Regional Small Business as an Underappreciated Response to Globalisation-induced Socio-economic Instabilities

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ABSTRACT

The realities of subgroups of regional small businesses (regional-SBs) are essential for proper policy process but are under-researched. This study explores and seeks to reduce the aforementioned gap. Firm-and-manager-specific attributes of regional-SBs (drawn from a sample of 500 Australian regional-SBs) are evaluated to determine if they differ from common perceptions of small businesses (SBs) and have predictive power in terms of regional-SBs. It was found that regional-SBs: Differ significantly from urban-SBs; Contribute significantly to regional socio-economic stability; Are far more robust and credit-worthy than generally perceived; and are influenced by the gender of their entrepreneurs. These findings can greatly serve the national interests of Australia and other countries. Specifically, as globalisation and technological change compel primary and secondary sectors to shed labour, regional-SBs sustain the socio-political stability of their regions by providing a means to soak-up redundant labour.

1. INTRODUCTION

Small businesses (SBs) are a prolific source of employment in developed countries and are a vital means of soaking up much of the labour being continuously shed by mid-to-large, primary-and-secondary sector firms (Baptista *et al*, 2008). Given the mounting competition arising from globalization, examining the attributes and differences of SBs based on locational and other differentiations is timely (Collits and Rowe 2015). SB data is rarely differentiated by location and mixed cohorts are heavily biased to urban/metropolitan SBs. Thus, the realities of regional small business (regional-SBs) are under-represented (Kennedy and Tennent, 2006). Common SB perceptions that form the basis for many business decisions/policies are derived from studies of urban SBs or undifferentiated SBs (Aoyamma, 2009; Papadaki and Chami, 2002). This lumping of disparate SBs is further exacerbated by a failure to differentiate micro-businesses (those with under-five employees, $SB_{0\text{-}4}$). Hettihewa and Wright (2007) assert that regional-SBs help sustain the socio-economic stability of regional communities and flows to regional centres and on to large-urban centres.

The objectives of this paper are to examine: i) Adequacy of agglomerated-SB data to represent regional-SBs; ii) Relationship between regional-SB financing and firm- and manger/ owner-specific variables; and iii) Size differences of SBs, to better focus regional policies. This study seeks to determine whether aggregate SB information misrepresents the situation of small regionally-based enterprises by adding a regional-SB dimension to a SB literature

that is often dominated by studies of urban-SBs.

This study draws key firm-specific and manager-specific attributes of regional small businesses (regional-SBs) from a sample of 500 regional-SBs, from a growing regional city in Australia. In this study, the term SB encompasses all small businesses **without** regard to location or size. Undifferentiated-SB data (dominated by urban-SBs) risks deficient policies that may damage regions (Australian Government, 2009; DIISR, 2012), fail to consider locality as a key productivity determinant (Backman 2014; Tomaney, 2012) and do not understand that regional-SBs tend to endure operating environments that are more capricious than those of urban-SBs. Thus, it is vital that regional-SBs be evaluated apart from urban-SBs. That awareness is vital to the construction of policies to promote regional-socio-economic sustainability and to decrease the on-going people drain to urban areas.

Consistent with common usage, this study uses SBs as a generic term that does not differentiate by location (urban or rural) or by size within the SB range of 0-19 employees. In SB research, micro-businesses are often either lumped in with SBs that have 5-19 employees, or ignored. This study highlights the *SB-differentiation* gap in the literature by examining regional-SBs separately and further sub-classifying for micro-businesses. The dearth of research on regional-SBs is acknowledged (Fritsch, 2008). Many business and policy decisions are derived from an undifferentiated view of SBs (Papadaki and Chami, 2002). Entrepreneurial objectives and practices are shaped by distinctive regional norms Aoyama (2009). As a result, regional policies do not reflect regional-SBs and SB-subgroups including micro-businesses realities; (Kennedy and Tennent, 2006).

The importance of size difference is highlighted by the Australian Bureau of Statistics (ABS) (2015) observation that most actively-trading businesses had annual turnover under $200,000 and (in 2014) 61 percent of actively-trading businesses in Australia had no employees while 27, 10, 2, and 1 percent had, respectively, 1-4, 5-19, 20-199, and 200 or more employees. However, the tendency to subsume regional-SB unique attributes was exacerbated when the ABS (2010), as a cost-cutting measure, started relying on Australian Taxation Office (ATO) data for SBs (i.e. the ATO considers only SBs with $10,000 to $5,000,000 annual incomes/expenses and ignores those below that range). More comprehensive regional-SBs data is needed because rising globalization is eroding distance-and-border barriers that once protected regional-SBs (Hettihewa and Wright, 2007; Sorensen, 2015) and the primary industries in which many regional-SBs subsist. This study asserts that while SB attributes and needs differ greatly by location, firm size and owner/ operator gender, those differences can be overlooked in common perceptions that arise from a general view of agglomerated SBs. This gap is the focus of this study.

1.1. SBs and Regional-SBs in Australia

The ABS definition of SBs (enterprises with 1-20 employees) is used in this study. Nearly a third of Australian SBs operate in regional Australia (DIISR, 2011). The relative importance of SBs to the Australian economy is high-lighted in Table 1, with SBs representing over 95 percent of firms, an employment share that rose from 38.3 to 44.0 percent from 2000-14, and over a third of economic value-added.

Given that majority of SB entrepreneurs are between 35-54 years (DIISR, 2012), it is important to determine if SBs are soaking up the workers being shed from medium-to-large firms. In that role, regional-SB performs a key stabilizing role by curtailing rural-labour migration to major cities. Regional-market lassitudes/barriers (Kotey and Sorensen, 2014) may have allowed regional-SBs to be less competitive than urban-SBs. Further, globalisation and internet with new challenges may put less-technically-savvy regional-SBs at risk.

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

Paid Employees	Share of firms (%)				Employment[1] (%)		Value-added
	2000	2006	2011	2013	2000	2011	2011
0	48.7	58.9	61.2	60.8	0.0	0.0	
1-4	32.8	25.2	23.9	27.1	13.2	45.7	33.7
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	42.9

Note: In June 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) and ABS (2002, 2008, 2012 and 2014).

The fast-growing region of Ballarat (Australia), with 95,021 residents in 2012 and forecasts of 100,834 and 128,331 for 2015 and 2031 is selected as the sample area, based on the assumption that, if there are significant differences between urban SBs and regional-SBs from a region like Ballarat, those differences are more evident for stagnant/declining regional-SBs.

The following research questions based on extant-SB literature are addressed in the study:

- Do SB attributes (including financial concerns) differ with the firm location, size, etc.?
- Do the regional-SBs behave differently from other SBs, based on the gender of the entrepreneur?

The remainder of this article is organized with: Section 2 providing a review of literature; Section 3 presenting research methodology; Section 4 giving model specification, findings and future research; and Section 5 presenting policy implications; limitations; and conclusions.

2. REVIEW OF LITERATURE

2.1 Theoretical Foundation – Capital Structure and Financing

The theoretical relationship between economic performance and financial facilities are extensively discussed and the debate goes back decades (Schumpeter, 1911). Institutional environment and local setting are key determinants of a firm's financing choices/decisions (Demirguc-Kunt and Maksimovic, 2008). The capital-structure-to-growth link is well studied for SBs (Reid, 1996), while knowledge gap in regional-SBs are recognised. If regional-SB-credit decisions are based on information that reflects urban-SBs, then the policy on financing of regional-SBs is likely to be Pareto sub-optimal (Guiso *et al*, 2004).

Given that capital-structure decisions (Terpstra and Olson, 1993; Modigliani and Miller, 1958) are critical to firm survivorship, suboptimal policies are likely to degrade regional-SB survivorship. Huynh and Petrunia (2010) found that leverage and initial size are positively correlated to new-SB growth. Pettit and Singer (1985) suggest that its growth stage affects a SBs need for, and availability of, financing. Berger and Udell (1998) find that smaller, less transparent, firms are more reliant on insider finance, trade-credit and angel capital than mature firms and that they have fewer financing choices.

Pecking Order Theory (Myers, 1984; Myers and Majluf, 1984) suggests that firms prefer internal finance and, if external finance is required, prioritize it on the basis of safety-and-ownership dilution (Sayed and Hettihewa, 2007). Freear *et al*. (1995) found that bootstrap financing was more creative than traditional financing approaches.

Following on from these extant studies, this study seeks to determine the significance of differences between SB sub-groups:

Financial risk: Many SBs suffer disproportionately from tight-credit policies (DIISR, 2011). Hoad and Rosko (1964) found a positive link between financial market development and firm performance. Thus, credit availability can influence SB performance.

Trade credit: is vital to regional-SBs as a source of low-cost ready financing. Niskanen and Niskanen (2006) found that larger, older firms use less trade credit. The reality of regional-SBs is yet to explore.

2.2 Perceptions of Continuity/Survivorship

SB survivorship is heavily researched (DIISR, 2012) but is limited for regional-SBs. This study asserts that the common perception that most SBs have low-continuity rates SBs (Mason, 2010) is biased by an inappropriate averaging of significantly different SB sub-groups and that some SB subgroups (including regional-SBs) are inappropriately tagged as high-risks borrowers.

Bickerdyke *et al*. (2000) support a SB-high-risk perspective by contrasting a (by decade) mean-cessation rate of 43.5 percent (i.e. 1 – continuity rate) for SBs and 27.1 percent for medium-to-large-businesses. Hammond, (2012) looking at one million SBs found that 55 percent attained low-risk ranking.

DIISR (2012) using Australian data gives a (2007-11) survivorship of all firms of 60.0 percent and of large, medium and small firms of, respectively, 74.3, 75.8 and 59.7 percent. Law and MacLellan (2005) argue that low-continuity rates reflect dynamism, rather than fragility. This paper suggests that perceived low-continuity rates for SBs are more an artefact of averaging than a reality for some SB subgroups.

Table 2: Cumulative Survival-rate (percentage) by Firm Size and Inferred Annual Loss-rate

Firm size (employees)	Survival rate from Jun/2007 to				Survival rate from Jun/2009 to			
	Jun/08	Jun/09	Jun/10	Jun/11	Jun/10	Jun/11	Jun/12	Jun/13
Non-employing	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) and ABS (2013, Table 15).

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	≥ 5	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					

Table 4: Continuity and Firm Size

Firm Size	≥ 4 yrs survival (%)			REGIONAL-SB Ratio/ SB Ratio to 2011	REGIONAL-SB Ratio/ SB Ratio to 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 questionaire responses and Tables 1 and 2; † Adapted from Tables 1 and 3.

Table 2 lists the survivorship of regional-SB_{5-19}, regional-SBs_{0-4}, and non-employing regional-SBs (2007-13) as, respectively, highest, much lower, and by far, the lowest. Table 3 lists firm age (a continuity proxy) of the regional-SBs participants. Among the regional-SBs reviewed in this study, regional-SB_{5-19} has the highest survivorship and urban-micro-businesses have the lowest (Table 4).

2.3 Gender Issues in Regional-SBs

Female participation in SB is far from representative of their proportion in society. The ratio of female SB proprietors in 2008 was 32 percent and is little changed in 2014 (ABS). The relationship between gender and other variables are heavily researched using SMEs and larger firms but there are few studies on regional-SBs. Marlow and Patton (2005) suggest that females have difficulty financing their firms but SME FDI (2006) and Stiglitz and Weis (1981) saw little evidence of gender-based discrimination. Statistics Canada (2006) found no evidence of discrimination, but Papadaki and Chami (2002) suggest indirect discrimination. Storey's (2004) review of racial-and-gender discrimination in the micro-firm credit market found no significant gender-driven issues. Shim and Eastlick (1998) say it is common to find that female entrepreneurs have less organizational-and-managerial experience than male entrepreneurs. Smeltzer and Fann, (1989) found that, if non-financial returns are considered, female-owned firms are equally successful. Sirinivason *et al*. (1994), note that female-owned firms tend to be smaller, with lower financial performance and slower growth. Ropper and Scott (2009) found that women are around 7.4 percent more likely to discover financial obstacles to business start-up.

2.4 Other Predictor Variables

Technology and globalization: The sheltered markets that allowed regional-SBs to be blasé about change are being eroded by *Globalization*. The import of networking to SBs is well researched (O'Donnell, 2014). However, the dearth of research on regional-SB-new-technology usage is worrisome, as competition that previously focused on *large-firms primary and commodity products* is starting to encompass the *low-and-high-tech-manufacturing market* domain of SB and Regional-SB markets (Nassimbeni, 2001).

Management-specific Variables: Parry (2010) researching barriers to growth in micro-firms highlighted the importance of business and owner attributes. Human capital contributes greatly to firm performance (Bharadwaj, 2000) and to productivity (Almeida and Carneiro, 2009; O'Mahony, 2012).

Firm-specific Variables: Much of the research on firm growth, size, age, and survivorship has yielded diverse results (Dunn and Hughes, 1994) rather than support for Gibrat's Law (Eeckhout, 2004).

3. RESEARCH METHODOLOGY

In this quantitative study, research questions and propositions are derived from a review of literature and contrasted with responses to an Australian regional-SB survey and substantiated via hypotheses testing. In the quantitative evaluation, ordinal-logistic- and binary-logistic-regression models examine: i) The relationship between regional-SB's perceived financial condition and independent variables; ii) Whether attributes can predict a regional-SB entrepreneur's gender, and iii) Whether the perceived financial condition, attributes, financing choices and entrepreneur characteristics can predict a regional-SB's age (sustainability).

3.1 Discussions, Research Questions and Propositions

Cressy (1996) noted that younger firms have lower survival rates, and Honing (1998) suggests that firms with employees are more successful in securing bank loans.

Discussion 1: Statistics (Table 2) and research show that survival/continuity and firm size are positively correlated (Eeckhout, 2004). SB data are mainly dominated by urban-SBs, but some research suggest that regional-SBs have higher-continuity rates because many are family-based, generations-old firms that put quality-of-life choices over profit (Floren et al., 2010). Given that continuity-rates likely vary with firm size, this study splits regional-SBs into micro-businesses (regional-$SB_{0\text{-}4}$) and other regional-SBs (regional-$SB_{5\text{-}19}$).

> Question 1a: Is regional-SB-continuity as low as that perceived for SBs?
>
> Question 1b: Does the microbusiness continuity show a different picture to regional-$SB_{5\text{-}9}$?
>
> Proposition 1: *Regional-SBs have a lower continuity than SBs.*
>
> Proposition 1a: *regional-$SB_{0\text{-}4}$ have a lower continuity than SBs.*
>
> Proposition 1b: *Regional-$SB_{0\text{-}4}$ has a lower continuity than* regional-$SB_{5\text{-}9}$.
>
> Proposition 1c: *The ratio of* regional-$SB_{0\text{-}4}$ over regional-SB *is much lower than* the *ratio of microbusinesses in SBs and that difference contributes significantly to a higher* regional-*SB continuity rate.*

Discussion 2: Given that regional-SB entrepreneurs have often lived in their region for decades they are more interested in lifestyle than economic growth (Hettihewa and Wright (2010). Jaouen and Lasch (2015) found that micro-firms focus more on short-term income and less on growth.

> Question 2: Is there a correlation between regional-SB's attributes and its entrepreneur's attitudes, and attributes?
>
> Proposition 2: The perceived financial condition, attributes, financing choices and characteristics of a regional-SB entrepreneur can predict its age.

Discussion 3: Geographic-and-transportation isolation in regional Australia suggests that many of its regional-SBs lack facilities, to upgrade/maintain entrepreneur knowledge. This isolation suggests that Australia's regional-SBs may be slow to uptake new technology and internet marketing.

> Question 3: Are regional-SBs less likely to adopt new technology?
>
> Proposition 3: Regional-*SBs are less* willing to adopt new technology.

Discussion 4: Location can affect financing issues and family-and-community ties can provide funding for regional-SBs (DIISR 2012). Distance from highly-competitive-banking environments may reduce access to external finding facilities.

Question 4: Do regional-SBs differ from (urban-dominated) SBs and do regional microbusinesses behave differently to overall regional-SBs?

Proposition 4a: *R*egional-SBs and urban-dominated SBs have different perceptions of the relationship between financing problems and firm-and-management-specific determinants.

Proposition 4b*:* The attributes, financing choices, and characteristics of regional-SBs can predict their perceived financial condition.

Discussion 5: SB research findings on gender issues are diverse.

Question 5: Are there unique gender issues for regional-SBs?

Proposition 5a: Regional-SBs and urban-dominated SBs display significant variation in gender issues.

Proposition 5b: A Regional-*SB's* attributes and non-gender characteristics of its entrepreneur can predict the gender of its entrepreneur.

3.2 Hypotheses

Null-hypothesis (H_o) 1: Australian regional-SBs are sufficiently similar to (urban-dominated) SBs that regional-SB statistics do not materially differ from those of Australian SBs. An affirmation would suggest that all SB sub-groups are sufficiently similar that averages do not materially distort the representation of any SB subgroup; its rejection suggests that such averages are inappropriate.

Null-hypothesis (H_o) 2: The gender of proprietors has no influence on their managerial choices, decisions and/or access to resources. An affirmation will suggest that: the attributes of regional-SBs are not correlated with the proprietor's gender, those attributes cannot predict the gender of a regional-SB owner and there is no need for gender-based affirmative action.

Null-hypothesis (H_o) 3: The attributes of a regional-SB do not influence its survivorship. An affirmation suggests that there is little-or-no value in profiling firms for credit/investment purposes and that managerial decisions have little-or-no influence on firm survivorship. A rejection suggests that management decisions/outcomes do influence a firm's survivorship.

3.3 Data Collection

Questionnaires were distributed to regional-SBs selected via a stratified-random process from Ballarat's Business Directory (2,195 firms). In a second selection-stage, drawn firms were vetted-down to 500 based on size and industry, using online information and phoning the business if the information was either unavailable online or was unclear.[1] The response rate of 33.8 percent is reasonable (Baker, Singleton, and Viet 2011).

3.4 Realities

Regional-SB continuity: The four-year-continuity rates for SBs and regional-SBs (derived from Tables 2 and 3 and listed in Table 4) show significantly lower rates for regional-$SB_{0\text{-}4}$ than those for SBs and much-lower than those of regional-SBs and supports proposition 1a (Table 4). An explanation for the continuity-rate difference in Tables 2 and 3 is that relatively larger SBs and regional-SBs have higher continuity than regional-$SB_{0\text{-}4}$ (which supports proposition 1a). Also, micro-businesses dominate national-firm numbers with a share that

[1] Given that restaurants typically make-up a very large proportion of SBs, this study stratified the sample to limit the restaurant representation to 30 percent of the regional-SBs sent questionnaires.

rose from 81.5 to 87.9 from 2000-13 (Table 1). The share of firms represented by SBs with 5-19 employees steadily fell from 15.0 to 9.5 percent during that period.

In the responding firms, regional-SB_{0-4} tended (Table 3) to be significantly younger than regional-SB_{5-19}, which supports proposition 1b. Information in Tables 2, 3, and 4 should interest creditors and policy makers, as it suggests that: 1) regional-SBs are likely more credit-worthy than what is generally supposed 2) Relatively larger regional-SBs may, based on higher survivorship, be more credit-worthy than micro-businesses.

Internet usage: Table 5 is consistent with Clark *et al*. (2012) and show that regional-SBs are making progress in adopting the internet (respondents' who used/use/will use the internet: three years ago, currently, and expect to in three years are, respectively, 5.6, 21.8, and 39.0 percent). However, a majority of responding regional-SBs do not see the internet as a serious marketing tool. Thus, the qualitative analysis sustains proposition 2 and requires policy opportunities to support regional-SB internet marketing.

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

% internet sales	3 yrs ago	Currently	Expected in 3yrs	Accumulated	Clark *et al*. (2013)	
					Goods	Services
00	97.4	78.2	60.3	100.0	55.0	72.0
00-05	0.0	2.6	10.3	39.7		
05-10	1.3	5.1	6.4	29.5		
10-15	0.0	5.1	0.0	23.1	20.0	14.0
15-20	0.0	6.4	1.3	23.1		
20-30	0.0	0.0	3.9	21.8		
30-50	1.3	1.3	12.8	17.9	10.0	4.0
> 50	0.0	1.3	5.1	5.1	16.0	9.0
Total	100.0	100.0	100.0	0.0	100.0	100.0

Source: Questionnaire responses, this study.

4. EMPIRICAL ANALYSIS – MODEL SPECIFICATION, FINDINGS AND FUTURE RESEARCH

4.1 Model Specification

The regional-SB's perceived financial concern, gender of its entrepreneur, and firm-age are examined using multiple regression models of the general form:

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

where:

y = dependent variable;

x_i = firm-specific variables;

z_i = management-specific variables;

p_i = perceived-risk variables; and

ε = unexplained error.

Three models are drawn from equation (1) to test financing, gender, and continuity issues. Each model re-classifies one variable as dependent, leaving potential independent variables that are reduced to a small set to mitigate over-specification and multicollinearity. After using a stepwise process, the reduced equations are given as equations (1.1), (1.2) and (1.3) for financing, gender and continuity (see Table 6) and were analysed using SPSS-statistics 19.

Table 6: Variable Description for Equations (1.1), (1.2) and (1.3)

	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	Internet future access	χ	Ifa	Firm-specific	B_4
5	Trade credit capital	χ	KapTC	Firm-specific	β_5
6	Short-term bank loans	χ	KapBS	Firm-specific	β_6
7	Medium-term bank loans	χ	KapBM	Firm-specific	β_7
8	Difficulty with interest rate	χ	IR	Firm-specific	β_8
9	Financial difficulty	χ	FC	Firm-specific	β_9
10	Respondent education	φ	REd	Management-specific	λ_1
11	Respondent gender	φ	RGen	Management-specific	λ_2
12	Respondent age	φ	RAge	Management-specific	λ_3
13	Respondent management experience	φ	RMExp	Management-specific	λ_4
14	Respondent work experience	φ	RWExp	Management-specific	λ_5
15	Perceived total risk	γ	TR	Risk Factors	δ_1
16	Perceived cash-flow risk	γ	CFR	Risk Factors	δ_2
17	Perceived size risk	γ	SR	Risk Factors	δ_3
18	Perceived new-market risk	γ	NMR	Risk Factors	δ_4

4.2 Analysis and Findings

Model 1 (Finance Concerns): The dependent variable in this model reflects the respondent's assessment of their business's funding problems on a scale of 1-5 (1=strongly agree). The regression analysis uses 156 observations. The dependent variable is regressed with 13 predictors using the ordinal-logit function of SPSS 19:[2]

$$FC = \beta_0 + \beta_2 Rev + \beta_4 Ifa + \beta_6 KapBS + \beta_7 KapBM + \beta_8 IR + \lambda_1 RED + \lambda_2 \text{Rgen} + \lambda_3 \text{RAge} + \lambda_4 \text{RMExp} + \lambda_5 \text{RWExp} + \delta_1 \text{TR} + \delta_3 \text{SR} + \delta_4 \text{NMR} + \varepsilon \quad (1.1)$$

The likelihood-ratio-chi-square test assessed the significance of (1.1). The model fit with χ^2 (13, N=156) = 55.63, p<0.001); indicating that the estimated coefficients significantly differ from zero, at a 1% significance. Model 1.1 explained 34% of the variance (Nagelkerke R^2).

Seven independent-variables make statistically significant contributions to predicting the dependent-variable (Table 7). Results show that internet access in future, short-term bank loans, interest-rate concerns and perceived total risk are highly significant. Consistent with Nassimbeni (2001), findings for larger firms, our findings underscore the importance of internet access to the viability of regional-SBs and link future-internet access to regional-SB financial concerns. These findings suggest that policy makers may need to focus on firm internet use to strengthen the ability of regional-SBs to meet accelerating change, competition, and opportunities due to globalization and technology. Huynh and Petrunia (2010) found a positive correlation between indebtedness and sales growth. While this study did not look at firm growth, three attributes associated with firm growth (entrepreneurial experience and 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-

[2] The ordinal nature of the finance variable suggests that an ordered-logit or ordered-probit model is most appropriate for analysing this data set (Greene and Hensher, 2010). The ordered-logit model was used in this study.

work experience. Such findings are eminently sensible (i.e. experience makes entrepreneurs more aware of risks). It is unsurprising that high total-risk and new-market-risk perceptions flow to higher finance concerns or that high-internet usage and finance concerns are correlated, but it is difficult to prove the direction of causality.

Table 7: Statistical Results for Equation (1.1) Link function: Logit

Variables	Estimate	Std. Error	Sig.
REV	-0.197	0.159	0.216
Ifa	**4.549*** **	1.147	0.000
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
SR	-0.236	0.192	0.220
NMR	**0.455** **	0.195	0.019

Note: * Significant at 10% ** Significant at 5% *** Significant at 1%.

Model 2 (Gender Issues): This model explores whether a regional-SB's attributes are an indicator its entrepreneur's gender. The dataset includes 60 women and 96 men. The *binary-logit* model is adapted from equation (1) into:

$$\begin{aligned} \text{RGen} = {} & \beta_0 + \beta_2 \text{Rev} + \beta_5 \text{KapTC} + \beta_8 \text{IR} \\ & + \lambda_1 \text{REd} + \lambda_3 \text{RAge} + \lambda_4 \text{RMExp} + \lambda_5 \text{RWExp} \\ & + \delta_1 \text{TR} + \delta_3 \text{SR} + \delta_4 \text{NMR} + \varepsilon \end{aligned} \tag{1.2}$$

A *Hosmer and Lemeshow* chi-squared test assessed the equation (1.2) goodness of fit as good. Garson (2014) asserts that this test is more robust than traditional chi-squared tests. Omnibus Tests of Model Coefficient for Model 2 give an overall indication of the model's performance. The results are: χ^2 (10, N=156) =90.71, p<0.001; indicating that the estimated coefficients significantly differ from zero, at a 1% significance. Model 2 explained 44.1-59.9 percent of the variance (Cox and Snell R^2 and Nagelkerke R^2).

Seven independent variables made a statistically significant contribution to the model; male entrepreneurs tend to be: more experienced in management, older, more concerned with new-market risk, and better at accessing trade credit; and, female entrepreneurs tend to have greater worries over interest rates, more education, and lower revenue. These findings suggest better access to lower-cost credit may assuage female-entrepreneur interest-rate worries.

Further research should investigate why female entrepreneurs tend to be younger with less management experience. It may be linked to the important role that women play at home, especially if a female entrepreneur is married and/or has children. Moreover, male entrepreneurs may either be drawn to markets with higher new-market risk, or perceive them as being riskier, or may be more likely to take greater risks, fail and either try again or withdraw. Thus, the lower-end of the firm-performance distribution may be somewhat truncated for males.

Table 8: Statistical Results for Equation (1.2)

Variables	B	S.E.	Wald	df	Sig.
Rev	**-0.635***	0.299	4.520	1	0.034
KapTC	**3.588****	1.521	5.567	1	0.018
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

Note: * Significant at 10% ** Significant at 5% *** Significant at 1%.

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

$$\begin{aligned} \text{FAge} = \beta_0 + \beta_1\text{Emp} + \beta_5\text{KapTC} + \beta_7\text{KapBM} \\ + \lambda_3\text{RAge} + \lambda_5\text{RWExp} + \delta_2\text{CFR} + \delta_3\text{SR} + \varepsilon \end{aligned} \quad (1.3)$$

The findings (model 3) show the likelihood ratio, χ^2 (7, N=156)=89.67, p<0.001; indicating that the estimated coefficients significantly differ from zero, at 1% significance. Model 3 explains 43.7-46.9% of the variance (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-SB-size risk positively correlated; and trade credits, Bank-medium-term loans, and cash-flow risk are negatively correlated.

Table 9: Statistical Results for Equation (1.3)

Variables	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

Note: * Significant at 10% ** Significant at 5% *** Significant at 1%.

The positive strong correlation for employee numbers, respondent work experience, and respondent age with the regional-SB age may be an artefact of the regional-SB age (e.g. older firms have more employees and an older entrepreneurs may gain experienced as they and their firm age). The positive correlation between regional-SB-size risk and age may reflect the importance of experience in identifying risks. Overall, this study highlights the value of maturity and experience to firm survival.

Strong-negative correlations for bank-medium-term loans and cash-flow risk with regional-SB age suggest 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. The weaker but still robust negative trade-credits-and- regional-SB-age correlation is consistent with young firms having less access to other forms of funding. This finding is in line with Freear *et al*. (1995). The findings of Berger and Udell,(1998) that smaller less transparent firms rely on insider and trade finance are consistent with this study's finding.

In summary, the negative correlation between regional-SB age with 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 reduce any reliance on medium-term loans and trade credit.[3] Clark et al. (2012) note that few nascent Australian SBs use trade credit. While using trade-credit funding is often seen as a weakness, being able to access some credit is better than none.

This study did not find the same dynamism that Anderson (2000) found in Scottish regional-SBs. However, that difference is explained by noting that regional populations in the relatively young countries of Australia, Canada, and New Zealand are still draining. Whereas, regional Scotland was extensively drained of people over the past three centuries and now changes in infrastructure are encouraging a small backflow.

5. POLICY IMPLICATIONS, LIMITATIONS AND CONCLUSION

This study found SB subgroups experience different *survivorship* rates with regional-SBs having much higher survivorships than SB averages. Also, SB-subgroup survivorship varies with firm size. Other relationships revealed include those between survivorship and: credit worthiness; financing-source differences; interest-rate and financing concerns; inter-net use and financial concerns; manager-specific characteristics and gender-based finance issues; firm continuity and firm-specific variables; firm continuity and manager-specific variables; firm continuity and financial concerns.

Regional-SBs tend to have attributes, behaviour, and needs that differ greatly from those of urban-SBs. Thus, policies based on average-SB attributes may yield inefficient outcomes for regional communities.

SBs, are vital to regional socio-political stability. Regional-SBs are key facilitators of the migration of labour from other sectors to tertiary-sector and their value added with multiplier effects tend enrich their regions and (via flow-on-effects) larger urban centres. Given the pivotal role that regional-SBs play in sustaining dynamic socio-economic stability, not supporting regional-SBs may drive more people to urban areas, shifting regional sources of wealth and culture to poverty and unrest. It is vital that government policy helps regional-SBs rise to the challenges and opportunities raised by rising globalization. This study's findings are relevant to all developed economies. Limitations include not examining: 1) the effect of taxes, infra-structure, grants, etc. on regional-SBs; 2) a range of Australian regions and 3) other countries. These limitations mostly involve scope and are opportunities for future research.

[3] Cash-flow risk was ranked in the questionnaire on a 1-5 Likert scale (very-high risk to very-low risk).

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