



Reynolds, Paul and Davidsson, Per (2009) *PSED II and the comprehensive Australian study of entrepreneurial emergence (CAUSEE)*. In: Reynolds, Paul and Curtin, R, (eds.) *New Firm Creation in the United States: Initial Explorations with the PSED II Data Set*. *International Studies in Entrepreneurship*, 23. Springer, pp. 265-280.

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PSED II and the Comprehensive Australian Study of Entrepreneurial Emergence [CAUSEE]¹

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SUMMARY

Two current longitudinal studies in advanced countries, PSED II in the US and CAUSEE in Australia, have attempted to harmonize the major features of the research design. A comparison of the initial screening and first detailed interviews indicates a higher participation in new firm creation in the U.S. Similar types of persons are involved in both countries, albeit more immigrants, older individuals with more work experience and more established individuals in Australia. The nascent enterprises in the two countries are similar on many characteristics, although those in Australia report greater emphasis on new technology and international customers. Assessment of the prevalence of nascent enterprises and new firms from the Global Entrepreneurship Monitor surveys indicates a higher prevalence of new firms in Australia. These two longitudinal projects may help determine if this reflects a high proportion of new firm births or greater survival in the early years among Australian new firms.

INTRODUCTION

Hundreds of millions are involved in business creation in every part of the world. The Global Entrepreneurship Monitor research program makes clear that participation varies dramatically, from 2 per hundred adults to over 40 per hundred, most countries have a substantial number of individuals involved (Bosma, Jones, Autio, & Levie, 2008). But individuals pursue firm creation with a wide variation in personal characteristics, social and family contexts, educational and work experiences, support from community and social networks, economic and political structures as well as cultural milieu.

¹ Published as Reynolds, P. & P. Davidsson (2009). PSED II and the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE). Chapter 13 in: Reynolds, P. and R.T. Curtin (Eds). (2009). New Firm Creation in the United States: Initial Explorations with the PSED II Data Set (pp. 265-280). New York City, NY: Springer

This leads immediately to several major questions:

1. Are there national differences in the tendency of individuals to get involved in business creation?
2. Does the national context affect the way in which individuals go about creating a new firm?
3. Does the national context affect the proportion of start-ups that become operational young businesses?

These are not, however, issues of a purely academic interest.

In some countries, many may enter the firm creation process as nascent entrepreneurs but a relatively small proportion may complete the process with an operating new firm. In other countries, a smaller proportion may elect to pursue new firm creation, but a higher proportion may succeed with a new firm. While the aggregate social cost, total time and funds invested in the start-up efforts, may be similar in the two cases, more of these costs will be borne by those that leave the process before they become owners of new businesses in the first situation. In the second situation a larger proportion of the nascent entrepreneurs who bear the costs of business creation are successful in creating a new business; the same individuals are bearing the costs and receiving the benefits.

The first of these questions has been the focus of a major cross national comparison, the Global Entrepreneurship Monitor program, and some results will be discussed below. Answers to the second and third questions are best provided by longitudinal studies which identify a cohort of nascent entrepreneurs as they go about the business creation process and tracks this group to identify those that succeed in implementing a new firm. Such panel studies are complex and expensive, but the results are extremely useful for understanding the firm creation process.

This chapter will provide a preliminary comparison related to the second issue, using data from two harmonized longitudinal studies of new venture creation, one implemented in the United States (the second Panel Study of Entrepreneurial Dynamics or PSED II) and the other in Australia (The Comprehensive Australian Study of Entrepreneurial Emergence or CAUSEE). Following the development of PSED I a number of national panel studies were implemented in Argentina, Canada, The

Netherlands, Norway, and Sweden.² However, there was no conscious effort to harmonize the major features of these projects. In contrast, the PSED II and CAUSEE designs are based on earlier studies completed in the United States and Sweden and share a harmonized conceptualization; there has been a conscious effort to use similar procedures, selection criteria, and interview item wording (Davidsson, Steffens, Gordon, & Reynolds, 2008).

Neither study, as of 2008, had progressed to the point of providing a reliable answer to the third issue, the proportion of start-ups that become new businesses.

A review of the major similarities and differences between the two projects will be discussed in the next section. A summary of the differences in prevalence rates—the proportion of adults that have chosen to enter the start-up process—is provided in the third section. The fourth section provides a comparison of the nascent entrepreneurs and their start-up ventures, based on the data gathered in the initial detailed interviews. The final section provides comments on the success of the effort.

COMPARISON OF PROJECT DESIGNS

The most important features of the two projects are very similar. Both start with a representative sample of adults, selected from households identified through the use of a Random Digit Dialing (RDD) procedure to locate residential phone numbers. In these cases, the phone numbers are created by a random procedure to overcome the bias from unlisted numbers omitted from public phone directories. In both projects the first adult contacted in the household that was willing to complete the interview is chosen as the respondent. Both studies attempted to have an equal number of male and female respondents; post-stratification case weights were assigned to create samples that were similar to the adult population.³

The wording of the screening items used to identify those adults that would be considered active nascent entrepreneurs was identical. The criteria used to select those that qualified on the basis of responses to screening items are also identical. Large

² Alsos & Kolvereid, 1998; Delmar & Davidsson, 2000; de Rearte, Lanari, & Atucha, 1998; Dihon, Menzies, & Gasse, 2007; van Gelderen, Thurik & Bosma, 2005.

³ In the PSED II project, case weights for the entire screening sample were developed to provide a match to the Current Population Studies national samples based on age, gender, ethnicity, and household income. Case weights have as yet not been developed for the Australian sample.

proportions of the CAUSEE initial detailed interview utilized wording and formats identical to the PSED II interview schedule; both studies utilized phone interviews.

But there were also differences, some reflected in the overview presented in Table 14.1 Perhaps the most important procedural difference was the use of two survey operations in the PSED II study and one for CAUSEE. In the U.S. it was much less expensive to have a commercial survey firm (Opinion Research Corporation of Princeton, NJ) complete the screening interviews, two thousand each week. At the end of each week, they would relay details of eligible respondents that volunteered for the study to the Institute for Social Research at the University of Michigan. This survey unit completed the initial detailed and all follow-up interviews. This two-stage procedure led to a gap of at least week between the two initial interviews. The CAUSEE procedure was to have the screening firm (Taylor Nelson Sofres of Australia) initiate detailed interviews as soon as an eligible respondent was identified; a much more efficient procedure. Over 20% of the completed interviews in CAUSEE were done as direct continuation from the screener.

A second procedural difference, related to the study of nascent entrepreneurs, is the presence of a comparison group identified and interviewed in the CAUSEE project. The CAUSEE project took advantage of the screening procedure to complete interviews not only with nascent entrepreneurs but also with the owners of young firms, those who began trading within the last four years, since 2004. Those that qualified for both were interviewed as nascent entrepreneurs. About 93% of those contacted for the CAUSEE screening did not qualify as either a nascent entrepreneur or young firm owner. One in fifty, or 2%, of this group were selected at random and invited to complete the comparison group interview; 481 accepted. While no explicit comparison group was interviewed in the PSED II project, a large proportion of the interview was used with a comparison group selected and interviewed as part of the PSED I project.

But these procedural differences are unlikely to affect the ability to make precise comparisons and are small compared to the similarities. The sizes of the screening samples are similar, 31,845 for PSED II and 28,383 for CAUSEE. The unweighted prevalence of active nascent entrepreneurs is about 43% higher for the U.S., 4.93/100 for PSED II and 3.44/100 for CAUSEE. In the PSED II project there was greater success at

getting the first detailed interview completed, 77% compared to 61% for CAUSEE. The screening sections of the interviews were comparable in length, but the PSED II detailed interview was somewhat longer.

[Insert Table 14.1 about here]

A gross count of variables in the initial detailed data sets, 1,477 for PSED II and 657 for CAUSEE, indicates a substantial difference in length. This reflects, in part, the different topics covered in the two interview schedules.

The PSED II interview schedule involves considerable detail on the multiple owners, participants in the founding team that will not own part of the new business, and those considered part of the helping networks of the nascent entrepreneur; modules not included in the CAUSEE interviews. These sections involve a large number of variables for nascent enterprises with 4 and 5 person teams, but only a small percent with large start-up teams complete these sections. In addition, there is considerable detail on the financing of the nascent enterprise; again, there are many items for which only a few respondents provided answers. Again these details were not part of the CAUSEE interviews.

On the other hand, the CAUSEE interview schedule includes topics related the newness and relatedness of the venture idea; resource (dis)advantages: effectuation, and bricolage that are not included in the PSED II interview schedule. These latter terms—effectuation and bricolage—refer to a variety strategies that may be used to overcome a shortage of resources by applying creative, iterative and incremental strategies (Baker & Nelson, 2005; Sarasvathy, 2001; Winborg & Landstrom, 2001).

If other features of the samples of nascent entrepreneurs are similar in the two countries, the patterns found in each national study can be assumed to present in the other. For example, patterns related to the development and incorporation of non-owning founders and social network found in the US PSED II cohort can be assumed to occur in Australia. The patterns found in the CAUSEE cohort for Australia related to effectuation and bricolage can be assumed to be present in the United States. In this regard, the combination of similarity in basic operational procedures and diversity in details gathered

about business creation provides a range about the business creation process than if both projects were identical in all respects.

PREVALENCE RATES: U.S. VERSUS AUSTRALIA

Perhaps the most basic comparison involves the results of the screening procedure, which would be represented in terms of the proportion of adults that appear to qualify as nascent entrepreneurs. These would be individuals that answered yes to one or more of the initial screening items, suggesting they consider themselves involved in a start-up effort or new business. In addition, they will have stated that they have engaged in some start-up activities in the past 12 months, expect to own all or part of the new business, and have not had positive monthly cash flow for more than 3 months.

The prevalence among all those 18 and older is presented for the full sample and by gender in Figure 14.1; these weighted estimates vary slightly from those in Table 14.1. The vertical lines are the 95% confidence intervals; the horizontal bars represent the mean values. If the vertical lines do not overlap, then the difference between the samples would be statistically significant at least at the 0.05 level. The values are provided in the table at the bottom of the chart.

[Insert Figure 14.1: Nascent Entrepreneur Screening Prevalence Rates: U.S., AU by Gender]

All the differences are both statistically and substantively significant. The overall mean prevalence rate in the US cohort is 5.7 per 100, compared to 3.2 per 100 for Australia, almost 67% higher. Among men the mean difference is 7.3 versus 4.1 per 100, the U.S. is 78% higher. Among women the mean difference is 4.1 versus 2.8 per 100, the U.S. is 46% higher.

These results indicate a somewhat greater difference that found with the Global Entrepreneurship Monitor [GEM] national surveys; many of the procedures and operational definitions are harmonized with the panel studies (Reynolds et al., 2005). The GEM results for the years 2000 through 2006 are summarized in Table 14.2. In this case the population base are those 18-64 years old, rather than all those over 18 years of age, this has the effect of slightly elevating the prevalence rates. Three measures are

presented, the prevalence of nascent entrepreneurs, those owners of new firms up to 42 months old, and a combined measure, the Total Entrepreneurial Activity (TEA) index, now referred to as the early stage activity index. The average values for all years are provided in the bottom row of numbers.

[Insert Table 14.2 about here]

The average values indicate that the GEM procedures indicate that the prevalence of nascent entrepreneurs is 32% higher in the U.S. than Australia, 8.2/100 versus 6.2/100. On the other hand, the prevalence of new firm owners is 22% higher in Australia than in the U.S., 5.0/100 compared to 4.1/100. As a consequence, the average TEA rates, which combine both measures, are almost identical, at 11.3/100 for the U.S. and 11.0 for Australia.

Several issues deserve some attention. First, the substantial year to year variation in the GEM results probably reflects the small sample sizes; a total screening sample of 2,000 per year was utilized in most countries. On the other hand, the average values across six or seven years represents over 12,000 interviews and provides more precise comparisons. Second, the much larger samples and more precisely harmonized procedures in the PSED II and CAUSEE projects would suggest these prevalence rates justify more confidence. Nonetheless, the GEM results for nascent entrepreneur prevalence rates are similar, but the difference between the U.S. and Australia is smaller, 32% compared to 70%. It seems reasonable to assume that participation in new firm creation is more common in the U.S. than in Australia.

Perhaps the third difference is the most interesting; the 22% higher prevalence rate of new firms owners in Australia than in the U.S. New firm owners are those that report a going business that is up to 42 months old. Assuming year to year stability in the business creation process in the two countries and a similar average size of the ownership teams, there are at least two patterns that could account for these differences. First, it is possible that a larger proportion of nascent entrepreneurs succeed in launching a new firm in Australia. Second, the death rate of new firms may be lower in Australia than in the U.S.

Both processes would help to account for the apparent anomaly in the GEM prevalence rates, higher prevalence rates for nascent entrepreneurs in the U.S. and higher prevalence rates for new firms in Australia. The presence or relative impact of the two processes can only be determined by the presence of two harmonized longitudinal studies, such as PSED II and CAUSEE.

CHARACTERISTICS OF THE NASCENT COHORTS

What are the differences, if any, between the nascent entrepreneurs developing new firms in the U.S. and those in Australia? A number of comparisons provide a partial response to this question. The personal characteristics and background of these individuals are presented in Table 14.3. The column to the right in the following tables presents the level of statistical significance. Because the sample sizes are relatively large, there are often statistically significant differences. In only a few cases, however, are the substantive differences significant.

For example, the proportion of men is almost identical, about 60%, in the two cohorts. While all age groups are represented in both cohorts, they seem to be slightly older in Australia, with fewer under 24 years of age and more 55 years and older. In both countries the majority are of a white, European background, but this is greater in Australia, reflecting the smaller proportion of non-white ethnic groups. There seems to be greater diversity in educational attainment among the Australian cohort, with a larger proportion that have not finished high school, 18% versus 6%, but also a greater percentage that have college degrees or graduate experience, 38% versus 33% for the U.S. Slightly larger proportions are homeowners in Australia, 69% versus 64%, and slightly larger proportions are working fulltime, 85% versus 74%.

There are major differences related to immigration status. Among Australian nascent entrepreneurs, 26% were born outside the country, compared to 6% in the U.S. When the birth location of the parents are considered, 52% of the Australian nascents report they and both parents were born in Australia, compared to 85% among U.S. nascent entrepreneurs. In other words, 15% of U.S. nascents report that they or one or both parents were born outside the country compared to 48% of Australian nascent entrepreneurs. This reflects a higher proportion of immigrants and immigrant families

among the Australian population; there is no strong tendency for those in Australia with immigrant background to be more prone to start firms than others (Davidsson et al., 2008).

[Insert Table 14.3 about here]

The extent of family background in new and small businesses is presented in Table 14.4. While the differences are statistically significant, with 53% of the U.S. nascents reporting parents who were business owners compared to 58 % of the Australians, the substantive difference is slight.

There are similar small differences in the extent to which the nascents decision to enter the start-up process was based on a desire to take advantage of an opportunity, rather than a response to poor career options leading to entry into business creation out of necessity. A slightly larger proportion of Australian nascents, 24%, report they were responding wholly or in part to necessity when compared to U.S. nascents, 17%.

The sequence in which the entrepreneurial desire and business ideas occurred varies substantially in both countries; with the largest proportion indicating that the business idea occurred before or at the same time as the desire to become an entrepreneur. A small minority, 13% in the U.S. and 17% in Australia, report the desire to become an entrepreneur preceded the development of the business idea.

The proportion seeking to maximize the growth of their new business is almost the same in both cohorts, about one in four.

[Insert Table 14.4 about here]

In both countries the largest proportion of the start-ups are one person efforts. As shown in Table 14.5, about 54% in the U.S. and 51% in Australia report that only one person will own the firm. The average team size is slightly higher in Australia, 1.75

compared to 1.64 for the United States. In the U.S. cohort 5% report teams of four or more individuals, compared to 8% in the Australian cohort.⁴

In both countries about 40% of the nascent enterprises involve individuals who take a major responsibility for some aspect of the firm creation process although they do not expect to own part of the new firm. These are referred to as non-owning founders; more details on this group and their contributions are available in the PSED II data set.

[Insert Table 14.5 about here]

Some of the characteristics of the nascent enterprise are presented in Table 14.6. At the time of the initial interview, the majority report the legal form as a sole proprietorship, with either a corporate or limited company form more popular than partnership. A substantial proportion report that the legal form has yet to be established.

The most popular location during the start-up stage is a private residence, although a number report that a dedicated location is not yet required. A minority report the nascent enterprise is sharing the site of an existing business or has a location dedicated to this new firm.

[Insert Table 14.6 about here]

A series of three questions are used to determine the technological focus of the nascent enterprise. These three items—related to the technology in use, a focus on research and development, and if the owners consider the business as high technology—are presented at the bottom of Table 14.6. The responses to these three items can be used to create an index and classify nascent enterprises as from no technological focus to the highest level, also shown at the bottom of Table 14.6. There is little question that CAUSEE respondents are reporting a greater emphasis on new technology.

⁴ The sample procedure selects individuals participating in a start-up initiative; those initiatives with start-up teams are more likely to be sampled than one-person efforts. This can lead to a larger proportion of team start-ups in the cohorts. No adjustment has been made for this bias, in either the PSED II or CAUSEE data sets. Note that this tendency towards over sampling of team efforts is reduced by the fact that many 'teams' are partners sharing the same household (Ruef, Aldrich, & Carter, 2003) so they represent only one sampling unit. It would be more precise, however, to speak of a cohort of nascent entrepreneurs rather than a cohort of nascent enterprises.

The economic sector and the location of customers for the nascent enterprises are presented in Table 14.7. Comparisons of economic sectors utilizes both four very general categories and 15 more precise categories.

[Insert Table 14.7 about here]

While the differences between the U.S. and Australian nascent enterprises are statistically significant, the differences are small and probably reflect the differences in the national emphasis on economic sectors. This is particularly true of the larger proportion emphasizing extractive sectors in Australia, 6% compared to 3% for the U.S. and the larger proportion emphasizing real estate in the U.S., 5% compared to 1% for Australia. In both countries a wide range of business activities are represented among the nascent enterprises.

The bottom of Table 14.7 presents the percentage of customers, averaged across all nascent enterprises, expected in different locations. Australian nascent enterprises expect to have somewhat more customers outside the country, 10% compared to 3% for the U.S. This is associated with a reduction in customers expected in the immediate region, within 20 miles or 30 kilometers of the business.

These comparisons can be considered in terms of the nature of the nascent entrepreneur and the teams that are attempting to implement new firms and the character of the nascent enterprises being implemented. Within the two cohorts of nascent entrepreneurs:

- Gender representation is identical, 60% are men in both countries.
- Nascent entrepreneurs are slightly older in Australia.
- The majority are white, of European descent, in both countries.
- More educational diversity in Australia, with a higher proportion with college and graduate experience and without high school degrees.
- More homeowners in Australia, 69% versus 64 %.
- More working while they implement new firms in Australia, 85% versus 74%.

- Substantially greater proportions are immigrant or in an immigrant household in Australia, where 48% of households have a parent or nascent born outside the country, compared to 15% for the U.S.
- About the same proportion of nascents, about half, in both countries had parents who were business owners.
- Australian nascents were more likely to be involved out of necessity; about 24% had necessity as part of their motivation, compared to 18% in the U.S.
- There were no major differences in the development of business ideas versus motivation to become an entrepreneur.
- About the same proportion in both countries, one in four has a focus on high growth.
- Team sizes were comparable in both countries, perhaps slightly larger teams in Australia.
- Both countries reported non-owning founders involved in about 40% of the nascent enterprises.

In summary, if there is a difference between the nascents, those in Australia appear more likely to be immigrants and also slightly older and better established as employees and homeowners.

The nascent enterprises are also quite similar in the two countries:

- The legal status at the time of the first interviews is similar, with a higher proportion of sole proprietorship in Australia; a larger proportion not determined in the U.S.
- Most are located in residences or a location not needed at the first interview.
- Nascent enterprises in Australia appear to have a greater focus on new technology.
- The industry sectors cover a broad range representing the full diversity of economic activity in each country.
- There is a concentration of focus on local customers in both countries, with a slightly higher emphasis on international customers in Australia, 10% compared to 3% for the U.S.

In summary, nascent enterprises in the two countries are quite similar and reflect the economic structure in the countries. Australian nascent enterprises may be more focused on new technology and international customers.

ALTERNATIVE INTERPRETATION

This preliminary assessment has assumed that the PSED II and CAUSEE procedures identified nascent entrepreneurs at the same stage in the start-up process. A small consistent difference is evidence that CAUSEE nascent entrepreneurs are more established in the community and labor force, more likely to have advanced education, report larger teams, more likely to have a legal form, and have a fixed location for the business. If Australians are, for what ever reason, less likely to indicate they are active in new firm creation at the early stages of the process, it could account for these subtle differences—which are all relatively small; Australians wait until they are further into the process before they report they are nascent entrepreneurs. If entrepreneurial career choices are less socially encouraged in Australia, it may account for this reluctance.

The GEM 2003 cross national comparisons involved measures of the extent for cultural support for entrepreneurship from interviews completed with the adult population and questionnaires completed by well informed experts in each country (Reynolds, Autio, & Hechavarria, 2008; Reynolds & Hechavarria, 2008).⁵ Both groups indicate a slightly higher level of acceptance of entrepreneurship as a career option in the United States, which may encourage those in the U.S. to report participating in a business start-up at an earlier stage. Additional analysis will be required using the PSED II and CAUSEE data sets to determine the potential impact of this “willingness to be identified as a nascent entrepreneur” effect.

OVERVIEW AND COMMENTARY

⁵ Both interview schedules involve multiple items that can be used to create an index. Among typical adults there is greater diversity in the US, with both a higher proportion of US respondents indicating very low and very high cultural acceptance of entrepreneurship. US experts are considerably more positive than Australian experts.

The critical features of identifying a representative sample of nascent entrepreneurs actively involved in business creation have been harmonized for the projects underway in the U.S. and Australia, PSED II and CAUSEE. While there is some variation in the coverage of the detailed interviews, the critical procedures for locating and identifying cohorts of nascent entrepreneurs are identical or very similar. The initial comparisons provide tentative answers to the issues raised in the introduction.

- Are their national differences in the tendency of individuals to get involved in business creation?

Both the comparison based on the two longitudinal studies and the use of six years of data collected as part of the GEM project suggests a greater propensity among U.S. adults to participate in new firm creation. U.S. adults are about 70% more likely to become involved, reflecting a prevalence rate of 5.7 per 100 adults over 18 years of age, compared to 3.4 per 100 for Australians. Our alternative interpretation suggests this difference may be inflated by a higher propensity among Americans to report themselves as 'starting a business' at rather tentative stages of venture development. The Australians that do become involved are more likely to be part of an immigrant household and may be more established in the community.

- Does the national context affect the way in which individuals go about creating a new firm?

Only limited evidence is available in this assessment related to this question. However, the size of the start-up teams, the economic sectors, the legal form, a major focus on local and regional customers, the aspirations for growth are all similar in the two cohorts of nascent enterprises. Australian nascent firms may have a slightly greater emphasis on new technology and international customers, the latter probably an effect of the smaller home market.

- Does the national context affect the proportion of start-ups that become operational young businesses?

There is no data, as yet, from the two longitudinal studies that can be used to respond to this issue. Neither study has collected enough follow-up data to determine the outcomes for these two cohorts of nascent enterprises; other research suggests it may take 5 years for most of the start-ups to reach a resolution.

Data from the GEM annual surveys, however, suggests that the prevalence of new firms is higher in Australia than in the United States, and this is in absolute terms. If so, this may indicate that either a larger proportion of Australian nascent enterprises become new firms, that a survival in the early years is greater for Australian new firms, or that both processes are in operation. When PSED II and CAUSEE have completed follow-ups to track the outcomes for their respective cohorts of nascent enterprises it will be possible to confirm the implications based on the GEM data and estimate the relative impact of these different processes.

It is clear that the benefits of efforts to harmonize the procedures and interview schedules of the PSED II and CAUSEE longitudinal studies will be substantial; well worth the small cost required to achieve compatibility. This suggests that if harmonized longitudinal projects were implemented in other countries, particularly those with different levels of participation in business creation and different economic and social contexts, much new information about factors that affect business creation and its contribution to economic growth could be developed.

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