    | DeWitt   | TX    |
| Childress | TX    | Coal     | OK    | Culberson | TX    | Dickens  | TX    |
| Chilton   | AL    | Cochran  | TX    | Cumberland | VA | Dickenson | VA |
| Chippewa  | MN    | Cocke    | TN    | Cumberland | IL | Dickey   | ND    |
| Choctaw   | AL    | Coffey   | KS    | Cumberland | KY | Dickinson | IA    |
| Choctaw   | MS    | Coke     | TX    | Cuming   | NE    | Dickinson | KS    |
| Choctaw   | OK    | Coleman  | TX    | Currituck | NC    | Dillingham | AK |
| Dillon    | SC    | Fallon   | MT    | Fulton   | IL    | Grant    | AR    |
| Dimmit    | TX    | Falls    | TX    | Fulton   | IN    | Grant    | LA    |
| County | State | County | State | County | State | County | State |
|--------|-------|--------|-------|--------|-------|--------|-------|
| Divide | ND    | Fannin | GA    | Fulton | KY    | Grant  | MN    |
| Dixie  | FL    | Fannin | TX    | Furnas | NE    | Grant  | NM    |
| Dixon  | NE    | Faribault | MN | Gadsden | FL | Grant  | ND    |
| Doddridge | WV | Faulk | SD | Gage | NE | Grant  | OK    |
| Dodge  | GA    | Fayette | AL | Gaines | TX | Grant  | OR    |
| Dodge  | MN    | Fayette | OH | Gallatin | IL | Grant  | SD    |
| Dolores | CO | Fayette | TN | Gallatin | KY | Grant  | WV    |
| Doniphan | KS | Fayette | TX | Gallia | OH | Grant  | KS    |
| Donley | TX    | Fayette | WV | Garden | NE | Grant  | KY    |
| Dooley | GA    | Fayette | IL | Garfield | NE | Graves  | KY    |
| Dorchester | MD | Fayette | IN | Garfield | UT | Gray  | TX    |
| Douglas | MO    | Fayette | IA | Garfield | WA | Gray   | KS    |
| Douglas | SD    | Fentress | TN | Garrard | KY | Grayson | VA    |
| Douglas | WA    | Fergus | MT | Garvin | OK | Grayson | KY    |
| Douglas | IL    | Ferry | WA | Garza | TX | Greeley | NE    |
| Drew   | AR    | Fillmore | MN | Gasconade | MO | Greeley | KS    |
| Duchesne | UT | Fillmore | NE | Gates | NC | Green  | KY    |
| Dundy  | NE    | Fisher | TX | Geary | KS | Green Lake | WI |
| Dunklin | MO    | Fleming | KY | Gem | ID | Greene  | AL    |
| Dunn   | ND    | Florence | WI | Geneva | AL | Greene  | GA    |
| Duplin | NC    | Floyd | TX | Gentry | MO | Greene  | MS    |
| Duval  | TX    | Floyd | VA | George | MS | Greene  | NC    |
| Early  | GA    | Floyd | IA | Gibson | IN | Greene  | PA    |
| East Carroll | LA | Fluavanna | VA | Gilchrist | FL | Greene  | VA    |
| East Feliciana | LA | Foard | TX | Giles | TN | Greene  | IL    |
| Eastland | TX | Ford | IL | Giles | VA | Greene  | IN    |
| Eddy   | ND    | Forest | PA | Gilliam | OR | Greene  | IA    |
| Edgar  | IL    | Forest | WI | Gilmer | GA | Greenlee | AZ    |
| Edgefield | SC | Foster | ND | Gilmer | WV | Greenup | KY    |
| Edmonson | KY | Fountain | IN | Gilpin | CO | Greenwood | KS    |
| Edmunds | SD    | Franklin | AL | Glacier | MT | Greer   | OK    |
| Edwards | IL    | Franklin | AR | Glades | FL | Gregory | SD    |
| Edwards | KS    | Franklin | FL | Gladwin | MI | Grenada | MS    |
| Effingham | GA | Franklin | GA | Glenn | CA | Griggs  | ND    |
| Elbert  | CO    | Franklin | ID | Gloucester | VA | Grimes  | TX    |
| Elbert  | GA    | Franklin | LA | Gogebic | MI | Grundy  | MO    |
| Elk    | KS    | Franklin | ME | Golden Valley | ND | Grundy  | TN    |
| Elliott | KY    | Franklin | MS | Goliad | TX | Grundy  | IA    |
| Ellis  | OK    | Franklin | NE | Gonzales | TX | Guadalupe | NM   |
| Ellsworth | KS | Franklin | NC | Goochland | VA | Gulf  | FL    |
| Elmoro | ID    | Franklin | TN | Gooding | ID | Gunnison | CO    |
| Emanuel | GA | Franklin | TX | Goshen | WY | Guthrie | IA    |
| Emery  | UT    | Franklin | IL | Gosper | NE | Haakon | SD    |
| Emmet  | IA    | Franklin | IN | Gove | KS | Haines  | AK    |
| Emmons  | ND    | Franklin | IA | Grady | GA | Hale  | AL    |
| Essex  | VT    | Franklin | KS | Graham | AZ | Halifax | VA    |
| Essex  | VA    | Freestone | TX | Graham | NC | Hall  | TX    |
| Estill | KY    | Fremont | ID | Graham | KS | Hamilton | FL    |
| Eureka  | NV   | Fremont | IA | Grainger | TN | Hamilton | NE    |
| Evangeline | LA | Frio | TX | Grand | CO | Hamilton | NY    |
| Evans  | GA    | Frontier | NE | Grand | UT | Hamilton | TX    |
| Fairfield | SC | Fulton | AR | Grand Isle | VT | Hamilton | IL    |
| Fall River | SD | Fulton | PA | Granite | MT | Hamilton | LA    |
| Hamilton | KS    | Hertford | NC | Isle of Wight | VA | Johnson | TN    |
| Hamlin  | SD    | Hettinger | ND | Itawamba | MS | Johnson | WY    |
| Hampshire | WV | Hickman | TN | Izard | AR | Johnson | IL    |
| Hampton  | SC    | Hickman | KY | Jack | TX | Johnson | KY    |
| County     | State | County | State | County | State | County | State |
|------------|-------|--------|-------|--------|-------|--------|-------|
| Hancock    | GA    | Hickory| MO    | Jackson| AR    | Johnston| OK    |
| Hancock    | MS    | Hidalgo| NM    | Jackson| CO    | Jones   | GA    |
| Hancock    | TN    | Highland| OH   | Jackson| FL    | Jones   | NC    |
| Hancock    | WV    | Highland| VA   | Jackson| LA    | Jones   | SD    |
| Hancock    | IL    | Hill    | MT    | Jackson| MN    | Jones   | TX    |
| Hancock    | IA    | Hill    | TX    | Jackson| NC    | Jones   | IA    |
| Hancock    | KY    | Hinsdale| CO   | Jackson| OH    | Juab    | UT    |
| Hand       | SD    | Hitchcock| NE   | Jackson| OK    | Judith Basin| MT |
| Hansford   | TX    | Hocking| OH    | Jackson| SD    | Juneau  | WI    |
| Hanssen    | SD    | Hockley| TX    | Jackson| TN    | Juniata | PA    |
| Haralson   | GA    | Hodgeman| KS   | Jackson| TX    | Kalkaska| MI    |
| Hardee     | FL    | Hoke    | NC    | Jackson| WV    | Kanabec | MN    |
| Hardeman   | TN    | Holmes  | FL    | Jackson| WI    | Kane    | UT    |
| Hardeman   | TX    | Holmes  | MS    | Jackson| IA    | Karnes  | TX    |
| Hardin     | OH    | Holt    | MO    | Jackson| KS    | Kearney | NE    |
| Hardin     | TN    | Holt    | NE    | Jackson| KY    | Kearny  | KS    |
| Hardin     | TX    | Hopkins | TX    | Jasper  | GA    | Keith   | NE    |
| Hardin     | IL    | Hot Spring| AR   | Jasper  | MS    | Kemper  | MS    |
| Hardin     | IA    | Hot Springs| WY   | Jasper  | SC    | Kent    | MD    |
| Hardy      | WV    | Houston | MN    | Jasper  | TX    | Keokuk  | IA    |
| Harlan     | NE    | Houston | TN    | Jasper  | IL    | Ketchikan| AK |
| Harlan     | KY    | Houston | TX    | Jasper  | IN    | Kewaunee| WI    |
| Harmon     | OK    | Howard  | AR    | Jasper  | IA    | Keweenaw| MI    |
| Harney     | OR    | Howard  | MO    | Jay     | IN    | Kidder  | ND    |
| Harper     | OK    | Howard  | NE    | Jeff Davis| GA    | Kimball | NE    |
| Harper     | KS    | Howard  | TX    | Jeff Davis| TX    | Kimble  | TX    |
| Harris     | GA    | Howard  | IA    | Jefferson| FL    | King and Queen| VA |
| Harrison   | MO    | Hubbard | MN    | Jefferson| GA    | King George| VA |
| Harrison   | OH    | Huerfano| CO    | Jefferson| ID    | King William| VA |
| Harrison   | IN    | Hughes  | OK    | Jefferson| MS    | Kingfisher| OK |
| Harrison   | IA    | Hughes  | SD    | Jefferson| MT    | Kingman  | KS    |
| Harrison   | KY    | Humboldt| NV    | Jefferson| NE    | Kingsbury| SD    |
| Hart       | GA    | Humboldt| IA    | Jefferson| OK    | Kiowa   | CO    |
| Hart       | KY    | Humphreys| MS   | Jefferson| OR    | Kiowa   | OK    |
| Hartley    | TX    | Humphreys| TN   | Jefferson| TN    | Kiowa   | KS    |
| Haskell    | OK    | Hutchinson| SD  | Jefferson| WV    | Kit Carson| CO |
| Haskell    | TX    | Hutchinson| TX  | Jefferson| KS    | Kittson | MN    |
| Haskell    | KS    | Hyde    | NC    | Jefferson Davis| LA    | Kleberg | TX    |
| Hawkins    | TN    | Hyde    | SD    | Jefferson Davis| MS    | Klickitat| WA    |
| Haywood    | TN    | Iberville| LA  | Jenkins  | GA    | Knott   | KY    |
| Heard      | GA    | Ida    | IA    | Jennings | IN    | Knox    | MO    |
| Hemphill   | TX    | Idaho   | ID    | Jerauld  | SD    | Knox    | NE    |
| Hempstead  | AR    | Inyo    | CA    | Jerome   | ID    | Knox    | TX    |
| Henderson  | TN    | Joosco  | MI    | Jersey   | IL    | Knox    | KY    |
| Henderson  | IL    | Iowa    | WI    | Jewell   | KS    | Kodiak Island| AK |
| Hendry     | FL    | Iowa    | IA    | Jim Hogg  | TX    | Koochiching| MN |
| Henry      | AL    | Iron    | MI    | Jim Wells | TX    | Kossuth  | IA    |
| Henry      | MO    | Iron    | MO    | Jo Daviess| IL    | La Paz   | AZ    |
| Henry      | OH    | Iron    | WI    | Johnson  | AR    | La Salle| LA    |
| Henry      | IA    | Iroquois| IL    | Johnson  | GA    | La Salle| TX    |
| Henry      | KY    | Irwin   | GA    | Johnson  | NE    | Labette | KS    |
| Lac qui Parle | MN   | Lewis  | WV    | Lyon    | IA    | Massac  | IL    |
| Lafayette  | AR    | Lewis  | KY    | Lyon    | KY    | Mathews | VA    |
| Lafayette  | FL    | Liberty| FL    | Mackinac| MI    | Maverick| TX    |
| Lafayette  | MO    | Liberty| GA    | Macon   | AL    | McClain | OK    |
| Lafayette  | WI    | Liberty| MT    | Macon   | GA    | McCone  | MT    |
| County       | State | County      | State | County     | State | County    | State | County   | State | County  | State |
|--------------|-------|-------------|-------|------------|-------|-----------|-------|----------|-------|---------|-------|
| Lake         | CO    | Limestone   | TX    | Macon      | MO    | McCook    | SD    | Lake     | MN    | Lincoln  | AR    |
| Lake         | MI    | Lincoln     | AR    | Macon      | TN    | McCormick | SC    | Lake     | MN    | Lincoln  | CO    |
| Lake         | MN    | Lincoln     | CO    | Madison    | AR    | McCreary  | KY    | Lake     | MT    | Lincoln  | GA    |
| Lake         | MT    | Lincoln     | GA    | Madison    | FL    | McCulloch | TX    | Lake     | OR    | Lincoln  | ID    |
| Lake         | OR    | Lincoln     | ID    | Madison    | GA    | McCurtain | OK    | Lake     | SD    | Lincoln  | MN    |
| Lake         | TN    | Lincoln     | MS    | Madison    | LA    | McDonough | IL    | Lake of the Woods | MN    | Lincoln  | MO    |
| Lamar        | AL    | Lincoln     | MT    | Madison    | MT    | McDuffie  | GA    | Lamar    | GA    | Lincoln  | NV    |
| Lamar        | GA    | Lincoln     | NV    | Madison    | NC    | McHenry   | ND    | Lamar    | MS    | Lincoln  | NM    |
| Lamar        | MS    | Lincoln     | NM    | Madison    | OH    | McIntosh  | GA    | Lam      | TX    | Lincoln  | OK    |
| LaMoure      | ND    | Lincoln     | SD    | Madison    | VA    | McIntosh  | OK    | Lampasas  | TX    | Lincoln  | TN    |
| Lancaster    | VA    | Lincoln     | WA    | Magoffin   | KY    | McLean    | ND    | Lancaster | VA    | Lincoln  | KY    |
| Lander       | NV    | Lincoln     | WV    | Mahaska    | IA    | McLean    | NY    | Lander    | KY    | Lincoln  | KS    |
| Lane         | KS    | Lincoln     | WI    | Mahnomen   | MN    | McNairy   | TN    | Langlade  | WI    | Lincoln  | MO    |
| Lanier       | GA    | Lincoln     | KS    | Manistee   | MI    | Meade     | SD    | Lanier    | KY    | Lincoln  | KY    |
| Larue        | KY    | Lincoln     | KY    | Marengo    | AL    | Meade     | KS    | Larue     | MO    | Lincoln  | MO    |
| Las Animas   | CA    | Linn        | KS    | Marion     | AL    | Meagher   | MT    | Lassen    | OK    | Lipscomb | TX    |
| Latimer      | TN    | Little River| AR    | Marion     | GA    | Medina    | TX    | Latimer   | MS    | Live Oak | TX    |
| Lawrence     | AL    | Livingston  | MO    | Marion     | SC    | Meigs     | OH    | Lawrence  | AR    | Livingston | KY    |
| Lawrence     | MS    | Llano       | TX    | Marion     | TX    | Menard    | TX    | Lawrence  | MS    | Logan    | AR    |
| Lawrence     | MO    | Logan       | AR    | Marion     | KS    | Menard    | IL    | Lawrence  | TN    | Logan    | CO    |
| Lawrence     | IL    | Logan       | ND    | Mariposa   | CA    | Menominee | MI    | Lawrence  | KY    | Logan    | OK    |
| Lawrence     | KY    | Logan       | OK    | Marlboro   | SC    | Mercer    | MO    | Le Flore   | OK    | Logan    | WV    |
| Leake        | MS    | Logan       | IL    | Marshall   | MN    | Mercer    | IL    | Leake     | AR    | Logan    | KS    |
| Lee          | AR    | Logan       | KS    | Marshall   | MS    | Mercer    | KY    | Lee       | GA    | Logan    | KY    |
| Lee          | GA    | Logan       | KY    | Marshall   | OK    | Meriwether | GA    | Lee       | SC    | Long    | GA    |
| Lee          | SC    | Long        | GA    | Marshall   | SD    | Merrick   | NE    | Lee       | TX    | Los Alamos | NM    |
| Lee          | VA    | Louisa      | VA    | Marshall   | WV    | Miami     | KS    | Lee       | KY    | Louisa   | IA    |
| Lee          | KY    | Louisa      | IA    | Marshall   | IL    | Middlesex | VA    | Leelanau  | MI    | Love     | OK    |
| Lemhi        | ID    | Lowndes     | AL    | Marshall   | KY    | Millard   | UT    | Leon      | TX    | Lucas    | IA    |
| Leon         | TX    | Lucas       | IA    | Martin     | NC    | Mille Lacs | MN    | Leslie    | KY    | Luce     | MI    |
| Leslie       | KY    | Lumpkin     | GA    | Martin     | IN    | Miller    | GA    | Letcher   | KY    | Luna     | NM    |
| Levy         | FL    | Luna        | NM    | Martin     | KY    | Miller    | MO    | Levy      | ID    | Lunenburg | VA    |
| Lewis        | MO    | Lyman       | SD    | Mason      | TX    | Mills     | TX    | Lewis     | NY    | Lynn     | TX    |
| Lewis        | NY    | Lynn        | TX    | Mason      | IL    | Miner     | SD    | Lewis     | TN    | Lyon     | NV    |
| Lewis        | TN    | Lyon        | NV    | Mason      | KY    | Mineral   | CO    | Mineral   | MT    | Morrison | MN    |
| Mineral      | NV    | Morrow      | OH    | Ochiltree  | TX    | Pecos     | TX    | Mineral   | WV    | Morrow    | OR    |
| Mineral      | WV    | Morrow      | OR    | Oconee     | GA    | Pembina   | ND    | Mingo     | WV    | Morton    | ND    |
| Mingokuk     | ID    | Morton      | KS    | Ogemaw     | MI    | Pend Oreille | WA   |
| Missaukee    | MI    | Motley      | TX    | Oglethorpe | GA    | Pender    | NC    | Mississippi | MO    | Moultrie | IL    |
| Mississippi  | MO    | Moultrie    | IL    | Ohio       | IN    | Pendleton | WV    | World 2022, 3 |

Table A1. Cont.
| County     | State  | County | State | County | State | County | State |
|------------|--------|--------|-------|--------|-------|--------|-------|
| Mitchell   | GA     | Mountrail | ND    | Mitchell | GA | Murray | KS |
| Mitchell   | NC     | Mower   | MN    | Mitchell | IA | Murray | KS |
| Mitchell   | TX     | Muhlenberg | KY    | Mitchell | IA | Murray | KS |
| Moniteau   | MO     | Nance   | NE    | Mono    | CA | Nantucket | MA |
| Monona     | IA     | Natchitoches | LA    | Monroe   | AL | Nelson | ND |
| Monroe     | AR     | Nelson   | VA    | Monroe   | MA | Nelson | ND |
| Monroe     | MS     | Nemaha   | NE    | Monroe   | MO | Neosho | KS |
| Monroe     | MO     | Neosho   | KS    | Monroe   | OH | Neshoba | MS |
| Monroe     | TN     | Ness     | KS    | Monroe   | WV | Nevada  | AR |
| Monroe     | IL     | New Kent | VA    | Monroe   | CA | New Madrid | MO |
| Monroe     | KY     | Newberry | SC    | Montague | TX | Newton | AR |
| Montgomery | AR     | Newton   | MS    | Montgomery | GA | Newton | MS |
| Montgomery | MS     | Newton   | IN    | Montgomery | MO | Nicholas | WV |
| Montgomery | NC     | Nicholas | KS    | Montgomery | IL | Nicotlet | MN |
| Montgomery | IL     | Nickel   | MN    | Montgomery | KY | Noble   | OH |
| Montgomery | KY     | Noble    | KS    | Montmorenci | MI | Noble   | OK |
| Montgomery | MO     | Noble    | KS    | Montgomery | PA | Nobles  | MN |
| Moody      | SD     | Nodaway  | MO    | Moody     | TX | Nolan   | TX |
| Moore      | TN     | Nolan    | TX    | Moore     | TX | Nome   | AK |
| Moore      | TX     | Nome     | AK    | Mora      | NM | Norman  | MN |
| Montour    | PA     | Nobles   | MN    | Montour   | PA | Nobles  | MN |
| Moody      | SD     | Nodaway  | MO    | Moody     | TX | Nee     | NV |
| Moore      | TN     | Nolan    | TX    | Moore     | TX | Nome   | AK |
| Mora       | NM     | Norman   | MN    | Morehouse | LA | North Slope | AK |
| Morgan     | CO     | Northampton | NC    | Morgan    | GA | Northampton | VA |
| Morgan     | MO     | Northumberland | VA    | Morgan    | MO | Northumberland | VA |
| Morgan     | OH     | Northwest Arctic | AK   | Morgan    | TN | Norton   | KS |
| Morgan     | TN     | Norton   | KS    | Morgan    | UT | Nottoway | VA |
| Morgan     | WV     | Nowata   | OK    | Morgan    | KY | Nuxubee | MS |
| Morgan     | KY     | Nuxubee  | OK    | Morgan    | NE | Nude    | NE |
| Morgan     | TX     | Nye      | NV    | Morris     | TX | O'Brien | IA |
| Morris     | KS     | O'Brien  | IA    | Morris     | TX | O'Brien | IA |
| Pocahontas | IA     | Randolph | WV    | Pocahontas | IA | Randolph | WV |
| Poinsett   | AR     | Randolph | IL    | Poinsett   | AR | Randolph | IL |
| Pointe     | LA     | Randolph | IN    | Pointe     | LA | Randolph | IN |
| Polk       | AR     | Ransom   | ND    | Polk      | GA | Rappahannock | VA |
| Polk       | MO     | Rawlins  | KS    | Polk      | MO | Ray     | MO |
| Polk       | NE     | Ray     | MO    | Polk      | NC | Reagan  | TX |
| Polk       | TN     | Real     | TX    | Polk      | TX | Red Lake | MN |
| Polk       | TX     | Red Lake | MN    | Polk      | TX | Red Lake | MN |

Table A1. Cont.
| County     | State | County      | State | County  | State | County   | State | County | State | County | State |
|------------|-------|-------------|-------|---------|-------|-----------|-------|---------|-------|---------|-------|
| Pondera    | MT    | Red River   | LA    | Saline  | MO    | Sheridan  | NE    |         |       |        |       |
| Pontotoc   | MS    | Red River   | TX    | Saline  | NE    | Sheridan  | ND    |         |       |        |       |
| Pope       | MN    | Red Willow  | NE    | Saline  | IL    | Sheridan  | KS    |         |       |        |       |
| Pope       | IL    | Redwood     | MN    | Saluda  | SC    | Sherman   | NE    |         |       |        |       |
| Posey      | IN    | Reeves      | TX    | San Augustine | TX   | Sherman   | TX    |         |       |        |       |
| Pottawatomie | KS   | Refugio     | TX    | San Jacinto | TX   | Sherman   | KS    |         |       |        |       |
| Potter     | PA    | Renville    | MN    | San Juan | CO    | Shoshone  | ID    |         |       |        |       |
| Potter     | SD    | Renville    | ND    | San Juan | UT    | Sibley    | MN    |         |       |        |       |
| Powder     | RI    | Republic    | KS    | San Miguel | CO   | Sierra    | CA    |         |       |        |       |
| Powder     | MT    | Richland    | LA    | Sargent  | ND    | Smith     | MS    |         |       |        |       |
| Powder     | KS    | Richland    | MT    | Saunders | NE    | Smith     | TN    |         |       |        |       |
| Powder     | OH    | Richland    | ND    | Sawyer   | WI    | Smith     | KS    |         |       |        |       |
| Powder     | MS    | Richland    | WI    | Schleicher | TX   | Smyth     | VA    |         |       |        |       |
| Power      | ID    | Rice        | KS    | Sanborn  | SD    | Simpson   | KY    |         |       |        |       |
| Poweshiek  | IA    | Rich        | UT    | Sanders  | MT    | Sitka     | AK    |         |       |        |       |
| Powhatan   | VA    | Richardson  | NE    | Sanpete  | UT    | Skamania  | WA    |         |       |        |       |
| Prairie    | AR    | Richland    | LA    | Sargent  | ND    | Smith     | MS    |         |       |        |       |
| Pratt      | KS    | Richland    | MT    | Saunders | NE    | Smith     | TN    |         |       |        |       |
| Preble     | OH    | Richland    | ND    | Sawyer   | WI    | Smith     | KS    |         |       |        |       |
| Prentiss   | MS    | Richland    | WI    | Schleicher | TX   | Smyth     | VA    |         |       |        |       |
| Presidio   | TX    | Richland    | IL    | Schley   | GA    | Socorro   | NM    |         |       |        |       |
| Presque Isle | MI  | Richmond   | VA    | Schoharie | NY    | Somerset  | MD    |         |       |        |       |
| Preston    | WV    | Ringgold    | IA    | Schoolcraft | MI   | Somervell | TX    |         |       |        |       |
| Price      | WI    | Rio Arriba  | NM    | Schuyler | MO    | Spencer   | IN    |         |       |        |       |
| Prince     | VA    | Rio Blanco  | CO    | Schuyler | NY    | Spencer   | KY    |         |       |        |       |
| Edward     | CO    | Rio Grande  | CO    | Schuyler | IL    | Spink     | SD    |         |       |        |       |
| Prowers    | CO    | Rockcastle  | KY    | Screven  | GA    | Stanton   | KS    |         |       |        |       |
| Pulaski    | GA    | Ripley      | IN    | Scott    | AR    | St. Francis | AR    |         |       |        |       |
| Pulaski    | MO    | Ripley      | WV    | Scott    | MS    | St. Helena | LA    |         |       |        |       |
| Pulaski    | IL    | Roane       | TN    | Scott    | TN    | St. James  | LA    |         |       |        |       |
| Pulaski    | IN    | Roane       | WV    | Scott    | VA    | St. John the Baptist | LA    |         |       |        |       |
| Pushmataha | OK    | Roberts     | SD    | Scott    | IL    | St. Martin  | LA    |         |       |        |       |
| Putnam     | GA    | Robertson   | TX    | Scott    | IN    | Stafford   | KS    |         |       |        |       |
| Putnam     | MO    | Rock        | MN    | Scott    | KS    | Stanley    | SD    |         |       |        |       |
| Putnam     | OH    | Rock        | NE    | Scott    | KY    | Stanton    | NE    |         |       |        |       |
| Putnam     | IL    | Rockcastle  | KY    | Screven  | GA    | Stanton    | KS    |         |       |        |       |
| Putnam     | IN    | Roger Mills | OK    | Scurry   | TX    | Stark      | IL    |         |       |        |       |
| Quay       | NM    | Rolette     | ND    | Searcy   | AR    | Starke     | IN    |         |       |        |       |
| Quitman    | MS    | Rocks       | KS    | Sedgwick | CO    | Starr      | TX    |         |       |        |       |
| Rabun      | GA    | Roosevelt   | MT    | Seminole | GA    | Ste. Genevieve | MO    |         |       |        |       |
| Rains      | TX    | Roosevelt   | NM    | Seminole | OK    | Steele     | ND    |         |       |        |       |
| Ralls      | MO    | Roscommon   | MI    | Seneca   | NY    | Stephens   | GA    |         |       |        |       |
| Ramsey     | ND    | Roseau      | MN    | Sequatchie | TN   | Stephens   | TX    |         |       |        |       |
| Randolph   | AL    | Rosebud     | MT    | Sequoyah | OK    | Stevens    | MN    |         |       |        |       |
| Randolph   | AR    | Rowan       | KY    | Sevier   | AR    | Stevens    | KS    |         |       |        |       |
| Randolph   | GA    | Runnels     | TX    | Sevier   | UT    | Stewart    | GA    |         |       |        |       |
| Randolph   | MO    | Rush        | IN    | Seward   | NE    | Stewart    | TN    |         |       |        |       |
| Stillwater | MT    | Tippah      | MS    | Valley   | NE    | Wayne      | MO    |         |       |        |       |
| Stoddard   | MO    | Tipton      | TN    | Van Buren | AR    | Wayne      | NE    |         |       |        |       |
| Stokes     | NC    | Tipton      | IN    | Van Buren | TN    | Wayne      | TN    |         |       |        |       |
| Stone      | AR    | Tishomingo  | MS    | Van Buren | IA    | Wayne      | UT    |         |       |        |       |
| Stone      | MS    | Todd        | MN    | Van Wert | OH    | Wayne      | WV    |         |       |        |       |
| Stone      | MO    | Todd        | SD    | Van Zandt | TX    | Wayne      | IL    |         |       |        |       |
| Stonewall  | TX    | Todd        | KY    | Vermillion | IN   | Wayne      | IA    |         |       |        |       |
| Storey     | NV    | Tooele      | UT    | Vernon   | LA    | Wayne      | KY    |         |       |        |       |
| Sublette   | WY    | Toole       | MT    | Vernon   | MO    | Weakley    | TN    |         |       |        |       |
| Sullivan   | MO    | Torrance    | NM    | Vernon   | WI    | Webster    | MS    |         |       |        |       |
| Sullivan   | PA    | Towner      | ND    | Vilas    | WI    | Webster    | MO    |         |       |        |       |
Table A1. Cont.

| County   | State | County   | State | County   | State | County   | State | County   | State |
|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|
| Sullivan | IN    | Towns    | GA    | Vinton   | OH    | Webster  | NE    |          |       |
| Sully    | SD    | Truill   | ND    | Wabash   | IL    | Webster  | WV    |          |       |
| Summers  | WV    | Transylvania | NC     | Wabasha   | MN    | Webster  | KY    |          |       |
| Sumner   | KS    | Traverse | MN    | Wabaunsee | KS    | Wells    | ND    |          |       |
| Sumter   | AL    | Trego    | KS    | Wadena   | MN    | Wells    | IN    |          |       |
| Sumter   | FL    | Trempealeau | WI     | Wahkiakum | WA    | West Baton Rouge | LA |          |       |
| Sunflower | MS   | Treutlen  | GA    | Wakulla  | FL    | West Carroll | LA |          |       |
| Surry    | VA    | Trigg    | KY    | Wallace  | KS    | West Feliciana | LA |          |       |
| Susquehanna | PA   | Trimble   | KY    | Waller   | TX    | Westmoreland | VA |          |       |
| Sussex   | VA    | Trinity  | CA    | Wallowa  | OR    | Weston   | WY    |          |       |
| Sutton   | TX    | Trinity  | TX    | Walsh    | ND    | Wetzel   | WV    |          |       |
| Suwannee | FL    | Tripp    | SD    | Walthall | MS    | Wheatland | MT |          |       |
| Swain    | NC    | Trousseau| TN    | Walworth | SD    | Wheeler  | GA    |          |       |
| Sweet Grass | MT  | Tucker   | WV    | Ward     | TX    | Wheeler  | TX    |          |       |
| Swift    | MN    | Tunica   | MS    | Warren   | GA    | White    | GA    |          |       |
| Swisher  | TX    | Turner   | GA    | Warren   | MO    | White    | TN    |          |       |
| Switzerland  | IN    | Turner   | SD    | Warren   | NC    | White    | IL    |          |       |
| Talbot   | GA    | Twiggs   | GA    | Warren   | IL    | White    | IN    |          |       |
| Tallahatchie | MS   | Tyler    | TX    | Warren   | IN    | White Pine | NV |          |       |
| Tallapoosa | AL  | Tyler    | WV    | Warren   | IA    | Whitley  | KY    |          |       |
| Tama     | IA    | Tyrrell  | NC    | Wasatch  | UT    | Whittman | WA    |          |       |
| Tate     | MS    | Uinta    | WI    | Washoe   | MN    | Wichita  | KS    |          |       |
| Tattnall | GA    | Uintah   | UT    | Washakie | WY    | Wilbarger | WA |          |       |
| Taylor   | FL    | Unicoi   | TN    | Washburn | WI    | Wilcox   | AL    |          |       |
| Taylor   | GA    | Union    | FL    | Washington | AL   | Wilcox  | GA    |          |       |
| Taylor   | WV    | Union    | GA    | Washington | CO   | Wilkes    | GA    |          |       |
| Taylor   | WI    | Union    | LA    | Washington | FL   | Wilkinson | MN    |          |       |
| Taylor   | IA    | Union    | MS    | Washington | GA   | Wilkinson | GA    |          |       |
| Taylor   | KY    | Union    | NM    | Washington | ID   | Wilkinson | MS    |          |       |
| Telfair  | GA    | Union    | OR    | Washington | LA   | Willacy  | TX    |          |       |
| Teller   | CO    | Union    | SC    | Washington | ME   | Williamsburg | SC |          |       |
| Tensas   | LA    | Union    | SD    | Washington | MO   | Wilson    | TX    |          |       |
| Terrell  | GA    | Union    | TN    | Washington | NE   | Wilson    | KS    |          |       |
| Terry    | TX    | Union    | IL    | Washington | NC   | Winkler  | TX    |          |       |
| Teton    | ID    | Union    | IN    | Washington | IL   | Winn     | LA    |          |       |
| Teton    | MT    | Union    | IA    | Washington | IN   | Winnebago | IA    |          |       |
| Texas    | MO    | Union    | KY    | Washington | IA   | Winneshiek | IA    |          |       |
| Texas    | OK    | Upshur   | TX    | Washington | KS   | Winston  | AL    |          |       |
| Thayer   | NE    | Upshur   | WV    | Washington | KY   | Winston  | MS    |          |       |
| Thomas   | KS    | Upson    | GA    | Washita   | OK    | Wirt     | WV    |          |       |
| Throckmorton | TX  | Upton   | TX    | Walton    | MN   | Wolfe    | KY    |          |       |
| Thurston | NE    | Uvalde   | TX    | Waushara  | WI    | Woodford | KY    |          |       |
| Tillamook | OR  | Valley   | ID    | Wayne     | GA    | Woodford | IL    |          |       |
| Tillman  | OK    | Valley   | MT    | Wayne     | MS    | Woodruff | AR    |          |       |
| Woods    | OK    | Wright   | IA    | Yates     | NY    | Yukon-Koyukuk | AK |          |       |
| Woodson  | KS    | Wyandot  | OH    | Yazoo     | MS    | Yuma     | CO    |          |       |
| Woodward | OK    | Wyoming  | PA    | Yell      | AR    | Zapata  | TX    |          |       |
| Worth    | GA    | Wyoming  | WV    | Yellow Medicine | MN   | Zavala  | TX    |          |       |
| Worth    | MO    | Yadkin   | NC    | Yoakum    | TX    |          |       |
| Worth    | IA    | Yalobusha | MS    | York      | NE    |          |       |
| Wright   | MO    | Yancey   | NC    | Young     | TX    |          |       |

References

1. Bettencourt, L.; West, G. A Unified theory of urban living. *Nature* 2010, 467, 912–913. [CrossRef] [PubMed]
2. West, G. Scale: The Universal Laws of Life and Death in Organisms, Cities and Companies; Weidenfeld & Nicolson: London, UK, 2017.
3. Schläpfer, M.; Bettencourt, L.M.A.; Grauwin, S.; Raschke, M.; Claxton, R.; Smoreda, Z.; West, G.B.; Ratti, C. The scaling of human interactions with city size. *J. R. Soc. Interface* **2014**, *11*, 20130789. [CrossRef] [PubMed]

4. Lobo, J.; Bettencourt, L.M.A.; Ortsman, S.G.; Smith, M.E. Settlement Scaling Theory: Bridging the study of ancient and contemporary urban systems. *Urban Stud.* **2020**, *57*, 731–747. [CrossRef]

5. Bettencourt, L.M.A. The origins of scaling in cities. *Science* **2013**, *340*, 1438–1441. [CrossRef] [PubMed]

6. Toerien, D.F.; Seaman, M.T. Proportionality in enterprise development of South African towns. *S. Afr. J. Sci.* **2012**, *108*, 38–47. [CrossRef]

7. Toerien, D.F. Power laws and the demographic-socioeconomic-entrepreneurial nexus of United States counties. In *Advances in Sociology Research*; Jaworski, J.A., Ed.; Nova Science Publishers: New York, NY, USA, 2020; Volume 32, pp. 65–115.

8. Toerien, D.F. A small-town economic revitalisation conundrum: Focus on tourism, manufacturing, or both? *Energies* **2021**, *14*, 7568. [CrossRef]

9. Youn, H.; Bettencourt, L.M.A.; Lobo, J.; Strumsky, D.; Samaniego, H.; West, G.B. Scaling and universality in urban economic diversification. *J. R. Soc. Interface* **2016**, *13*, 20150937. [CrossRef]

10. Toerien, D.F.; Seaman, M.T. Enterprise richness as an important characteristic of South African towns. *S. Afr. J. Sci.* **2014**, *110*, 9. [CrossRef]

11. Toerien, D.F. Entrepreneurial space and enterprise richness in a group of U.S. Counties before, during, and after economic turmoil. *J. Rural. Community Dev.* **2021**, *16*, 175–194.

12. Toerien, D.F. Entrepreneurial regularities and diversity in Texas counties. *Int. J. Entrep.* **2021**, *25*, 1–16.

13. Glaeser, E. *Triumph of the City*; Penguin: New York, NY, USA, 2011.

14. Rose, A.K. Cities and countries. *J. Money Credit. Bank* **2006**, *38*, 2225–2245. [CrossRef]

15. Bettencourt, L.M.A.; Lobo, J.; Helbing, D.; Kühnert, C.; West, G.B. Growth, innovation, scaling, and the pace of life in cities. *Proc. Natl. Acad. Sci. USA* **2007**, *104*, 7301–7306. [PubMed]

16. Bettencourt, L.M.A. The Kind of Problem a City Is; 2013-008; Santa Fe Institute Working Paper: Santa Fe, NM, USA, 2013. Available online: https://www.santafe.edu/research/results/working-papers/the-kind-of-problem-a-city-is (accessed on 2 May 2019).

17. Bettencourt, L.M.A.; Lobo, J.; Youn, H. The hypothesis of urban scaling: Formalization, implications and challenges. *arXiv* **2013**, arXiv:1301.5919.

18. Lobo, J.; Bettencourt, L.M.J.; Strumsky, D.; West, G.B. Urban scaling and the production function for cities. *PLoS ONE* **2013**, *8*, e58407. [CrossRef]

19. Martin, R.; Sunley, P. Complexity thinking and evolutionary economic geography. In *The Handbook of Evolutionary Economic Geography*; Boschma, R., Martin, R., Eds.; Edgar Elgar: Cheltenham, UK, 2010; pp. 93–119.

20. Gomez-Lievano, A.; Patterson-Lomba, O.; Hausmann, R. Explaining the prevalence, scaling and variance of urban phenomena. *arXiv* **2016**, arXiv:1604.07876v1. [CrossRef]

21. Scott, A.J.; Storper, M. The nature of cities: The scope and limits of Urban Theory. *Int. J. Urban Reg. Res.* **2015**, *39*, 1–15. [CrossRef]

22. Florida, R. *The Rise of the Creative Class and How It’s Transforming Work, Leisure, Community and Everyday Life*; Basic Books: New York, NY, USA, 2004.

23. Storper, M.; Venables, A.J. Buzz: Face-to-face contact and the urban economy. *J. Econ. Geogr.* **2004**, *4*, 351–370. [CrossRef]

24. Ionescu, G.H.; Firoiu, D.; Pîrvu, R.; Enescu, M.; Radoi, M.; Cojocaru, T.M. The potential for innovation and entrepreneurship in EU countries in the context of sustainable development. *Sustainability* **2020**, *12*, 7250. [CrossRef]

25. Schumpeter, J.A. *Capitalism, Socialism and Democracy*, 3rd ed.; Harper & Row: New York, NY, USA, 1950; pp. 131–134.

26. Neffke, F.; Henning, M.; Boschma, R. How do regions diversify over time? Industry relatedness and the development of new growth paths in regions. *Econ. Geogr.* **2011**, *87*, 237–265. [CrossRef]

27. Anderson, A.R.; Starnawksa, M. Research practices in entrepreneurship: Problems of definition, description and meaning. *Int. J. Entrep. Innov.* **2008**, *9*, 221–230. [CrossRef]

28. Miller, D. The correlates of entrepreneurship in three types of firms. *Manag. Sci.* **1983**, *29*, 770–791. [CrossRef]

29. Reynolds, P.D.; Hay, M.; Camo, S.M. *Global Entrepreneurship Monitor: 1999, Executive Report*; Kauffman Center for Entrepreneurial Leadership; Ewing Marion Kauffman Foundation: Kansas City, MO, USA, 1999.

30. Anderson, A.R. Paradox in the periphery: An entrepreneurial reconstruction. *Entrep. Reg. Dev.* **2000**, *12*, 91–110. [CrossRef]

31. Eisenmann, T.R. Entrepreneurship: A working definition. *Harvard Business Review*. 10 January 2013. Available online: https://hbr.org/2013/01/what-is-entrepreneurship (accessed on 19 December 2021).

32. Davidsson, P. The domain of entrepreneurship research: Some suggestions. In *Cognitive Approaches to Entrepreneurship Research*; Katz, J., Shepherd, D., Eds.; JAI Press: Stamford, CT, USA; Elsevier: Oxford, UK, 2003; Volume 6, pp. 315–372.

33. Toerien, D.F. Linking entrepreneurial activities and community prosperity/poverty in United States counties: Use of the Enterprise Dependency Index. *Sustainability* **2022**, *14*, 2812. [CrossRef]

34. Bettencourt, L.M.A.; Lobo, J.; Strumsky, D.; West, G.B. Urban scaling and its deviations: Revealing the structure of wealth, innovation and crime across cities. *PLoS ONE* **2010**, *5*, e13541. [CrossRef] [PubMed]

35. Toerien, D.F. The enduring and spatial nature of the enterprise richness of South African towns. *S. Afr. J. Sci.* **2017**, *113*, 1–8. [CrossRef]
36. Hall, R.E. Quantifying the Lasting Harm to the US Economy from the Financial Crisis. *NBER Macroecon. Annu.* 2014, 29, 71–128. Available online: https://www.journals.uchicago.edu/doi/10.1086/680584 (accessed on 15 April 2022). [CrossRef]

37. Whittaker, R.H. Evolution and measurement of species diversity. *Taxon* 1972, 21, 213–251. [CrossRef]

38. Quigley, J.M. Urban diversity and economic growth. *J. Econ. Perspect.* 1998, 12, 127–138. [CrossRef]

39. Malizia, E.E.; Ke, S. The influence of economic diversity on unemployment and stability. *J. Reg. Sci.* 1993, 33, 221–235. [CrossRef]

40. Wagner, J.E.; Deller, S.C. Measuring the effects of economic diversity on growth and stability. *Land Econ.* 1998, 74, 541–556. [CrossRef]

41. Siegel, P.B.; Alwang, J.; Johnson, T.G. Toward an improved portfolio variance measure of regional economic stability. *Rev. Reg. Stud.* 1994, 24, 71–86. [CrossRef]

42. Hausmann, R.; Klinger, B. South Africa’s export predicament. *Econ. Transl.* 2008, 16, 609–637. [CrossRef]

43. Cardenetea, M.A.; Garcia-Tapial, J. Assessing the economic impact of entrepreneurship on regional economy using social accounting matrices: The case of Andalusia. *Appl. Econ. Lett.* 2019, 26, 1373–1377. [CrossRef]

44. Toerien, D.F. Disproportionate agglomeration and scaling in regional socioeconomic analyses: Alabama counties as a case study. *Cogent Soc. Sci.* 2020, 6, 1817256. [CrossRef]

45. Krugman, P. Confronting the mystery of urban hierarchy. *J. Jpn. Int. Econ.* 1996, 10, 399–418. [CrossRef]