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ECONOMIC OUTCOMES OF E-PROFESSIONAL, HOME-BASED ENTREPRENEURS

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Abstract

More than half of small businesses are operated in or from a home, yet they are the missing majority. Home-based businesses (HBBs) are increasingly important in our society as a result of adoption of ICT and other discernable trends but they have been largely ignored in research. This paper compares receipts, expenses and net income of home-based (HBB) with non-home-based (non-HBB) professionals in the professional, scientific and technical services industry. It brings to attention the HBB location as a key variable when modeling entrepreneurship. Recommendations for future research are to take into account the impact of the home as a business location in research design and theory development.

Key words: Entrepreneur, home-based business, homebased, sole proprietor, e-professional

Introduction

Equipped with satellite technology, and a Panasonic ToughBook wireless tablet for sketching, the CEO of I&D Media group plans to operate his eight employees, $3 million dollar business from his sailboat. He says “When I started in the business, you had to be on Madison Avenue, but people no longer care about your physical address” (Barnett 2007, p. 60).

The missing majority in entrepreneurial and small business research is the home-based business. Although “home” is not usually a sailboat, fully 52% of the sole proprietorships, partnerships and S corporations in the U.S. are operated in or from the owner’s home rather than from a separate place of business. Of the 23.4 million total U.S. businesses, 18.3 million are sole proprietorships of which 9.5 million are operated from the home (Pratt 2006). Research has, for the most part, overlooked this phenomenon. Place of business or location (home or non-home) is seldom employed as an explanatory variable in entrepreneurship research, thus creating a theoretical as well as practical void.

This paper examines professional, scientific and technical services (PST), the largest industry sector in number of returns. The study uses data reported on IRS tax returns to compare the economic outcome of business owners in PST who
opt for a home-based location with those who operate businesses in non-home rented space. Traditionally, home-based businesses have been dismissed as “mom and pop” enterprises that offered negligible contributions to the economy. The intent of this research is to update that perception in light of important social and economic trends. First, operating a business from home has become easier and cheaper with the evolution of information technologies and ubiquitous use of email replacing hand-typed correspondence (NFIB 2003). The proportion of total sales made online is greatest for firms with fewer than 10 employees – those likely to be HBBs. Thus, it is not surprising that use of the Internet to work at home increased from 4.6% in 2001 to 67.4% in 2004. Further, U.S. teleworkers are nearly twice as likely to access the Internet via wireless than all U.S. adults (WorldatWork 2006). The merging of the PDA/computer/cell phone/camera into one pocket-sized tool with broadband Internet access is giving the self-employed, including professionals, even more flexibility to conduct their activities from anywhere while centering on their homes.

Another trend is changing lifestyles of citizens from “live to work” to “work to live.” Karoly (2004b, p. 35) finds that there is a “bipolar distribution of workers reporting both low and high hours,” which supports the observation that men and women choose self-employment to enjoy a lifestyle they prefer. One lifestyle factor is the choice to stay small. Micro-business owners are reluctant to move from producing, which they like, to administration of their business which many abhor (Baker 2005). These self-employed are motivated not simply to earn money but they “derive nonpecuniary benefits from self-employment, such as the opportunity to ‘be your own boss’” (Hamilton 2000, p. 27; Fairlie 2005, p. 45; Walker and Brown 2004).

Gender is a factor. The fact that more women are going into business also advances HBB growth. Between 1985 and 2000, in comparison with male-owned businesses, female-owned sole proprietorships grew much faster in number of businesses, gross receipts, and net income than male-owned (Lowrey 2005). However, surveys consistently show that men work longer hours than women (See, for example, CPS 2001, 2004). Women, who have young children or for other reasons opt to work fewer total hours than men, gain the flexibility to do so with a HBB (Pratt 1999). Self-employed business women spend 81% of their 31.9 hours work time at home while HBB businessmen spend 49% of their 42.1 hour work week at home (Pratt 2002a).

Of great import, “is the aging of the workforce as the baby-boom cohort approaches retirement. They will almost certainly influence the size and characteristics of the self-employed workforce. Although the overall trend in self-employment rates has been downward in the past decade the fact that self-employment rates rise at older ages and that the population is aging suggests that demographics alone may halt or reverse that trend” (Karoly 2004b, p.42). Self-employment enables so called “retired” persons to earn supplementary income or to just “keep their hand in.” In 2001, for example, 59% of older self-employed workers in unincorporated businesses worked 35 or more hours per week, compared with 74% of wage and salary workers in the same age group.

Further, HBB entrepreneurs gain the advantage of being able to test a new business product or service without the need for substantial amounts of outside capital. Considering the so-called flattening of the world as the global economy matures, entrepreneurship may prove an even more critical factor in keeping the U.S. competitive (Friedman 2005).

All of these trends encourage the founding of HBBs. Between May 2001 and 2004, the percent of total employees and self-employed who usually worked at home as part of their primary job stayed about the same, at 15% (CPS 2001, 2004). However the self-employed segment increased from 30.2% to 33.7%. The total number was 14.4 million incorporated and unincorporated self-employed workers of whom 7.6 million persons, or 52.8%, work at home on their primary job (CPS 2004). The PST sector grew 3.1% from 2001 to 2002.

The research reported in this paper examines the economic outcome of using one’s personal residence as a business location for sub-sectors of the PST industry including accounting services, architecture and engineering, computer systems design, legal services, management, science and technical consulting, other professional, scientific and technical services and specialized design. It is based on a larger study of all industries in which a sample representing 1.6 million profitable non-farm sole proprietorships – businesses that took a home office business deduction (HBB) – is contrasted with a sample from 1.9 million businesses that deducted rent for their non-home business space (non-HBB) (Pratt 2006).

The implication of this research is that home location is a variable that should be considered as a viable option for self-employment. A primary goal of this research is to provide empirical financial data that researchers can use to examine the home-based business using theories of entrepreneurship. In addition, the research will be important to researchers examining the impact of “home work culture” on the lives of individuals and their household members; to entrepreneurs contemplating operation of a home-based versus a non-home-based business; and to vendors wanting to understand the needs and scale of the potential home office market for new products and services.

The paper first reviews the sparse literature on home-based business. The next section describes the methodology used for the larger study of all industry sectors. Then, the receipts, deductions and net income for individual PST sub-sectors are compared for the two locations, home-based and non-home-based and allocations of expensed items are described. The paper concludes with discussion of the findings and implications for further research.
Home: the Overlooked Location for Small Business

Surprisingly, the fact that ICT enables over half of small business owners to operate home-based businesses (HBBs), that is, firms operated in or from a home, has received little attention in academic research. Few articles even mention HBBs, while the relation between ICT and work at home by employees, that is, telecommuting or teleworking, has been examined in detail (cf. Daniels et al 2001, Cascio 2000, Khafif and Davidson 2000, Pratt 2003, Shin et al 2000, Van de Wielen et al 1993, and Hesse and Grantham 1991). Business owners’ characteristics are viewed through the lens of psychological attributes (Lumpkin and Erdogan 2004; Verheul et al 2005; Simon et al 2000) or social psychological context (Krueger and Brazeal 1994) including risk tolerance, demographics, labor economics such as bridge employment, career choices and so on. But whatever the chosen viewpoint, business location is rarely examined in itself nor is it even mentioned within theoretical discussions of new technologies and telecommunications. Among the few exceptions is Phillips (2002) who pointed out the ways that use of the Internet has stimulated the growth of home-based firms.

Typically, literature reviews overlook the government publications that contain actual small business data on large samples (Cf. Deming 1994, Edwards and Hendrey 1996, Fairlie 2005, Beale 2004). For example, a 1992 review of women-owned businesses is intentionally limited to academic research (Brush, C. 1992), which means that it omits impacts of e-commerce (Pratt 2002b) and does not cite research published by non-academic institutions such as the Center for Women’s Business Research, which sponsors research on HBB firms including their use of ICT (Center for Women’s Business Research 1995).

Surprisingly, neither Dyer (2003), who decries family as the missing variable in organizational research, nor Greenhaus and Powell (2006), who propose a work-family model of enrichment, mention HBB self-employment. In their literature summary, Karoly and Zissimopoulos (2004a, p.1, 8) only parenthetically recognize home-based businesses: the self-employed account for “up to three-quarters of those who work at home for pay (in home-based businesses).”

This paper examines location, a critical missing variable in studies of entrepreneurship, using a sample from the entire population of 18.9 million sole proprietors who file Schedule C income tax returns. That enables looking at real outcomes, the dollars and cents results of business operation in sub-sectors of all industries. Rather than hypothetical projections of success or failure, the findings are grounded in actual business practice.

Although there is no agreed-upon definition of entrepreneur (cf. Ma and Tan 2006; Ireland et al 2005), in this research an entrepreneur is an individual who files a Schedule C sole proprietorship tax return. It includes professionals who file a Schedule C. The definition separates those seeking income from hobbyists, and further, establishes the filer as a separate entity from one’s spouse. Compared with typical past studies the tax return data set is not only very large, but as information required by law, it is presumably the most accurate information obtainable. The Schedule C form submitted by sole proprietors includes revenues, deducted expenses for labor, facilities and other costs of doing business, and net income.

Method

The federal government provides large, well cleaned data sets. The drawback is the length of time between collection and release of the data for research. Tax year 2002 was the latest data available for this research. The nonfarm sole proprietorship 2002 data, published by the Statistics of Income (SOI) Division of the Internal Revenue Service, is based on a sample of 49,752 returns and a population of 18,925,517 Schedule C filings (Pierce and Parisi 2002). To maintain tax data confidentiality, the SOI provided custom cross-tabulations of the data according to the author’s specifications. The object was to rigorously differentiate HBBs from non-HBBs at the cost of dropping part of the total sample. Thus, for this research, the SOI provided the nonfarm dataset disaggregated first, by firms reporting net income (13.8 million businesses) and those reporting a deficit (5.2 million), and then into two mutually exclusive groups:

**Home-based businesses (HBBs):** Schedule C returns filed by persons who take a “home office business” deduction\(^1\) and do not take a deduction for "rent on other business property." (1.6 million firms with positive net income); and

\(^1\) Business use of your home deduction from Form 8829.
Non-home-based businesses (Non-HBBs): The opposite group: those who do take a deduction for rent on other business property \(^2\) but do not take a home office deduction (1.9 million businesses with net income).

Table 1 gives the total nonfarm sole proprietorships with net income for 2002. Of 13.8 million total businesses with net income, 12% are HBB and 14% non-HBB or 46% and 54%, respectively, of profitable businesses analyzed. An unknown number of eligible businesses do not take a home office deduction, primarily for fear of a tax return audit (Beale 2004). They are included in the 74% of “all other” businesses, which were not analyzed because they could not be distinguished as being exclusively home-based or non-home-based. The 5.2 million businesses reporting a deficit that are 43% HBB and 57% non-HBB were analyzed separately but are not discussed in this paper.

The large number of tax returns allows examining not only the main industrial sectors but also, more importantly, sub-sectors that report very different receipts and net income than the sector average. The author analyzed the cross-tabulated data supplied by the SOI staff to compare the characteristics of home-based with non-home-based businesses with respect to their numbers, contribution to industrial sector, receipts, deductions, net income and income as percent of receipts.

### Table 1: Nonfarm Sole Proprietorships with Net Income (2002)

<table>
<thead>
<tr>
<th></th>
<th>Total businesses</th>
<th>Home-based business (HBB)</th>
<th>Non-home-based business (non-HBB)</th>
<th>All other(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>13.8 million</td>
<td>1.6 million</td>
<td></td>
<td>10.2 million</td>
</tr>
<tr>
<td>Receipts(^b)</td>
<td>$871 billion</td>
<td>$102 billion</td>
<td>$432 billion</td>
<td></td>
</tr>
<tr>
<td>Percent of total</td>
<td>100%</td>
<td>12%</td>
<td>14%</td>
<td>74%</td>
</tr>
<tr>
<td>Percent of businesses in study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\) “All Other” firms are excluded from analysis because they cannot be identified as being solely HBB or non-HBB. 
\(^{b}\) Sum of “income from sales and operations” and “other business income.”

**Comparison of HBB and Non-HBB Businesses**

**Contribution to the Total Economy**

Two considerations in analyzing the outcome of the entrepreneur’s choice of location are first, the contribution that sole proprietorships as a whole make to the total economy. As shown in Table 1, the total 13.8 million sole proprietorships contribute $871 billion annually to the economy. Businesses in the study sample representing 1.6 million tax filers who took the home office deduction contribute $102 billion in annual receipts, which are defined by the Internal Revenue Service (IRS) as “the sum of ‘income from sales and operations’ and ‘other business income’” (Pierce and Parisi, p. 6.). The 1.9 million firms operated outside the home contribute $337 billion. Thus, the 54% of non-HBBs account for 77% of the total $438 million in receipts in the study. The 10.2 million “all other” firms appear to be largely HBBs, judging from receipts of $42 thousand per business which is closer to the average of $63 thousand for HBBs than to the $178 thousand for non-HBBs (Table 1). Including that additional $432 billion contribution to the economy implies that home-based businesses generate in excess of $530 billion in annual revenue.

\(^2\) “…amounts paid to rent or lease other property, such as office space in a building.” 2002 Instructions for Schedule C, Profit or Loss from Business.
The industrial sectors contribute unequally to the economy both in numbers and in generated receipts. The professional, scientific and technical sector ranks first in number of returns, 369 thousand HBBs, or 22.8% of total filed, and second in receipts, $21 million, or 20.7% of total revenue.\(^3\)

### Outcome to the Entrepreneur

#### Numbers, receipts, deductions, and net income

The second consideration is that operation of a HBB contributes net income to the entrepreneur. The amount of revenues and net income varies by industry sub-sector. Table 2 shows the percent contribution to the industry sector and average receipts, deductions and net income of HBBs and non-HBBs in PST sub-sectors. For comparison, “ALL” refers to total industries, which were included in the larger study (Pratt 2006).

<table>
<thead>
<tr>
<th>Dollar averages/tax returns in thousands</th>
<th>Percent contribution</th>
<th>Receipts (dollars in thousands)</th>
<th>Deductions (dollars in thousands)</th>
<th>Net income (dollars in thousands)</th>
<th>Net income as percent of receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBB</td>
<td>Non-HBB</td>
<td>HBB</td>
<td>Non-HBB</td>
<td>HBB</td>
<td>Non-HBB</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td>63</td>
<td>178</td>
<td>38</td>
<td>140</td>
</tr>
<tr>
<td>Professional, scientific &amp; technical services</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management, science &amp; technical consulting</td>
<td>27</td>
<td>13</td>
<td>71</td>
<td>105</td>
<td>28</td>
</tr>
<tr>
<td>Other professional, scientific &amp; technical services</td>
<td>19</td>
<td>17</td>
<td>69</td>
<td>170</td>
<td>40</td>
</tr>
<tr>
<td>Accounting services</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>126</td>
<td>16</td>
</tr>
<tr>
<td>Architecture &amp; engineering.</td>
<td>13</td>
<td>9</td>
<td>55</td>
<td>195</td>
<td>27</td>
</tr>
<tr>
<td>Computer systems design</td>
<td>10</td>
<td>5</td>
<td>41</td>
<td>114</td>
<td>20</td>
</tr>
<tr>
<td>Specialized design</td>
<td>9</td>
<td>5</td>
<td>59</td>
<td>131</td>
<td>31</td>
</tr>
<tr>
<td>Legal services</td>
<td>7</td>
<td>37</td>
<td>53</td>
<td>210</td>
<td>22</td>
</tr>
</tbody>
</table>

Industry sub-sectors may not sum to 100% due to rounding

Compared with non-HBBs, HBBs average lower receipts and net income. Across ALL industries the average for HBBs, compared with non-HBBs, is $63 versus $178 thousand in receipts and $23 versus $38 thousand in net income.\(^3\) Within sub-sectors of PST there are striking differences in average return. Management, scientific and technical consulting services earns the highest average receipts, $71 thousand, and net income, $42 thousand, if home-based, which is less than the $105 thousand in receipts and $46 thousand net income reported by non-HBBs. Larger differentials exist for other sub-sectors:

\(^3\) The 218 thousand construction firms rank first in earnings with $25.7 million, or 25.3% of total revenue.
Legal services, for example, represents only 7% of HBBs in the industry but 37% of non-HBBs. Both receipts and net income are considerably lower for HBBs.

Allocation of deductible expenses

HBBs and non-HBBs also, on a percentage basis, differ in their allocation of expenses in some categories but are remarkably similar in others. The most outstanding difference is labor expense. In the PST industry, non-HBBs allocate 19.1% of total expensed items to labor; HBBs, only 4.1%. Travel costs, almost entirely due to car and truck expense, are higher for HBBs. One advantage that home-based professionals have is that tax law allows deducting business travel, while non-HBBs cannot deduct costs of commuting to their rented location as business travel.

Surprisingly, deductions for facility costs, the space in which to operate a business, are approximately the same, about 13%, for PST HBBs and non-HBBs. However, owners of HBBs have the advantage of not needing to use available funds to pay rent. The percent allocated to COS expense and other deductibles such as overhead and marketing are in the same range irrespective of business location.

Net income as a percent of receipts

The last column in Table 2 gives net income as a percent of receipts. For ALL industries, net income as percent of receipts is 22% for non-HBBs, but 36% for HBBs. The differential is much greater for the professional, scientific and technical services industry as a whole, and with the exception of computer systems design, also for its sub-sectors. Thus, although home-based management, science and technical consulting businesses earn lower receipts then if they operated as non-HBBs, they keep more of the gross that they earn, in this case 60%. Non-HBBs keep only 44% of their revenues.

Discussion of Findings and Implications for Further Research

To understand the financial consequences for the choice of location, HBB or non-HBB, sole proprietorship tax returns were cross-tabulated into two mutually exclusive groups, HBB “e-professionals” choose the unincorporated sole proprietorship form of business; they operate their enterprise in or from their home; and they take the option of the home business deduction to reduce taxes. Non-HBB sole proprietorships operate outside the home and deduct the cost paid for rent.

There are clear differences between home-based and non-home-based businesses that should be considered in developing theories of entrepreneurship, self-employment or small business formation. HBBs generate lower levels of revenue, and yield different patterns of profitability. Working with tax returns, one measure of business achievement is the HBB return on receipts compared with non-HBBs in the same sector. Because sole proprietors, unlike owners of incorporated businesses, do not pay themselves wages, net income serves as proxy for the owner’s salary.

Economists argue over what self-employment income represents. “The major problem posed…is [income] allocation between its property and labor components. Some have argued that this distinction cannot be accomplished, that self-employment income is a mixture of the owner’s labor, entrepreneurship and the capital employed in the business, none of which can be separated out” (Whiteman 1981, p. 373.). Apparently one reason why entrepreneurs choose the home as their business location, is that the proprietors keep more of what they make. Higher return on receipts for HBBs can be attributed to being able to deduct the cost of home office space without having to use business resources to pay for leased space. The differences in labor costs are substantial and, in fact, represent the key defining factor between HBBs and non-HBBs based on their Schedule C tax returns.

But that does not totally explain the HBB choice. Earlier studies using the Characteristics of Business Owners, another federal data set based on surveys of 150,000 business owners, found that operating HBB firms was associated with a number of factors: the owner’s goal was to earn a secondary rather than a primary income, spend fewer hours on the business and not have employees (Pratt 1999).
When a business is opened within a home, the personal/work boundaries become blurred. If only a small minority of businesses were HBBs, this topic might be of little interest. However, estimates of HBBs range from 53% of all sole proprietors, partnerships and S corporations to 65% of nascent entrepreneurs, meaning that location cannot be ignored. Further, the numbers of HBBs can be expected to increase as the large mass of baby boomers choose to be self-employed “as their own boss” in preference to becoming greeters at Wal-Mart for their “retirement” years.

Similarly, this study presents possible explanations for lower revenues and net income that need further exploration to determine dominant variables. The entrepreneur’s goal (primary or secondary income), hours worked on the business, presence or absence of young children or adults needing care, gender, presence or absence of hired labor and location all play some part. However, more sophisticated analytical methods than data cross-tabulations are needed to understand how these factors interact in the business operation and influence its success.

A review of the academic literature on entrepreneurs leaves the impression that home-based or non-home-based location generally is overlooked as a factor in generating or testing theory and models. Two examples illustrate that at the least, the outcome data from tax filings raises new questions for entrepreneurship research.

In a theoretical approach proposed by Brush (1992) to explain women-owned businesses, business relationships are viewed as integrated rather than separated from family, society, and personal relationships, that is, the business is integrated into the business owner’s life. This integrated perspective offers explanations for many of the differences between male-and-female-owned businesses and may be particularly apropos for comparing HBBs with non-HBBs. Its four elements include individual, organization, process and environment but omit any consideration of home-based or non-home-based location. Comparing HBBs and non-HBBs in this context might produce different results.

In another approach to modeling entrepreneurship, Lee and Venkataraman (2006) develop a theoretical framework that is promising for future empirical work that could include the home office variable. Their building on “prospect theory” in which individuals make choices based on personal rather than absolute reference points (Kahneman and Tversky 1979, Fiegenbaum et al. 1995), allows the reference point to change in response to life stage circumstances and life style and preferences.

The Lee and Venkataraman framework uses two intersecting vectors: An “aspiration vector” (AV) combines economic, social and psychological benefits desired by an individual. The AV is influenced by an individual’s abilities, values and traits, past achievements and environment, that is, his human, intellectual and social capital. The AV vector interacts with the “market offering vector.” (MOV) The MOV incorporates current market opportunities by combining the economic, social and psychological factors pertaining at a given point in time. By describing an interaction of perceived opportunities with market offerings, the framework allows the impact of home location to be understood, as illustrated in the following hypothetical case::

Consider the research question “Under what conditions is the pursuit of entrepreneurial opportunity most likely?” or more specifically, “Under what conditions would a mother with children choose a HBB?” The AV vector combines the priority benefits, in this case 1) to be at home with young children and 2) to earn a secondary income. The intersecting MOV vector suggests looking at the potential of the various HBB opportunities. For one mother, a day care business might fit well with supervising one’s own children but at the cost of a low net income, $9 thousand, on average (Pratt 2006). For her that may suffice as secondary income. Another mother having a professional education such as a law degree, might consider opening a law office at home, with the expectation of $31 thousand annual income (Table 2), but only if the market conditions at the time and place gave her assurance that she could garner clients. If she were a single mother relying on her primary income, she might take employment rather than deal with the risk of self-employment.

The Lee and Venkataraman approach offers a flexible framework for incorporating a wide variety of variables including work at home as a business operator (HBB). Most importantly, it provides a way to incorporate into entrepreneurship theory, choices made at various life stages of the owner or stages of the business life. Extension of this research to include HBBs and non-HBBs may lead to new insights in the AV dimension. Of the research reviewed, Lee and Venkataraman’s framework appears to be particularly amenable to inclusion of HBB and non-HBB dimensions.

This study of the “e-professionals” lays the groundwork for further research on industry sub-sectors. Home location is a variable that should be considered in theories of entrepreneurship and self-employment. To ignore the majority of entrepreneurs is to underestimate the impact on revenue, expenses and net income of operating a business in or from a home. In conclusion, home-based businesses (HBB) are important but they are not being studied. Theories of entrepreneurship could be improved and expanded by inclusion of home-based (HBB) and non-home-based (non-HBB) dimensions.

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3 Panel Study of Entrepreneurial Dynamics (PSED) sample of nascent entrepreneurs
References


