

NATURE AND IMPORTANCE OF SMALL BUSINESS IN REGIONAL AUSTRALIA, WITH A CONTRAST TO STUDIES OF URBAN SMALL BUSINESSES

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ABSTRACT: Regional small businesses (Regional-SBs) are considered important to sustaining regional socio-economic viability. However, the presence, nature, and causes of differences between Regional-SBs and Urban-SBs are often overlooked in the literature and in the development of regional policy. This study shows the presence and import of such differences by applying theory and statistically contrasting a sample from 2 195 Regional-SBs with published average-Australian-SB data. It was found that, on average, Regional-SBs are profoundly more durable and, hence, creditworthy than average Australian-SBs, but may be at risk because they are slower in applying new technology. The durability/survivorship of Regional-SBs is strongly influenced by their attributes, including size. More studies on the extent and causes of variability in SB durability are needed.

KEY WORDS: Regional Small Business; Socio-economic viability; Gender; Continuity; Micro-firms.

1. INTRODUCTION

An ongoing regional-to-urban population migration (Davis, 1965) is evident in developing nations (Zuberi *et al.* 2003), emerging powerhouses (Arizpe, 1981; Juan, 2012; Hassan and Khan, 2012), and developed nations (McKenzie, 2008; Catto, 2003; Bruce *et al.*, 2005; Wilson, 2009). The displacement costs and consequences of this migration are profound, with under-utilized housing and infrastructure decaying in regional areas (Bruce, *et al.*, 2005) juxtaposed to housing shortages, overloaded infrastructure, overwhelmed services and under- and un-employment issues in urban areas. While this regional-to-urban migration is well

documented and understood, *ways and means* to ameliorate its displacement effects are yet to come.

Because the term rural is seen as overly restrictive, this paper considers *regional areas* which are defined as encompassing rural communities, towns, and small regional cities. This study focuses on how regional small businesses (Regional-SBs) are different from the common perceptions of small businesses (SBs) which are dominated by urban small businesses (Urban-SBs). In addition, the contribution of Regional-SBs to slowing or reversing the regional-area out-migration is explored. This study is intended to determine whether detailed research into the unique attributes and contribution of regional-SBs is worth the decades of effort needed for a large-scale multi-community study.

Following this introduction the second section of this paper draws on extant literature to highlight the SB contribution to their regions. The third section considers why regional-SBs share an identity/nature that differs greatly from average Australian SBs and presents the null hypotheses to be tested. The fourth section describes the methodology and the fifth and sixth sections, present and provide a discussion of, the results. Finally, the conclusions, limitations and suggestions for further research are presented in section seven.

2. THE REGIONAL SB CONTRIBUTION

While little can offset the attraction of youth to the dynamism of metropolitan areas, much can be done to reduce the economic drivers behind the regional-area migration.

As nations develop, they necessarily shed labour from their primary sector (Rowthorn and Ramaswamy, 1997). In the past, much of that surplus labour was absorbed by a rising secondary sector. However, technological advances have continually reduced the need for labour in the secondary and primary sectors (Xu, 2006). These relentless forces increasingly erode the effect and duration of manufacturing subsidies as a means of job creation in regional areas. Effectively addressing declining regional-area jobs requires a shift in policy-focus away from primary- and secondary-sector medium-to-large firms to small- and micro-firms. Much of the argument against using small- and micro-firms arises from a general perception that SBs are too small and too ephemeral for spending on them to have a lasting effect. This study shows that the foregoing perceptions of SBs are irrelevant to Regional-SBs and limit the prospects

for Regional-SBs and the development of good policies for regional areas (Papadaki and Chami, 2002).

In this study, the term SB encompasses all SBs, without regard as to location (urban or rural) or size difference. It is based on the Australian Bureau of Statistics (ABS, 2016) definition of SBs as firms with under 20 employees.

According to the ABS, SBs makeup over 95 per cent of Australian businesses (see Table 1) and contribute 34 and 46 per cent of Australian GDP and non-agricultural remunerative effort, respectively. The major contribution of SBs to society is wealth distribution via remunerative employment and/or returns to owner operators (Fritsch and Weyh, 2006). Thus, SBs are not Australia's economic powerhouses, but they sustain socio-economic stability in their regions.

Table 1. Distribution of Firms and Employment for Australia's Private Sector.

Paid Employees	Share of firms (%)				Employment (%)		Value-added (%)
	2000	2006	2011	2013	200	2011	2011
0	48.7	58.9	61.2	60.8	0.0	0.0	33.7
1-4	32.8	25.2	23.9	27.1	13.2	45.7	
5-19	15.0	11.6	10.8	9.5	25.1		
20-99	3.0	4.1	3.8	2.4	22.4	24.3	23.4
100-199	0.3				8.8		
200+	0.2	0.3	0.3	0.2	30.4	29.9	

Notes: In 2014, 61% of actively trading businesses in Australia had no employees, 27% had 1-4, 10% had 5-19, 2% had 20-199 and less than 1% had 200 or more. Source: DIISR (2012); ABS (2002; 2008; 2012; 2014) Catalogues 1321.0, 8167.0 and 8165.0.

The employment effects of new enterprises are well studied (Fritsch and Weyh, 2006; Fritsch, 2008). The economic importance of SBs becomes more apparent when returns to SB entrepreneurs are added to the mix (North and Smallbone, 1996; Baptista *et al.*, 2008). DIISR (2012) notes that over half of SB operators are 35-54 years old. This motivates the question: Are SBs soaking up the many older-semi-skilled workers being shed from medium-to-large firms? If SBs provide that social service, Regional-SBs are performing a crucial stabilising role by reducing labour migration from their regions to metropolitan areas. Regional-SBs are likely the *employers of last resort* if there are few work opportunities in a region. Østbye *et al.* (2018) suggest that, when skilled people are shed by corporations many will form Regional-SBs, those new firms then create more jobs, and those new jobs attract more skilled

people in what becomes a *virtuous circle*. Naveed *et al.* (2016) gave further credence to such virtuous labour cycles when they found that the resulting labour inflow can create a local labour base. Nyström's (2018) notion of regional resistance adds even more plausibility to the idea that strong Regional-SBs are vital to regional viability.

Small businesses are generally perceived to be ephemeral, high risk for credit and/or risky investment prospects (Kalleberg and Leicht, 1991; Hartcher *et al.*, 2003; Mills and McCarthy, 2014). If this general perception of SBs is true, it would be risky to use Regional-SBs as a policy focus. Table 2 shows that SBs have a lower survival rate than medium-to-large firms. When the information from Table 2 is combined with that from Table 1 it becomes apparent why there is a general perception of SBs being ephemeral. Specifically, in June 2013, non-employing SBs have the lowest survival rate (57.2 per cent) and are the largest group of firms (i.e. 60.8 and 62.4 per cent of all firms and all SBs, respectively), SBs with 1-4 employees had the next lowest survival rate (68.4 per cent) and were the next largest group of firms (i.e. 27.1 and 27.8 per cent of all firms and all SBs, respectively) and SBs with 5-19 employees had the third lowest survival rate (76.1 per cent) and were the third largest group of firms (i.e. 9.5 and 9.8 per cent of all firms and all SBs, respectively). Combining the data in Tables 1 and 2 (i.e. the relative weighting is from Column 5 in Table 1, and the survivorship is from the last Column in Table 2,) gives an average four year to June 2013 survivorship of 62.2 and 82.4 per cent, for SBs and medium-to-large firms, respectively (e.g. $(0.608 \times 57.2 + 0.271 \times 68.4 + 0.095 \times 76.1) / 0.974 = 62.16 \approx 62.2$). Thus, expected survival (a key element of creditworthiness) varies with the SB size. The next section will look at the effects of firm location on SB survival.

Further support for the unique contribution of Regional-SBs (in comparison to Urban-SBs) comes from the Locational Economics' notion that: while economic flows into rural regions tend to continue on to the regional centre, and then on to nearby metropolises, flows into metropolises tend to flow to larger metropolises (Morgan, 1997; Hettihewa and Wright, 2007; Fritsch, 2008).

Table 2. Cumulative Survival-Rate (Percentage) by Firm Size and Inferred Annual Loss-Rate.

Firm size (employees)	Survival rate Jun/2007-Jun/2014				Survival rate Jun/2009-Jun/2014			
	Jun/08	Jun/09	Jun/10	Jun/11	Jun/10	Jun/11	Jun/12	Jun/13
0	80.4	67.7	60.1	54.0	83.8	72.9	64.5	57.2
1-4	89.5	79.9	72.9	67.0	90.4	82.1	75.5	68.4
5-19	92.7	85.3	79.2	74.0	93.7	87.6	82.1	76.1
20-199	94.0	86.5	80.6	75.8	95.9	91.6	87.4	82.7
200+	93.9	86.5	78.3	74.3	89.8	86.1	83.1	79.6

Source: ABS (2012), Catalogue No. 8165; ABS (2013), Catalogue No. 8165, Table 15.

3. CONTRASTING THE REGIONAL SB IDENTITY WITH GENERAL PERCEPTIONS OF SBS

Nearly a third of Australian SBs operate in regional Australia (DIISR, 2011) and, in total, these Regional-SBs make a vital contribution to their local economy. However, most SB statistics arise from data that do not differentiate SBs by location. This study suggests that undifferentiated SB data under-represents Regional-SBs and over-represents Urban-SBs. If SBs, irrespective of location, share a common identity then there is little or no issue with SB data tending to over-represent Urban-SBs. If, however, SBs differ significantly by location, size, gender of owner/operator, etc., then SB image/identity generated by undifferentiated SB data can lead to SB policies and lending practices by creditors that are unhelpful and possibly even damaging for Regional-SBs and their regions (Australian Government, 2009; MAV, 2009; DIISR, 2012).

There are good reasons for believing that the identity (common view/attributes) of SBs varies by location (Backman, 2014). For example, the:

- Density of customers, suppliers, and creditors varies with location and that variance will drive changes in the strategies, marketing, ethics, and worldview of SB operators.
- Turnover of customers, as noted previously, will be much higher for Regional than Urban SB and that variance will drive changes in strategies, marketing, and ethics of SB entrepreneurs.
- Opportunity costs of SB owner/operators in urban/metropole centres are greater than those of their regional area counterparts and the survival rate of SBs is likely to vary with those costs.

- Family, emotional, and other commitments of SB owner/operators to their local communities likely varies counter to the local population density and, as a result, the costs/consequences of SB failure, also, varies counter to the local population density.
- Shutting down and restarting an SB is easier and cheaper in crowded metropolises than in thinly-populated regional areas. As a result, SB-survival rates are likely to be much higher in regional areas.
- Cultures can vary across regions as well as by population density and affect entrepreneurial norms and practises (Aoyama, 2009).

While the above logic appears to be sound, logic is strengthened or refuted by empirical results and empirical analysis should be guided by hypotheses drawn from extant literature and other key sources. The following null-hypotheses are drawn and developed from a review of SB and finance literature:

H₀ 1: Australian Regional-SBs are sufficiently similar to Urban SBs that Regional-SB statistics do not materially differ from those of the average Australian SB.

Failure to reject H₀ 1 will suggest that SBs are sufficiently similar that averages do not materially distort the representation of SB subgroups. This is a vital issue; if affirmed, the perceived high-risk/poor-credit worthiness of SBs is valid (Carter and Auken, 2006; DIISR, 2012).

H₀ 2: The size of Australian SBs does not materially affect the attributes of SBs.

Failure to reject H₀ 2 will mean that perceptions based on average Australian SBs are appropriate for making decisions about most SBs, irrespective of size (Carter and Auken, 2006).

H₀ 3: The application of technology is not affected by firm location.

Failure to reject H₀ 3 will suggest the take-up of new technology is uniform across Australia and that there is no need for affirmative action to assist Regional-SBs with technology. Counter arguments are provided by Lai (1994), Premkumar and Roberts (1999), and Sorensen (2015).

H₀ 4: Financial issues/worries in a Regional-SB are not a function of its financial structure and other attributes.

Rejecting H_0 4 will mean that Regional-SBs can be helped or hurt by policy and other government actions (Myers, 1984; Becchetti and Travato, 2002).

H_0 5: The gender of proprietors does not influence their managerial choices, decisions and/or access to resources.

Failure to reject H_0 5 will suggest that Regional-SB attributes are not correlated with the gender of their owner/operator; those attributes cannot be used to identify the gender of a Regional-SB; and will argue against the need for affirmative action in Regional-SBs, on the basis of gender. Discussions of this important issue can be found in Kalleberg and Leicht (1991), Tigges and Green (1994), Robinson (2001), and Bird and Sapp (2004).

H_0 6: The attributes of Regional-SBs do not influence its survivorship.

Failure to reject H_0 6 will suggest there is little-or-no value in profiling firms to estimate their survivorship before extending credit or investing in them and that managerial decisions have little influence on survivorship (Bickerdyke *et al.*, 2000; Carter and Van Auken, 2006).

4. METHODOLOGY

This study follows a cautious path of testing for significant differences between Regional-SBs in an Australian region against the average statistics released for all Australian SBs. Regional-SBs contribute a third of the Australian SBs average statistics (DIISR 2012). Thus, the locational effects will need to be strong to yield statistically significant differences between the pure Regional-SB sample and the mixed (one-third Regional-SB and two-thirds Urban-SB) Australian Average-SB statistics.

Key attributes of Regional-SBs are drawn from a sample taken (via a stratified-random process) from the 2 195 Regional-SBs listed in Ballarat's 2014 Business Directory. The fast-growing region of Ballarat (Victoria, Australia) had a population of 95 021 in 2012 and 100 834 in 2015 (City of Ballarat, 2015). Ballarat was selected as the sample area in this study based on the assumption that, if there are significant differences between Urban SBs and Regional-SBs from a region like Ballarat, the differences are likely to be even more evident for Regional-SBs in stagnant or declining areas.

It is important to note that, after 2014, Ballarat took on more attributes of a *bedroom community* of Melbourne (the capital city of the state of

Victoria) and became less representative of regional Australia. While *bedroom communities* are geographically regional, in socio-economic terms, they tend to be part of a continuity with their urban focus (i.e. in a *bedroom community*, much or even most of the employment comes from commuting to a large urban centre). Specifically, during the period of this study (1994 to 2014), train travel between the central business districts (CBD) of Ballarat and Melbourne was fairly stable at around 90+ minutes. However, after 2014, improved infrastructure progressively contracted that commute. In 2018, the commute was 60 minutes and further improvements are expected. The shortened commute makes Ballarat more attractive as a *bedroom community* of Melbourne. As a result, after 2014, Ballarat and its region shifted from being part of regional Australia to the inter-zone of a *bedroom community*. Future research may find it useful to use this study as a baseline to examine what happens to Regional-SBs as their community evolves into a *bedroom community*.

Information regarding industry and size (under 20 employees) was obtained online and through phone calls to firms. This information was then used to vet the 800 drawn firms down to the initial sample size of 500. The 500 selected Regional-SBs were sent a questionnaire in 2014. The response rate of 33.8 per cent is reasonable for mail surveys (Baker *et al.*, 2011). Given that restaurants typically make-up a very large proportion of SBs (≥ 60 per cent), this study stratified the sample to limit the restaurant representation to 30 per cent of the Regional-SBs sent questionnaires and prevent restaurants from overwhelmingly dominating the sample.

The analysis of differences between Regional- and Urban-SBs is in two parts. The first is presented in the next section, via a direct comparison of firm survival rates, internet usage, and the search for predictors of the gender of SB owner/operators. Following this the second part uses statistical analysis (ordinal-logistic- and binary-logistic-regression models) to examine:

- i) The Relationship between Regional-SBs' perceived financial condition and the independent variables of firm's capital structure, firm-specific attributes, and management-specific attributes, including gender;

- ii) Attributes of a Regional-SB perceived financial condition and financing choices and non-gender characteristics of the entrepreneur, that can be used to predict the gender of a Regional-SB entrepreneur; and
- iii) Perceived financial condition, attributes, financing choices and characteristics of Regional-SB that can be used to predict the age of the firm (sustainability proxy).

5. ANALYSIS OF THE QUESTIONNAIRE RESPONSES AND CONTRAST WITH THE AVERAGE AUSTRALIAN SB

The age structure of the responding Regional-SBs is given in Table 3.

Table 3. Firm-Age-Distribution of Participating Regional-SBs.

Firm age (yrs.)	Regional-SBs by firm size (employee numbers)							
	% of sample			Cumulative %			Annual Continuity %	
	0-4 Emp.	≥5 Emp.	All	0-4 Emp.	≥ 5 Emp.	All	≤ 4	≥ 5
< 1	2.5	0.0	1.3	100.0	100.0	100.0	100.0	100.0
1-3	20.0	7.9	14.1	97.5	100.0	98.7	98.7	100.0
3-5	20.0	7.9	14.1	77.5	92.1	84.6	93.8	98.0
5-10	25.0	39.5	32.1	57.5	84.2	70.5	92.9	97.7
> 10	32.5	44.7	38.4	32.5	44.7	38.5	92.7	94.8
Total	100.0	100.0	100.0					

Source: the Authors.

Table 4 takes the Table 3 age structure and conservatively estimates the four-year-to-2013 survival rate of the responding Regional-SBs (i.e. the actual rates are likely higher) and contrasts it with the corresponding average Australian SB survival rate in Table 1. At 84.6 per cent (see Table 3), the survival rate of four or more years for the sampled Regional-SBs was very much greater (≈ 40 per cent) than the average for Australian SBs (Table 1, Column 5; $(0.608 \times 57.2 + 0.271 \times 68.4 + 0.095 \times 76.1)/0.974 \approx 62.20$; $84.6 - 62.2 = 22.4$). When the analysis is separated into Micro-firms (i.e. under 5 employees) and Large-SBs (5-19 employees) the four-year-survival rates of 77.5 and 92.1 per cent, respectively are close to and far better than those of the Medium-to-large businesses. As a result of this finding, $H_0 1$ is rejected suggesting that Regional-SBs are more durable than the national average and, by

extension, far more durable than Urban SBs. Thus, unlike Urban SBs, Regional-SBs are likely excellent policy targets for regional growth and stability and, depending on size, are good to excellent candidates for credit. Substantial differences between the four-year-survival rates of micro-firms (>5 employees) and larger-SBs (5-19 employees) in Table 4 (i.e. 77.5 vs. 92.1 per cent for Regional-SBs and 56.5 vs. 76.1 for the average Australian SB, respectively) mean that $H_0 2$ (i.e. no difference by size) must be rejected.

The above durability of Regional-SBs differs greatly from previous findings on SBs. Specifically; Bickerdyke *et al.* (2000) support the view of SBs being high risk by contrasting a (by decade) mean-cessation rate of 43.5 per cent (i.e. 1 - the continuity rate) for SBs and 27.1 per cent for medium-to-large-businesses; A Dun and Bradstreet study looking at one million SBs show that 55 per cent attained a low credit ranking (Hammond, 2012); and DIISR (2012) found a four-year (2007-11) survivorship of 60.0 per cent for all Australian firms, that splits for large, medium and small firms into, respectively, 74.3, 75.8 and 59.7 per cent. Thus, there is a common perception that SBs have a relatively low survivorship and, hence, a high risk of being unable to repay loans/payables and/or provide a fair return to investors. In counter point to the common assumption that low survivorship reflects low credit worthiness, Law and McLellan (2005) suggest that low-continuity for SBs may reflect dynamism, rather than fragility. In contrast to the common perception of SBs having a relatively low survivorship, this study (Tables 3 and 4) suggests that they have good-to-excellent relative survivorship (see Table 2).

Table 4. Community and Firm Size.

Firm Size	≥ 4 yrs survival (%)			Regional-SBs/SB ratio 2011	Regional-SBs/SB ratio 2013
	Regional-SBs* in Sample	SBs† to 2011	SBs† to 2013		
All	84.6	59.5	62.1	1.42	1.36
0-4 employees	77.5	55.5	56.5	1.40	1.37
5-19 employees	92.1	74.0	76.1	1.24	1.21

Source: * Adapted from questionnaire responses and Tables 1 and 2; † Adapted from Tables 1 and 3.

The internet's capacity to shrink distance and barriers can increase the business catchment areas of more technically-savvy Urban-SBs and places less-technically-savvy Regional-SBs at risk (Hettihewa and Wright, 2010; Sorensen, 2015, Eggers *et al.*, 2017). Premkumar and

Roberts (1999) assertion that firms “...adopt technology only if they perceive a need for the technology to overcome a performance gap or exploit a business opportunity” was supported by Nguyen, *et al.* (2015) who found that SB adoption of technology resulted from a desire to please customers.

This study heeds Collits and Rowe’s (2015) call for more comprehensive Regional-SB data, so as to develop sound policy responses to the threats/opportunities posed by globalization and technological advances. Linton and Solomon (2017) assert that SBs adopt technology in response to a series of transitions or shocks.

Table 5 suggests that, in terms of the practical application of the internet to the generation of sales, the respondent Regional-SBs lag far behind the efforts of average Australian SBs (compare Columns 2-4 to the last Column, in Table 5). While they are just starting to catch-up, the majority of responding Regional-SBs do not see the internet as a serious marketing tool. This apparent reluctance to embrace change suggests that (converse to the Linton and Solomon, 2017 assertion) Regional-SBs currently have a much more stable environment than that of Urban-SBs (i.e. less need to adapt to transitions or shocks).

Table 5. Share (%) of Sales Generated by the Internet.

Percent of Sales from Internet	3 years Ago	Currently 2014	Expected in 3 Years	Clark <i>et al.</i> 2010/11
00	97.4	78.2	60.3	} 24.4
>00-05	0.0	2.6	10.3	
>05-10	1.3	5.1	6.4	} 32.3
>10-15	0.0	5.1	0.0	
>15-20	0.0	6.4	1.3	} 38.4
>20-30	0.0	0.0	3.9	
>30-50	1.3	1.3	12.8	
> 50	0.0	1.3	5.1	
Total	100.0	100.0	100.0	n/a

Source: The Authors – Responses to the questionnaire in this study contrasted with Clark *et al.*, 2012.

The apparent disparity between the level of sales generated by the internet for regional SBs and the average Australian SB indicates that $H_0 3$ must be rejected and support for Regional-SBs internet marketing is likely to be an appropriate government policy option. This lack of enthusiasm for the adoption of technology by Regional-SBs is very important, in that expanded internet use can dramatically enhance the scope, reach, and competitiveness of Regional-SBs. If future research

determines the extent of Regional-SB reluctance to adopt new technology and the reasons for that reluctance, it will greatly assist the government in designing its policies to assist Regional-SBs.

6. EMPIRICAL ANALYSIS - MODEL SPECIFICATION, FINDINGS AND FUTURE RESEARCH

Model Specification

The Regional-SBs' perceived financial concern, the predictability of the gender of its entrepreneur, and its firm-age are examined based on standard multiple regression models. The general form is given below:

$$Y = \beta_0 + \sum_{i=1}^n \beta_i x_i + \sum_{i=1}^m \lambda_i z_i + \sum_{i=1}^k \delta_i p_i + \varepsilon \quad \text{eqn (1)}$$

Where:

Y = dependent variable (question asked)

x_i = firm-specific variables, $i = 1, \dots, n$

z_i = management-specific variables, $i = 1, \dots, m$

p_i = perceived-risk variables, $i = 1, \dots, k$

ε = unexplained-error disturbances.

Table 6 defines the variables in eqn (1) and three models are drawn from that equation to test financing, gender and continuity issues. Each model re-classifies one variable as dependent, leaving potential independent variables that were reduced to a small set to mitigate over-specification and multicollinearity issues. Regression analyses were conducted using *SPSS-statistics 19* software.

Table 6. Variable Descriptions.

Variable description/Symbol		Abbreviation	Variable Effect	Parameter
1 Employment	χ	Emp	Firm-specific	β_1
2 Revenue	χ	Rev	Firm-specific	β_2
3 Firm age	χ	FAge	Firm-specific	β_3
4 Bookkeeping frequency	χ	FRec	Firm-specific	β_4
5 Internet future access	χ	Ifa	Firm-specific	β_5
6 Internal capital	χ	KapIn	Firm-specific	β_6
7 Trade credit capital	χ	KapTC	Firm-specific	β_7
8 Short-term bank loans	χ	KapBS	Firm-specific	β_8
9 Medium-term bank loans	χ	KapBM	Firm-specific	β_9
1 Long-term bank loans	χ	KapBL	Firm-specific	β_{10}
1 Difficulty with interest rate	χ	IR	Firm-specific	β_{11}
1 Financial difficulty	χ	FC	Firm-specific	β_{12}
1 Respondent education	φ	REd	Management-specific	λ_1
1 Respondent gender	φ	RGen	Management-specific	λ_2
1 Respondent age	φ	RAge	Management-specific	λ_3
1 Respondent management experience	φ	RMExp	Management-specific	λ_4
1 Respondent work experience	φ	RWExp	Management-specific	λ_5
1 Perceived total risk	γ	TR	Risk Factors	δ_1
1 Perceived cash-flow risk	γ	CFR	Risk Factors	δ_2
2 Perceived credit-access risk	γ	CAR	Risk Factors	δ_3
2 Perceived size risk	γ	SR	Risk Factors	δ_4
2 Perceived new-market risk	γ	NMR	Risk Factors	δ_5
2 Perceived business-innovation risk	γ	BIR	Risk Factors	δ_6

Source the Authors.

Analysis and Findings

Model 1 (finance concerns): The dependent variable in this model reflects the respondent assessment of their business's funding problems on a scale of 1-5 (respectively, strongly agree to strongly disagree). The regression analysis uses 156 observations. The dependent variable is regressed with 16 predictors using the ordinal-logit function of SPSS 19: The ordinal nature of the finance variable suggests that an ordered-logit or ordered-probit model is appropriate for analysing this data set (Greene and Hensher, 2010). The ordered-logit model was used in this study.

$$\begin{aligned}
 FC = & \beta_0 + \beta_2 \text{Rev} + \beta_5 \text{Ifa} + \beta_6 \text{KapIn} + \beta_8 \text{KapBS} + \beta_9 \text{KapBM} \\
 & + \lambda_1 \text{REd} + \lambda_2 \text{RGen} + \lambda_3 \text{RAge} + \lambda_4 \text{RMExp} + \lambda_5 \text{WExp} \\
 & + \delta_1 \text{TR} + \delta_3 \text{PCAR} + \delta_4 \text{SR} + \delta_5 \text{NMR} + \delta_6 \text{BIR} + \varepsilon
 \end{aligned}
 \quad \text{eqn (1.1)}$$

The likelihood-ratio chi-square test is used to assess the overall significance of eqn (1.1). Table 7 gives the model's independent variables. The model fit $\chi^2 (16, N = 156) = 55.63, p < .001$; indicates the estimated coefficients significantly differ from zero, at a 1 per cent significance. Model 1.1 explained 34 per cent of the variance (Nagelkerke R²).

Table 7. Statistical Results for eqn (1.1) Link Function: Logit.

Variable	Estimate	Std. Error	Sig.
Rev	-0.197	0.159	0.216
Ifa	4.549***	1.147	0.000
KapIn	-1.099	0.756	0.146
KapBS	-4.535***	1.495	0.002
KapBM	-1.705*	0.981	0.082
IR	-0.752***	0.258	0.004
REd	-0.268	0.190	0.159
RGen	0.443	0.462	0.338
RAge	0.312	0.286	0.276
RMExp	-0.294	0.211	0.164
RWExp	0.395**	0.193	0.040
TR	0.656***	0.242	0.007
CAR	-0.231	0.197	0.241
SR	-0.236	0.192	0.220
NMR	0.455**	0.195	0.019
BIR	-0.165	0.201	0.410

Notes: * Significant at 10%; ** Significant at 5%; *** Significant at 1%. Source: the Authors.

Seven independent-variables make statistically significant contributions to the prediction of the dependent-variable, financial difficulty, so H₀ 4 is rejected. These results are consistent with Nassimbeni's (2001) findings for larger firms, our underscoring of the import of internet access to the viability of Regional-SBs and the link of future internet access to Regional-SBs. Financial concerns suggest that policy makers may need to focus on firm internet use to strengthen the ability of Regional-SBs to meet accelerating changes, competition, and opportunities arising from globalization and information technology. Becchetti and Travato (2002) and Huynh and Petrunia (2008) found that sales growth was positively correlated with indebtedness. While this study does not look at firm growth, three attributes associated with firm growth, i.e. entrepreneur experience, awareness of total risk and new-market risk, were found to be

positively correlated with the entrepreneur's financial concern. Bank short- and medium-term loans and interest-rate concerns are negatively correlated with financial concerns, as is entrepreneur-work experience.

These findings are eminently sensible, suggesting that experience makes entrepreneurs more aware of what can go wrong, and are consistent with the extant literature. Specifically, many SBs suffer disproportionately from tight-credit policies (Craig *et al.*, 2006; DIISR, 2011). Hoad and Rosko (1964) note a positive link between financial-market development and firm performance. Regional-SBs are perceived as having a relative lack of financial-market sophistication. Thus, credit availability can influence SB performance. Trade credit appears to be vital to Regional-SBs as a source of low-cost ready financing (García-Teruel and Martínez-Solano, 2007, 2010). Niskanen and Niskanen (2006) found that larger, older firms use less trade credit. It is unsurprising that high total-risk and new-market-risk perceptions lead to higher finance concerns. There is clearly a strong correlation between high-internet usage and finance concerns; what is difficult is finding the direction of causality, compelling future research.

Model 2 (gender issues): This model explores whether a Regional-SB's attributes can predict the gender of its entrepreneur. Gender has been an important variable in most previous SB studies. It is considered in this study, so as to maintain continuity with earlier studies and contribute to the debate as to whether or not gender is an important determinant of SB entrepreneurial behaviour. The dataset relates to a population of 60 women and 96 men and the binary-logit model is adapted from eqn (1) into the following equation:

$$\begin{aligned} \text{RGen} = & \beta_0 + \beta_2 \text{Rev} + \beta_3 \text{FAge} + \beta_4 \text{FRec} + \beta_7 \text{KapTC} + \beta_{10} \text{KapBL} + \beta_{11} \text{IR} \\ & + \lambda_1 \text{REd} + \lambda_3 \text{RAge} + \lambda_4 \text{RMExp} + \lambda_5 \text{RWExp} \\ & + \delta_1 \text{TR} + \delta_4 \text{SR} + \delta_5 \text{NMR} + \varepsilon \end{aligned} \quad \text{eqn (1.2)}$$

A Hosmer and Lemeshow chi-squared test assessed the goodness of fit of eqn (1.2). Garson (2014) asserts that this test is more robust than traditional chi-squared tests and classification tables. Omnibus Tests of Model Coefficient for Model 2 with 13 independent variables give an overall indication of the model performance. The results are: χ^2 (13, N=156) 90.71, $p < 0.001$; indicating that the estimated coefficients differ from zero, at a 1 per cent significance. Model 2 explained 44.1-59.9 per

cent of the variance (Cox and Snell R² and Nagelkerke R²). The Model 2 variable statistics are given in Table 8.

Table 8. Model 2 Results: Statistical Results of eqn (1.2).

Variables	B	S.E.	Wald	df	Sig.
Rev	-0.635*	0.299	4.520	1	0.034
FRec	-0.571	0.704	0.658	1	0.417
KapTC	3.588**	1.521	5.567	1	0.018
KapBL	-0.964	1.155	0.697	1	0.404
IR	-1.362***	0.479	8.066	1	0.005
REd	-0.558*	0.283	3.893	1	0.048
RAge	1.274***	0.402	10.066	1	0.002
RMExp	1.357***	0.375	13.112	1	0.000
RWExp	-0.303	0.239	1.607	1	0.205
TR	0.010	0.343	0.001	1	0.978
SR	-0.362	0.281	1.663	1	0.197
NMR	0.600**	0.253	5.635	1	0.018
Constant	0.057	2.675	0.000	1	0.983

Notes: * Significant at 10%; Significant at 5%; Significant at 1%. Source: the Authors.

In Table 8, seven independent variables have a statistically-significant contribution to the model; male owner/operators tend to be more experienced in management, older, more concerned with new-market risk, and much better at accessing trade credit; and, female entrepreneurs tend to have greater worries over interest rates, more education, and lower revenue. While H₀ 5 cannot be rejected based on these results, the need for affirmative action is unclear. Specifically, many of the issues may be short-term phenomena. The greater age and management experience of male entrepreneurs may partially explain their significantly-greater access to trade credit. These findings suggest improved access to lower-cost credit (trade-credit and bank-long-term loans) may reduce female-entrepreneur worries about interest rates.

Further research should investigate why female entrepreneurs tend to be younger with less management experience. It may be linked to the vital role that women play at home, especially if a female entrepreneur is married and/or has children. If family life heavily impinges on a woman's ability to work, it follows that mothers may have less management experience than married men (of the same age) and less experience may explain why female entrepreneurs tend to have lower revenues and fewer

concerns about the risks of new markets. On the other hand, male entrepreneurs may either be drawn to markets with higher new-market risk, perceive those markets as being riskier than females do, or be more likely to take bigger risks, fail and either try again or withdraw than female entrepreneurs. As a result, the lower-end of the performance distribution may be somewhat truncated for male entrepreneurs.

Model 3 (continuity): This model seeks to identify factors influencing a firm's continuity. Responses of a firm's age were collected as "<1", "1-3", "3-5", "5-10" and ">10" years of operation. The ordinal nature of the firm-age variable suggests that an ordered logit model is appropriate:

$$FAge = \beta_0 + \beta_1 Emp + \beta_7 KapTC + \beta_9 KapBM + \lambda_3 RAge + \lambda_5 RWExp + \delta_2 CFR + \delta_4 SR + \varepsilon \quad \text{eqn (1.3)}$$

The findings (model 3) show the likelihood ratio, χ^2 (7, N= 156) = 89.67, $p < .001$; indicating that the estimated coefficients significantly differ from zero, at a 1 per cent significance. Model 3 explained 43.7-46.9 per cent of the variance (respectively, Cox and Snell R^2 and Nagelkerke R^2). All of the independent variables are significant indicators of how long a firm has operated; with the number of employees, respondent age, respondent work experience, and Regional-SBs-size risk positively correlated; and trade credits, Bank-medium-term loans, and cash-flow risk negatively correlated. As a result, $H_0 6$ is rejected. The statistics for Model 3 are given in Table 9.

Table 9. Model 3 Results: Statistical Results of eqn (1.3).

Variable	Estimate	Std. Error	Wald	Sig.
EMP	0.209***	0.034	37.051	0.000
KapTC	-1.599**	0.696	5.276	0.022
KapBM	-5.898***	1.064	30.725	0.000
RAge	0.889***	0.247	13.001	0.000
RWExp	0.601***	0.150	16.030	0.000
CFR	-0.365***	0.128	8.094	0.004
SR	0.389***	0.140	7.707	0.005

Notes: * Significant at 1%; ** Significant at 5%; *** Significant at 1%. Source: the Authors.

Strong positive correlations for employee numbers, respondent work experience, and respondent age with the Regional-SBs age (Table 9) may be an artefact of the Regional-SBs age (e.g. older firms have more

employees and an older entrepreneur may gain experience as they and their firm age). The positive correlation between Regional-SBs-size risk and age may reflect the importance of experience in identifying risks. Overall, this study highlights the value of maturity and work experience to firm survival, with older firms benefiting from the expertise of older entrepreneurs.

Strong-negative correlations for bank-medium-term loans and cash-flow risk with Regional-SB age suggests that either Regional-SBs are able to divest themselves of their medium term loans as they age or that medium-term loans reduce Regional-SB longevity. The strong negative correlation between cash-flow risk and Regional-SB age is an indicator of the importance of cash-flow to firm survival (e.g. firms deal with cash-flow issues as they age, or they are unlikely to age). The weaker but still robust negative correlation between trade credits and Regional-SB age is consistent with younger firms having less access to other forms of funding than older well-established firms. This finding is in line with Freear *et al.* (1995). Research on Regional-SB and on this dimension is scant, but the findings of many researchers, that smaller less transparent firms rely on insider and trade finance, are consistent with the findings of this study (Berger and Udell, 1998).

In summary, the negative correlation between Regional-SB age and medium-term loans, high-cash-flow risk, and high reliance on trade credits indicate that Regional-SBs wishing to survive into the long-term should optimize cash-flow risk and reduce their reliance on medium-term loans and trade credit (Cash-flow risk is ranked in the questionnaire on a 1-5 Likert scale from very-high to very-low.). Clark *et al.* (2012) found that only a small per cent of nascent and young Australian SBs used trade credit. While the use of trade-credit funding is often seen as a weakness, being able to access some credit is better than none. Thus, the relative inability of young Urban-SBs to access or otherwise use trade credit as a source of funding may be a major contributor to their survivorship being significantly lower than that of Regional-SBs.

Our study did not find the same dynamism that Anderson (2000) found in Regional-SBs of Scotland. However, the difference in dynamism can be explained by the observation that the regional areas of the relatively young countries of Australia, Canada and New Zealand are still draining. Whereas, regional areas of Scotland have been extensively drained of people over the past three centuries and now changes in infrastructure are encouraging a small backflow into them.

7. CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

This paper shows that: i) Regional-SBs have an identity that differs significantly from that of urban small businesses (Urban-SBs); ii) Regional-SBs contribute greatly to their region's socio-economic viability; and iii) Policies directed at strengthening Regional-SBs should enhance regional socio-economic viability and, thereby, greatly enhance the quality of life by slowing or reversing the flow of people from regional areas to urban/metropolitan areas.

There are significant differences in the *survivorship* of sub-groups of SBs. Specifically, Regional-SBs have a profoundly higher survivorship than that of SBs in general. Also, SB subgroup survivorship can vary significantly with firm size (the combined effect of SB location and firm size is profound). The major relationships revealed were between three dependent variables and several independent variables i.e. a significant portion of the variation in financing concerns was predicted by interest rates, internet use and manager specific characteristics (gender); survivorship was impacted by credit worthiness and financing sources; and firm continuity was affected by firm specific variables, manager specific variables and financial concerns. These findings are very different from what has been reported in the literature for undifferentiated SBs suggesting that Regional-SBs may provide a good policy focus for government efforts to aid regions that are depopulating and socio-economically moribund.

Regional-SBs tend to have attributes, behaviour, and needs that differ significantly from urban-SBs. Thus, policies based on average-SB attributes may yield inefficient outcomes for regional communities. For example, continuity and stability may be better for rural/regional communities than the growth-focused policies favoured in urban centres.

While the value added created by Regional-SBs is modest, they are key employment engines and, in that role, are vital for socio-political stability in their areas. Regional-SBs facilitate the migration of labour from the shrinking primary and secondary sectors into the growing tertiary-sector. In addition, their value added, with multiplier effects, tends to enrich their region and via flow-on-effects, larger urban centres. The findings of this study represent how firm- and management-specific variables impact Regional-SBs. Given the pivotal role that Regional-SBs play in sustaining dynamic socio-economic stability, a failure to promote Regional-SBs may lead to even greater population concentrations in urban areas, with regional areas shifting from being vital sources of

wealth and culture to zones of poverty, leading to unrest. While SBs are well researched, the study of SB sub-groups is somewhat nascent. Thus, this study is timely and should be useful to policy makers, the business community and creditors. While this study's findings are applicable to any developed economy, there are a number of limitations that future research may resolve by considering: multi-country and cross-regional comparisons; and the effect of differences in tax regimes, grant schemes, infrastructure, etc. on rural entrepreneurs. Furthermore, panel-data analysis may provide additional insights.

A caveat to the findings in this study and to the design of future studies is that sampling structure can affect outcomes. Specifically, as noted previously (see note 3), a choice had to be made in this study as to whether to have a study mostly about restaurants (≥ 60 per cent of the sample) or to use structured random sampling with restaurant responses limited to 30 per cent of the total (this study uses the latter approach). Future research should evaluate the degree to which the finding of Regional-SBs being more durable is a geographic fact or is due to the weighting of restaurants being reduced (from ≥ 60 per cent) to 30 per cent. Restaurants tend to be micro-firms, which this study suggests have a much lower durability than larger SBs.

The key contributions of this study are that, in terms of SB durability, size and geography do matter. More studies on the extent and causes of variability in SB durability are needed.

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