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Rapid Literature Review of Self-Employment Research

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September 2014

Technical Report

Rapid Literature Review of Self-Employment Research

Business ownership is an important employment option for people with disabilities, particularly for those who live in rural areas of the U.S. with fewer employment opportunities (Arnold, Ravesloot, & Seekins, 1995; Arnold & Seekins, 1994). Researchers at RTC:Rural began conducting research on the use of self-employment by VR agencies in 1990. Since then RTC:Rural researchers developed model self-employment policies and procedures for Vocational Rehabilitation (VR) agencies, which several state agencies have adopted in whole or in part (Arnold & Ipsen, 2005); developed self-employment training for VR counselors (Arnold, Seekins, et. al., 1998, 1999, 2001, 2004) in both in-person and web-based formats; and explored cross-agency collaborations to support self-employment ventures (Ipsen, Arnold & Colling, 2003, 2005). A literature review shows this remains some of the only research on self-employment for people with disabilities.

Methods

To learn about self-employment research conducted outside the disability field, we conducted a rapid literature review of the self-employment literature to identify promising practices with application to State/Federal Vocational Rehabilitation delivery practices. We searched Web of Knowledge, Science Citation Expanded, Social Sciences Citation Index, and the Arts & Humanities Citation collections for the time period January 2000 through January 2013 and used the search terms (1) self-employment and research, (2) self-employment, and (3) entrepreneur and research. We limited our review to articles presenting research results, written in English; and conducted in the United States or counties in the European Union. The search returned 205 articles, of which 126 did not meet the inclusion criteria based on an abstract review. After reading the remaining 79 articles, an additional 28 articles were eliminated based on selection criteria.

The remaining 51 articles are described in this report. Of the research articles reported, 41 used a mix of cross sectional, survey, longitudinal, and secondary analysis methods; 3 were qualitative, 2 were quasi-experimental, 1 was experimental, 1 was a systematic review, 1 was a case study, 1 was a meta-analysis, and 1 did

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not report on methods. The articles covered a range of topics, but almost all research was in the discovery phase. No research evaluated the effectiveness of products, interventions, curricula, workshops, or policies.

The following two sections provide information about reviewed articles. The first section provides a brief description of relevance to VR practice and then findings by topic. The second section provides citation and author affiliation information and describes the type of research, conclusions, and possible applications to VR practice.

Section I: Brief Article Descriptions

Relevance to Vocational Rehabilitation Practice

Application to VR practice (10 articles)

- If people who start businesses are considered to be pushed, it is likely they will earn lower incomes and have less stability in their business.
- People who do not have the recommended amount of work experience or college may need additional education or mentoring for business survival. Also adequate capitalization is important to business survival.
- Most VR consumers are necessity entrepreneurs, but because VR first looks at employment by a business, it is unlikely that they have the option, as do others, of returning to paid employment.
- Entrepreneurs showed significantly better health than employees, which could be an argument for helping people become self-employed vs. working for an employer.
- Exit rates from self-employment were lower in rural areas during business' first years, which may help to provide background to counselors and affirm reasons why self-employment is an important rural option.
- Prior work experience in a family member's business was strongly correlated with a successful small business. This finding should not be used to screen out possible candidates, but could point out stronger ones.
- VR should consider disability trajectory when developing the business.
- People who are self-employed experience fewer negative emotions. This might be an interesting characteristic for VR to consider.
- The effect of education on a business's performance is positive and significant. Education is a possible factor to consider when helping a client open a business.
- If VR pays for or provides training for clients to start a business, they may want to consider the region where the client lives.

Findings by Topic

Business Survival (3 articles)

- For many small rural businesses, survival, not profit, is the biggest aim. This reduces risk-taking. This may be associated with lower rates of innovation and growth. Businesses run by persons with medium risk attitudes survive longer than those run by a persons with low or high risk attitudes.
- In Finland, exit rates between 1987 through 2002 were lower in rural areas during a businesses' first years.
- Labor markets with weak paid-employment opportunities push workers into self-employment and force individuals to continue in self-employment. As firms survive the first years, exit rates decrease.

Connection between unemployment and self-employment (1 article)

- Research indicates that redundant employees are adaptable and willing to become self-employed.

Education and Entrepreneurship (5 articles)

- The higher the respondent's level of education, the greater the likelihood that he or she will start a business.
- Students who participated in an entrepreneurship education program (as compared to those who did not) increased their competencies and intention towards self-employment.
- A meta-analysis of almost 100 empirical studies on the impact of formal schooling on entrepreneurship selection and performance in industrial countries made a strong case for investing in human capital through education at all levels.
- An examination of two types of entrepreneurship education, active (e.g., business simulations) vs. reflective (e.g., theory lectures) found that active modes are positively related to self-employment intentions and attitudes and are effective no matter the region's entrepreneurial activity. Reflective modes are more effective in regions with a high degree of entrepreneurial activity.
- Participants in a Young Enterprise Company Program had greater enterprise potential than nonparticipants.

Effects of Taxes on Small Business Activity (1 article)

- Instead of tax breaks for small businesses, states should focus on traditional tax reforms such as lower tax rates, broader tax bases, and simpler tax systems, which are more likely to create a neutral and productive tax environment.

Employment vs. Self-Employment (2 articles)

- People who are self-employed experienced fewer negative emotions than traditionally employed. Fewer negative emotions can explain why individuals decide to become self-employed. This suggests that the self-employed have autonomy and opportunity to use coping tools to effectively regulate negative emotions.
- After hurricane Katrina self-employment played an important role in post-disaster labor market recovery, especially for evacuees who did not return. This may be due to poor job prospects in the wage and salary sector or new opportunities for starting businesses in the wake of Katrina.

Entrepreneurial Characteristics

Influence of a Role Model (3 articles)

- A Dutch study found that role models (a person the entrepreneur has a strong tie with) provide an example, help increase efficiency, are an inspiration, and provide motivation.
- The likelihood of children becoming self-employed is higher in families where self-employed parental role models are present. However, an individual's openness to experiences moderates this relationship (e.g., the individual may be influenced more by other opportunities).
- A successful small business was strongly correlated with prior work experience in a family member's business, but weakly correlated with having a self-employed family member.

Risk Attitude (1 article)

- For German men and women, there is no difference in terms of risk attitudes on the decision to start a business. However, women's higher average risk aversion could explain why there is a lower share of female entrepreneurs in the German population. People with lower risk aversion are more likely to move from employment to become self-employed.

Intention to Become Self-Employed (1 article)

- Attitude, perceived behavioral control, and subjective norms predict entrepreneurial intention.

Students (3 articles)

- Students with entrepreneurial interests enjoy interacting with other people, but they are not emotionally dependent upon them.
- Young inventors' entrepreneurial experience is driven by dimensions of their university laboratory research experience.
- Teachers at workshop schools and craft centers in southern Spain indicated that their students did not have the competencies needed to create and manage a business.

Older self-employed, ages 50+ (3 articles)

- A European study found that older people with disabilities (especially females) who were self-employed in 2004 were less likely to remain self-employed in 2007 and that disability trajectory influenced the exit. The move from self-employed to out of labor force was higher for disabled than non-disabled individuals and also for people who changed from nondisabled to disabled. Individuals who were disabled in 2004 and 2005 were more likely to move from self-employment to inactivity. Individuals with the trajectory of disabled to nondisabled or disabled to disabled were more likely to remain self-employed in 2004 and 2007 than their counterparts without disabilities.
- For people between the ages 51-67 with a work-limiting health condition, the health condition appears to be a push factor to transition from full-time wage and salary work to self-employment.
- If a person has health insurance or a pension through an employer, he or she may not leave a full-time job for self-employment. People in the highest wealth quartile were more likely to become self-employed than those in the lower wealth quartiles. In Western Finland, people aged 50-plus, who spent the majority of their career in 'blue-collar' industrial work, were less inclined towards entrepreneurship than people younger than 50.

Expectations for Business Performance (2 articles)

- Nascent entrepreneurs are over optimistic. They overestimate the probability that their new business will result in an operating venture, future sales, and employment.
- Determinants of entry into a business operate through both expected performance and decision thresholds: (1) managerial experience increases expected performance while increasing thresholds, (2) entrepreneurial experience increases expected performance with no threshold effect, (3) experience diversity increases expected performance while lowering thresholds, and (4) non-financial motive decreases thresholds with no expected performance effect.

Labor Market Consequences of Temporary Self-Employment (1 article)

- A study in Sweden found that immigrant wage earners who enter then leave self-employment did not improve their labor market outcomes when compared to wage earners who stayed in wage employment. Encouraging immigrant wage earners to become self-employed should be done with care.

Male-Female Differences (1 article)

- Businesses owned by men survive at a higher rate. Women have less prior work experience and start-up capital.

Satisfaction/Quality of Life Associated with Self-Employment (6 articles)

- Twenty women self-employed as care workers were found to be more satisfied with their jobs than wage and salary workers.
- British and French first-generation are more satisfied than second-generation self-employed.
- Most Finnish necessity entrepreneurs want to switch back to paid employment unless they earn a satisfactory living.
- Farmers have poorer subjective and health-related quality of life than other working groups.
- Social capital explains differences in peoples' well-being.
- Entrepreneurs have higher well-being and lower physical and mental illness.

Self-Employment and Family (2 articles)

- Twenty Mary Kay consultants manage internal and external temporal and spatial boundaries through spatial, behavioral, temporal, social, and psychological strategies.
- Marital status supports self-employment; cohabitation is less supportive. Men are more likely to influence women to become self-employed than the other way around.

Small Business' Contribution to Community (2 articles)

- A strong entrepreneurial culture (0-4 employees) is associated with lower rates of mortality, obesity, and diabetes.
- Investing in locally-grown enterprises can yield large returns for communities. A study of Appalachia found self-employment was positively associated with employment and income growth and that counties with higher rates of startup survivals had fewer business deaths.

Start-up Funding/Microenterprise/Other Assistance Programs (2 articles)

- Microenterprise programs do not result in significant gains for participants. The programs may assist low income people to start or develop their businesses, but they may not provide enough start-up funding, market knowledge, or skills training. If the goal is to move poor families out of poverty, program and policy changes should be explored.
- A study of the effects of microenterprise on poor women in the United States found that microenterprise assistance programs were not an effective antipoverty strategy.

Studying Previously-used Self-Employment Research and Methods (1 article)

- Future research designs using longitudinal panel studies should do a better job of matching theories and the phenomena captured in the data.

Racial Minority Groups and Self-Employment (3 articles)

- A person's race increases the likelihood of self-employment for some groups and decreases it for others. Increased exposure to other races raises the likelihood of entrepreneurial careers for all groups, especially for Blacks.
- An analysis of the 2003 and 2005 National Minority Business Owner Survey information about the owner, the family, and the business revealed similarities and differences across the groups.
- An analysis of data from the Panel Study of Entrepreneurial Dynamics found significant differences in motivations between black and white entrepreneurs both in starting and in their intentions to grow the new venture.

Reasons for Becoming Self-Employed (2 articles)

- Employer-provided health insurance restricts business creation, retirement increases it.
- Women start businesses for a variety of reasons but foremost are to be challenged or have meaningful work, to increase a positive environment, and to achieve independence.

Role of the Environment on Self-Employment (4 articles)

- Industrial R&D expenditure plays an important role in promoting regional firm birth. University and government R&D also indirectly influence the regional firm birth rate. The synergy between university and industrial R&D enhances the sustainability of firms. Interactions between university and government R&D and government and industrial R&D are associated with an increase in firm death.
- A study of Maine, New Hampshire, and Vermont, three predominately rural states, found that under some circumstances self-employment appears to be a viable economic strategy at the local level. Counties with high rates of employment in primary industries have higher rates of self-employment. Counties that experience rapid declines in primary industries have higher rates of self-employment. Counties with higher rates of self-employment have significantly lower rates of poverty.
- When wage and salary employment volatility is higher, more people are self-employed in the next period. In the county-level model, a 1-standard deviation increase in risk increased the self-employment rate by 63%.
- Data from a web survey of 1600 independent professionals in the Netherlands were combined with 51 in-depth interviews. Respondents achieved maximum earnings between the ages of 45 and 50. They indicated network size is not important, but building and maintaining a network and strong relationships with agents are.

Serial Entrepreneurship (2 articles)

- A study of ex-entrepreneurs found that those lacking the characteristics associated with nascent entrepreneurship are less likely to start another business.
- A study of ex-entrepreneurs who exited their initial firm when they were 30 or younger found they will postpone reentry to entrepreneurship if (a) they are better educated, (b) they dissolved a firm they founded, or (c) there is high unemployment. They will not delay reentry to entrepreneurship if they (a) have more experience in paid employment, (b) have more business ownership experience, (c) have managerial experience, or (d) sold a firm they founded.

Section II: In-Depth Article Descriptions

Business Survival (3 articles)

Citation: Bosworth, G. (2012). Tales from the paperman. *Journal of Rural Studies*, 28(4), 499-506.

Author Affiliation: University of Lincoln

Type of Research: Case Study

Description: A case study of one rural business in Britain suggests that for rural businesses profit is not the sole aim; survival often is. Where survival goals outweigh profit goals, risk-taking is reduced. Survival might relate to supporting a family and maintaining a home, a social pressure not to “fail” or a social desire to continue providing a valued service. These pressures may not be as strong in urban areas where churn tends to be higher and people move more readily between jobs. The downside is that low risk-taking and low rates of churn are associated with lower rates of innovation and growth, resulting in concerns for the future of certain categories of rural businesses.

Conclusion: This research offers a more nuanced understanding of how the external benefits of rural businesses can support wider rural development objectives. The value created by rural businesses can also be more clearly recognized, both by rural business owners themselves and by those responsible for implementing rural policies.

Possible Application to VR Practice: None

Citation: Caliendo, M., Fossen, F., & Kritikos, A. (2010). The impact of risk attitudes on entrepreneurial survival. *Journal of Economic Behavior & Organization*, 76(1), 45-63.

Author Affiliation: Caliendo, M., Institute for the Study of Labor, Bonn; German Institute for Economic Research (DIW), Berlin; IAB, Nuremberg; Fossen, F., German Institute for Economic Research, Berlin; Kritikos, A., German Institute for Economic Research; Berlin; University of Potsdam; Institute for the Study of Labor, Bonn; IAB Nuremberg

Type of Research: Cross-sectional, survey, secondary data analysis.

Description: A study using the German Socio-Economic Panel of about 22,000 individuals living in 12,000 households in Germany observed in both waves of 2004 and 2005 had participants evaluate their own inclination toward risk, which was used to analyze how risk effects survival of a self-employment business. Attitudes have a strong impact on the survival rates of already active entrepreneurs. The relationship between risk attitudes and entrepreneurial survival is inversely U-shaped. Persons with particularly low or particularly high risk attitudes survive as entrepreneurs less often than do persons with a medium-level risk attitude.

Conclusion: None

Possible Application to VR Practice: None

Citation: Haapanen, M., Tervo, H. (2009). Self-employment duration in urban and rural locations. *Applied Economics*, 41(19), 2449-2461.

Author Affiliation: Haapanen, M., University of Jyväskylä, Tervo, H., University of Jyväskylä

Type of Research: Cross-sectional, survey, secondary data analysis.

Description: This article analyzed self-employment spells in Finland using a large data set for the period 1987 to 2002. Researchers found that exit rates from self-employment and the length of self-employment spells depend upon location (urban versus rural area) and the cyclical trends in the economy. Rural areas have significantly lower exit rates in the first years of self-employment than urban areas. On average, survival times are longer in rural than urban locations. Rural areas as compared to urban areas in Finland are characterized by weaker employment conditions. Self-employment is also on a higher level in rural areas. These results suggest that the push effect is strong in rural locations: aside from the fact that labor markets with weak paid-employment opportunities push workers into self-employment, they force individuals to continue in self-employment, even if the firm did not turn out to be very profitable in the first place. If the firms survive the difficult first years, hazard rates will be considerably smaller thereafter.

Conclusion: None

Possible Application to VR Practice: None

Connection between Unemployment and Self-employment (1 article)

Citation: Katic, I., Penezic, N., Borocki, J., & Zekic, S. (2011). Entrepreneurship significance in restructuring process. *Technics Technologies Education Management*, 6(4), 902-907.

Author Affiliation: Unknown

Type of Research: Unknown

Description: Research indicates redundant employees are adaptable and willing to become self-employed. It also indicates that their needs should be identified.

Conclusion: It is important to develop a strategy that includes support programs to provide assistance and instruction for starting a business.

Possible Application to VR Practice: None

Education and Entrepreneurship (5 articles)

***Citation:* Block, J. H., Hoogerheide, L., & Thurik, R., (2013). Education and entrepreneurial choice: An instrumental variables analysis. *International Small Business Journal*, 31(1), 23-33.**

Author Affiliation: Erasmus University Rotterdam

Type of Research: Cross-sectional, survey, secondary data analysis.

Description: The effect of education on the decision to become self-employed was examined. To do this researchers analyzed a dataset of more than 10,000 individuals from 27 European countries and the US. Education had a strong positive effect on the decision to become self-employed. The higher the respondent's level of education, the greater the likelihood that he or she would start a business.

Conclusion: This article contributes to the literature by developing a model to explain the effect of education on entrepreneurial choice. It shows that a higher level of education increases the likelihood of becoming self-employed.

Possible Application to VR Practice: None

***Citation:* Sanchez, J.C. (2011). University training for entrepreneurial competencies: Its impact on intention of venture creation. *International Entrepreneurship and Management Journal*, 7(2), 239-254.**

Author Affiliation: Universidad de Salamanca

Type of Research: Experimental.

Description: This study tested the effect of entrepreneurship education programs on entrepreneurial competencies and intention to start a business. Data were collected from 863 Castilla & Leon (Spain) university students. There were 460 students in the control group. There were 403 students in the program group. Students in the program group increased their competencies and intention towards self-employment. Students in the control group did not.

Conclusion: The findings contribute to the theory of planned behavior and to the literature of entrepreneurship education. It shows the effect of specific benefits for the students derived from the entrepreneurship program. Instructors should receive training on how to teach entrepreneurship and also on how to change "hearts and minds." This is because the instructor plays a leadership role within the group of students, but he or she must play the role of a charismatic leader. It has been shown that charismatic leaders have a strong influence on their followers. The authors suggest that charismatic instructors who can communicate their enthusiasm for entrepreneurship through non-verbal expressiveness will influence students so they have higher entrepreneurial intention.

Possible Application to VR Practice: None

***Citation:* Van der Sluis, J., Van Praag, M., Vijverberg, W. (2012), Education and entrepreneurship selection and performance: A review of the empirical literature. *Journal of Economic Surveys*, 22(5), 795-841.**

Author Affiliation: Praag, M., University of Amsterdam; Vijverberg, W., University of Texas

Type of Research: Meta-analysis.

Description: This research reviewed almost 100 empirical studies on the impact of formal schooling on entrepreneurship selection and performance in industrial countries. The meta-analyses revealed five main conclusions. The impact of education on selection into entrepreneurship is insignificant. The effect of education on performance is positive and significant. The return to a marginal year of schooling is 6.1% for an entrepreneur. The effect of education on earnings is smaller for entrepreneurs than for employees in Europe, but larger in the USA. The returns to schooling in entrepreneurship are higher in the USA than in Europe, higher for females than for males, and lower for non-whites or immigrants. The findings make a strong case for investing in human capital through education at all levels. However, the accumulated evidence in this literature is by no means conclusive yet.

Conclusion: None

Possible Application to VR Practice: Education is a possible factor when helping a client open a business.

***Citation:* Walter, S.G., Dohse, D. (2012). Why mode and regional context matter for entrepreneurship education. *Entrepreneurship and Regional Development*, 24(9-10), 807-835.**

Author Affiliation: Christian-Albrechts-University

Type of Research: Cross sectional, survey.

Description: This study examined how modes of entrepreneurship education, active (e.g., business simulations) vs. reflective (e.g., theory lectures) alone and in interaction with a universities' regional context affect students' self-employment intentions. Active modes are positively related to self-employment intentions and attitudes. The effect of entrepreneurship education is moderated by the regional context. Reflective modes are more effective in regions with a high degree of entrepreneurial activity. Active modes are effective and do not depend on a region's entrepreneurial activity. Both modes, whether effective in a certain context or alone, seem to affect students' attitudes towards entrepreneurship. They do not encourage or increase students' self-perceived competence to become self-employed. The results suggest that departments should offer a mix of active and reflective modes that are responsive to regional circumstances. For example regions with a high degree of entrepreneurial activity can use both reflective and active modes. Regions with a low degree of entrepreneurial activity should use active modes.

Conclusion: Entrepreneurship teachers and researchers are encouraged to identify methods effective for a particular context and to teach entrepreneurial know-how and skills.

Possible Application to VR Practice: If VR provides training for clients to start a business, they may want to consider the region where the client lives.

***Citation:* Athayde, R. (2009). Measuring enterprise potential in young people. *Entrepreneurship Theory and Practice*, 33(2), 481-500.**

Author Affiliation: Kingston University

Type of Research: Cross sectional, survey.

Description: This research studied the impact of participating in a Young Enterprise Company Program in six secondary schools in London. It found that participation resulted in positive attitudes toward self-employment. Participants had greater enterprise potential than nonparticipants. As an aside, a family background of self-employment had a positive influence on intentions to become self-employed.

Conclusion: This study has shown that it is possible to design a test based on attitude theory and using scale development techniques. The test measures "enterprise potential" in school-aged young

people. It can be used in independent evaluations of enterprise education programs. In this setting it takes into account a range of other influences on young people's attitudes toward enterprise. The test could be improved by refining some of the underlying constructs.

Possible Application to VR Practice: None

Effects of Taxes on Small Business Activity (1 article)

Citation: Bruce, D., & Deskins, J. (2012). Can state tax policies be used to promote entrepreneurial activity? *Small Business Economics*, 38(4), 375-397.

Author Affiliation: Bruce, D., University of Tennessee; Deskins, J., Creighton University

Type of Research: Cross sectional, longitudinal, secondary analysis.

Description: In general, state tax policies do not affect entrepreneurial activity. This is from analyzing the 50 states' tax policy information from 1989 through 2002. A state's share of the national entrepreneurial stock is reduced slightly through higher individual income tax rates; a state-level estate, inheritance or gift tax; and a higher weight on the sales factor in the state corporate income tax apportionment formula. States with more progressive personal income tax structures and more aggressive corporate income taxes through combined reporting requirement tend to have slightly higher entrepreneurship rates. The composition of state tax portfolios is not a significant determinant of state entrepreneurship. These results suggest that tax policy changes will probably not have the effects on small business activity that policy makers might believe. Instead of developing tax breaks for small businesses, states should focus on traditional tax reforms. These include lower tax rates, a broader tax base, and a simpler tax system.

Conclusion: Tax policy changes probably will not affect small business activity in the way that policy makers might believe. Instead of tax breaks for small businesses, states should focus on traditional tax reforms such as lower tax rates, broader tax bases, and simpler tax systems. These are more likely to create a more neutral and productive tax environment for small and large businesses and individuals alike.

Possible Application to VR Practice: None

Employment vs. Self-Employment (2 articles)

Citation: Patzelt, H., & Shepherd, D.A. (2011). Negative emotions of an entrepreneurial career: Self-employment and regulatory coping behaviors. *Journal of Business Venturing*, 26(2), 226-238.

Author Affiliation: Patzelt, H., European Business School; Shepherd, D. A., Indiana University

Type of Research: Cross-sectional, survey.

Description: A nationwide survey of more than 2,700 US citizens showed the self-employed experienced fewer negative emotions than the traditionally employed. Fewer negative emotions can explain individuals' decision to become self-employed. The findings have practical implications. They suggest the self-employed have autonomy and opportunity to use coping tools to effectively regulate negative emotions.

Conclusion: Our findings have practical implications. People who consider self-employment but who hold off due to potential negative emotional consequences, already possess the coping tools needed to regulate their negative emotions.

Possible Application to VR Practice: Might be an interesting characteristic for VR to consider.

Citation: Zissimopoulos, J., & Karoly, L.A. (2010). Employment and self-employment in the wake of hurricane Katrina. *Demography*, 47(2), 345-367.

Author Affiliation: RAND Corporation

Type of Research: Cross-sectional, survey, secondary data analysis.

Description: The monthly Current Population Survey was used to examine the short- and longer-term effects of Hurricane Katrina on the labor market outcomes of prime-age individuals in the most affected states-Alabama, Florida, Louisiana, and Mississippi-and for evacuees in any state. With the exception of Mississippi, employment and unemployment one year after the hurricane were at rates similar to the end of 2003. Self-employment played an important role as part of post-disaster labor market recovery, especially for evacuees who did not return. This may be due to poor job prospects in the wage and salary sector or new opportunities for starting businesses in the wake of Katrina.

Conclusion: None

Possible Application to VR Practice: None

Entrepreneurial Characteristics: Influence of a Role Model (3 articles)

Citation: Bosma, N., Hessels, J., Schutjens, V., Van Praag, M., & Verheul, I. (2012). Entrepreneurship and role models. *Journal of Economic Psychology*, 33(2), 410-424.

Author Affiliation: Bosma, N., Utrecht University; Hessels, J., Erasmus School of Economics; Schutjens, V., Utrecht University; Van Praag, M., Amsterdam School of Economics ; Verheul, I., Rotterdam School of Management

Type of Research: Cross-sectional, survey.

Description: According to 292 Dutch entrepreneurs who recently started a business, role models matter both pre- and post-startup. Role models provide an example, help to increase efficiency, are an inspiration, and provide motivation. Role models are not media icons. They are someone the entrepreneur has a strong tie with.

Conclusion: Future research should explore how entrepreneurial role models affect venture performance.

Possible Application to VR Practice: None

Citation: Chlosta, S., Patzelt, H., Klein, S.B., Dormann, C., & Chlosta, S. (2012). Parental role models and the decision to become self-employed: The moderating effect of personality. *Small Business Economics*, 38(1), 121-138.

Author Affiliation: Chlosta, S., European Business School; Patzelt, H., Max-Llanck, Institute of Economics; Klein, S. B., WHU Otto Besheim School of Management; Dormann, C., Johannes, Gutenberg University

Type of Research: Cross-sectional, survey.

Description: The likelihood of children becoming self-employed is higher in families where self-employed parental role models are present. However, an individual's openness to experiences moderates the impact of self-employed role models (e.g., the individual may be influenced more by other opportunities).

Conclusion: Future research should include the individual's personality and environment as variables. This research adds to the literature in the areas of entrepreneurial role models, family businesses, and the psychology of the entrepreneur.

Possible Application to VR Practice: None

Citation: Fairlie, R.W., & Robb, A. (2007). Families, human capital, and small business: Evidence from the Characteristics of Business Owners Survey. *Industrial & Labor Review*, 60(2), 225-245.

Author Affiliation: University of California

Type of Research: Cross-sectional, survey, secondary analysis.

Description: A successful small business was strongly correlated with prior work experience in a family member's business, but weakly correlated with having a self-employed family member.

Conclusion: Government programs should provide mentoring, internships, or apprenticeship-type training, which might help to reduce inequalities. Also, experimental research should be conducted to evaluate the effectiveness of such programs.

Possible Application to VR Practice: While prior work experience in a family member's business should not be used to screen out possible candidates, it could point out stronger ones.

Entrepreneurial Characteristics: Risk Attitude (1 article)

Citation: Caliendo, M., Fossen, F. M., & Kritikos, A. S. (2009). Risk attitudes of nascent entrepreneurs-new evidence from an experimentally validated survey. *Small Business Economics*, 32(2), 153-167.

Author Affiliation: Caliendo, M., Institute for the Study of Labor, Bonn; German Institute for Economic Research (DIW), Berlin; IAB, Nuremberg; Fossen, F., German Institute for Economic Research, Berlin; Kritikos, A., German Institute for Economic Research; Berlin; University of Potsdam; Institute for the Study of Labor, Bonn; IAB Nuremberg

Type of Research: Cross-sectional, survey, secondary data analysis.

Description: Using a German Socio-Economic Panel of about 22,000 individuals living in 12,000 households in Germany observed in both waves of 2004 and 2005, researchers examined risk attitude and its link to self-employment. Less risk-averse persons are more likely to become entrepreneurs if they were previously employed. For persons who become self-employed while unemployed, the risk attitude seems to have no impact on this significant decision. For both women and men, risk attitudes have a similar impact on the decision to start as an entrepreneur. This may explain why, in the German population, there is a lower rate of women entrepreneurs

Conclusion: None

Application to VR Practice: None

Entrepreneurial Characteristics: Intention to Become Self-Employed (1 article)

Citation: Kolvereid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing*, 21(6), 866-885.

Author Affiliation: Bodo Graduate School of Business

Type of Research: Cross-sectional, longitudinal, survey.

Description: A 2006 study found that beliefs determine attitudes towards self-employment. Attitude and subjective norms determine the intention to become self-employed. Intention to become self-employed determines actual entry into self-employment. In 2013, perceived behavioral control was included in the model and the model changed as follows: Attitude, perceived behavioral control, and subjective norms predict entrepreneurial intention. Intention and perceived behavioral control predict later behavior.

Conclusion: None

Possible Application to VR Practice: None

Entrepreneurial Characteristics: Students (3 articles)

Citation: Decker, W.H., Calo, T.J., Weer, C.H., Decker, & W.H. (2012). Affiliation motivation and interest in entrepreneurial career. *Journal of Managerial Psychology*, 27(3), 302-320.

Author Affiliation: Salisbury University

Type of Research: Cross-sectional, survey.

Description: Students with entrepreneurial interests enjoy interacting with other people, but they are not emotionally dependent upon them.

Conclusion: This paper adds to the literature by assessing four subcategories of affiliation motivation instead of treating it as a single dimension.

Possible Application to VR Practice: None

Citation: Link, A.N., Welsh, & D.H.B. (2013). From laboratory to market: On the propensity of young inventors to form a new business. *Small Business Economics*, 40(1), 1-7.

Author Affiliation: University of North Carolina

Type of Research: Cross-sectional, survey.

Description: Young inventors' entrepreneurial experience is driven by dimensions of their university laboratory research experience.

Conclusion: None

Possible Application to VR Practice: None

Citation: Rodriguez, F.M.M. (2011). Workshop school and craft centre teacher perceptions about their students' entrepreneurial competences. *Revista De Education*, 356, 303-326.

Author Affiliation: Not found

Type of Research: Cross-sectional, survey.

Description: Teachers at workshop schools and craft centers in southern Spain rated students' entrepreneurial competencies. They said students did not have the competencies needed to create and manage a business.

Conclusion:

The authors propose implementing coursework and other opportunities for students to develop competencies to run a successful business.

Possible Application to VR Practice: None

Entrepreneurial Characteristics: Older self-employed, ages 50+ (3 articles)

Citation: Pagan-Rodriguez, R. (2012). Transitions to and from self-employment among older people with disabilities in Europe. *Journal of Disability Policy Studies*, 23(2), 82-93.

Author Affiliation: University of Malaga

Type of Research: Cross-sectional, longitudinal, survey, secondary analysis.

Description: A labor-market transitions study was conducted using the European Survey of Health, Ageing, and Retirement for 2004 and 2007. Older people with disabilities (especially females) who were self-employed in 2004 were less likely to remain self-employed in 2007. Disability trajectory influenced status. The move from self-employed to out of labor force was higher for disabled than non-disabled individuals and also for people who changed from nondisabled to disabled. Individuals who were disabled in 2004 and 2005 were more likely to move from self-employment to inactivity.

Individuals with the trajectory of disabled to nondisabled or disabled to disabled were more likely to remain self-employed in 2004 and 2007 than their counterparts without disabilities.

Conclusion: This study contributes to understanding how older people with disabilities in Europe use self-employment as a way to enter or leave the labor market.

Possible Application to VR Practice: Although this study focused on older individuals with disability, VR should include accommodating disability trajectory when developing the business.

Citation: Zissiniopoulos, J. M., & Karoly, L.A. (2007). Transitions to self-employment at older ages: The role of wealth, health, health insurance, and other factors. *Labour Economics*, 14(2), 269-295.

Author Affiliation: RAND Corporation

Type of Research: Cross sectional, longitudinal, survey, secondary analysis.

Description: For people between the ages 51-67 with a work-limiting health condition, a health condition appears to be a push factor to transition from full-time wage and salary work to self-employment.

Conclusion: None

Possible Application to VR Practice: None

Citation: Kautonen, T, Luoto, S., & Tornikoski, E.T. (2010). Influence of work history on entrepreneurial intentions in “prima age” and “third age”: A preliminary study. *International Small Business Journal*, 28(6), 583-601.

Author Affiliation: Kautonen, T., University of Turku; Luoto, S., University of Vaasa; Tornikoski, E. T., Saint-Etienne School of Management

Type of Research: Cross-sectional, survey.

Description: If a person has health insurance or a pension through an employer, he or she may not leave a full-time job for self-employment. People in the highest wealth quartile were more likely to become self-employed than those in the lower wealth quartiles. In Western Finland, people aged 50-plus, who spent the majority of their career in ‘blue-collar’ industrial work, are less inclined towards entrepreneurship than people younger than 50.

Conclusion: Policy makers should focus on increasing the older population’s awareness of self-employment as a viable, positive, and attractive late-career option. Further research is needed to understand why older blue collar industrial workers are less attracted to self-employment than the older population on average.

Possible Application to VR Practice: None

Expectations for Business Performance (2 articles)

Citation: Cassar, G. (2010). Are individuals entering self-employment overly optimistic? An empirical test of plans and projections on nascent entrepreneur expectations. *Strategic Management Journal*, 31(8), 822-840.

Author Affiliation: University of Pennsylvania

Type of Research: Cross-sectional, longitudinal, survey, secondary analysis.

Description: Nascent entrepreneurs are over optimistic. They overestimate the probability that their new business will result in an operating venture, future sales, and employment.

Conclusion: This paper contributes to the literature on the relationship between self-employment

and family context. It looks at the influence of family context. It also includes married and other relationship arrangements such as living together, divorced, widowed, or single.

Possible Application to VR Practice: None

Citation: McCann, B.T., & Folta, T.B. (2012). Entrepreneurial entry thresholds. *Journal of Economic Behavior & Organization*, 84(3), 782-800.

Author Affiliation: McCann, B. T., Vanderbilt University; Folta, T. B., Purdue University

Type of Research: Cross-sectional, longitudinal, survey, secondary analysis.

Description: Research found that the determinants of entry into a business operate through both expected performance and decision thresholds: (1) managerial experience increases expected performance while increasing thresholds, (2) entrepreneurial experience increases expected performance with no threshold effect, (3) experience diversity increases expected performance while lowering thresholds, and (4) non-financial motive decreases thresholds with no expected performance effect.

Conclusion: This research adds an empirical model to the theoretical literature on entrepreneurial choice, which illuminates the distinct causal pathways of entry determinants. The threshold model's applicability is not limited to the initial entry choice. It can be applied to the launch decision. It is flexible enough to apply to other decisions relevant to entrepreneurs, such as growth and expansion decisions.

Possible Application to VR Practice: None

Labor Market Consequences of Temporary Self-Employment (1 article)

Citation: Anderson, L. (2011). Occupational choice and returns to self-employment among immigrants. *International Journal of Manpower*, 32(8), 900-922.

Author Affiliation: Linnaeus University

Type of Research: Survey, longitudinal, secondary analyses.

Description: A study in Sweden found that immigrant wage earners who enter then leave self-employment did not improve their labor market outcomes when compared to wage earners who stayed in wage employment. Encouraging immigrant wage earners to become self-employed should be done with care.

Conclusion: This study will be valuable to those who are interested in the economic consequences of immigrant self-employment. Encouraging immigrant wage earners to become self-employed should be done with care. At the same time, if the alternative is unemployment, the results show that a period of self-employment may be preferable because a period of unemployment appears to have a large negative effect on earnings as well as future employment opportunities in paid employment. Further, because we do not know the labor market outcomes of people who remain self-employed, self-employment may still be a way to integrate immigrants into the labor market.

Possible Application to VR Practice: None

Male-Female Differences (1 article)

Citation: Boden, R.J., Nucci, A.R. (2000). On the survival prospects of men's and women's new business ventures. *Journal of Business Venturing*, 15(4), 347-362.

Author Affiliation: Boden, R. J., University of Toledo; Nucci, A. R., U.S. Bureau of the Census

Type of Research: Cross-sectional, survey, secondary analysis.

Description: This research compared the Census Bureau's 1982 and 1987 Characteristics of Business Owners survey data on a sample of white male and female sole proprietors. Businesses owned by men survived at a rate of 4 to 6% higher. Most business owners had some prior employment in the wage sector. Women had less than 10 years of paid employment experience. This is important because the survival prospect of both male- and female-owned businesses is greater for owners with 10 or more years of prior work experience and/or 4 or more years of college. Women in both cohorts used less capital to start or acquire their businesses. This is important because business survival for the 1982 cohort was positively related to the amount of start-up capital.

Conclusions: Research on business start-up and survival for a given time period must factor in product and labor markets for that time period. Women's fewer years of general work experience and in managerial positions may be remediated by education or mentoring.

Possible Application to VR Practice: Clients who do not have the recommended amount of work experience or college may need additional education or mentoring for business survival. Also adequate capitalization is important to business survival.

Racial Minority Groups and Self-Employment (3 articles)

***Citation:* Fairchild, G.B. (2009). Residential segregation influences on the likelihood of ethnic self-employment. *Entrepreneurship Theory and Practice*, 33(2), 373-395.**

Author Affiliation: Unknown

Type of Research: Cross sectional, survey, secondary data analyses.

Description: This paper described a model of the potential of U.S. racial minority groups to enter self-employment. It is based on individual-, household-, and metropolitan area-level factors. Results indicate that clustering by race has group-specific influences, which increases the likelihood of self-employment for some groups and decreases it for others. Higher levels of exposure to other races raise the likelihood of entrepreneurial careers for all groups, especially for Blacks.

Conclusion: Segregation is an influential and under-examined influence on self-employment. It explains gaps across and within racial and ethnic groups. Policymakers should recognize the influence that spatial exclusion, such as fewer resources or lower rates of business ownership, has on economic action to assist with strengthening communities.

Possible Application to VR Practice: None

***Citation:* Puryear, A.N., Rogoff, E.G., Lee, M.S., Heck, R.K.Z., Grossman, E.B., Haynes, G.W., & Onochie, J. (2008). Sampling minority business owners and their families: The understudied entrepreneurial experience. *Journal of Small Business Management*, 46(3), 422-455.**

Author Affiliation: Puryear, A. N., Rogoff, E.G., Lee, M.S., Heck, R.K.Z., Grossman, E.B., Onochie, J., City University of New York; Haynes, G. W., Montana State University

Type of Research: Cross sectional, survey, secondary analyses.

Description: The 2003 and 2005 National Minority Business Owner Survey (NMBOS) is a national random sample of African American, Korean American, Mexican American, and nonminority business owners. Analyses of the NMBOS revealed similarities and differences across the four groups. Researchers identified the NMBOS as the first to offer information about the owner, the family, and the business.

Conclusion: There is a need to study ethnic businesses over time and over generations of immigrant entrepreneurs. Such a longitudinal study could shed light on a variety of business aspects such as management styles and openness to outsiders.

Possible Application to VR Practice: None

Citation: Edelman, L.F., Brush, C.G., Manolova, T.S., & Greene, P.G. (2010). Start-up motivations and growth intentions of minority nascent entrepreneurs. *Journal of Small Business Management*, 48(2), 174-196.

Author Affiliation: Edelman, L. F., Manolova, T.S., Bentley University; Brush, C. G., Greene, P.G., Babson College.

Type of Research: Survey, longitudinal, secondary analyses.

Description: An analysis of data from the Panel Study of Entrepreneurial Dynamics found significant differences in motivations between black and white entrepreneurs both in starting and in their intentions to grow the new venture.

Conclusion: None

Possible Application to VR Practice: None

Reasons for Becoming Self-Employed (2 articles)

Citation: Fairlie, R.W., Kapur, K., & Gates, S. (2011). Is employer-based health insurance a barrier to entrepreneurship? *Journal of Health Economics*, 30(1), 146-162.

Author Affiliation: Fairlie, R. W., University of California; Kapur, K., University College Dublin; Gates, S., RAND Corporation

Type of Research: Cross-sectional, matched, survey, secondary analysis.

Description: A study concluded that employer-provided health insurance restricts business creation. Business ownership rates increased from just under age 65 to just over age 65. There was no change in business ownership rates for people younger than 55 and older than 75.

Conclusion: Expanding health insurance coverage may increase business creation.

Possible Application to VR Practice: None.

Citation: Hughes, K.D., (2003). Pushed or pulled? Women's entry into self-employment and small business ownership. *Gender Work and Organization*, 10(4), 433-454.

Author Affiliation: University of Alberta

Type of Research: Qualitative.

Description: A study of why women became self-employed found that push factors were not the primary reason why most women started a business in the 1990s. Most became voluntarily self-employed. They wanted a challenge, a positive work environment, independence, or meaningful work. However, a quarter to a third of the respondents were pushed because of economic reasons. These women had lower incomes and were less satisfied with their income, job security, and ability to save for retirement than those who voluntarily started a business. Although the pushed were less satisfied than the voluntarily self-employed in the areas of independence, creativity, authority, personal fulfillment, etc., overall the levels of satisfaction for both groups was high. The pushed business owners enjoyed their work.

Conclusion: None.

Possible Application to VR Practice: Extending this idea: would most people who start businesses with VR's help be considered as pushed? If so, it is likely they will earn lower incomes and have less stability in their business.

Role of the Environment on Self-Employment (4 articles)

Citation: Kim, Y., Kim, W., & Yang, T. (2012). The effect of the triple helix system and habitat on regional entrepreneurship: Empirical evidence from the US. *Research Policy*, 41(1), 154-166.

Author Affiliation: Korea Advanced Institute of Science and Technology

Type of Research: Cross-sectional, longitudinal, survey, secondary analysis.

Description: The university–industry–government relationship and habitat are important determinants of innovation and entrepreneurship. This study investigated this effect on birth and death rates of U.S. firms at the state level. Industrial R&D expenditure plays an important role in promoting regional firm birth. University and government R&D also indirectly influence the regional firm birth rate. The synergy between university and industrial R&D enhances the sustainability of firms. Interactions between university and government R&D and government and industrial R&D are associated with an increase in firm death.

Conclusion: Our study contributes to the entrepreneurship policy literature. It recognizes the value of a more structured policy that emphasizes the relationships among university, industry, and government. It also acknowledges habitat's role in promoting regional entrepreneurial activity.

Possible Application to VR Practice: None

Citation: Lippmann, S. (2009). Local labor market dynamics and self-employment in rural New England. *Sociological Spectrum*, 29(3), 371-400.

Author Affiliation: Miami University

Type of Research: Cross-sectional, secondary data analysis.

Description: This study examined the effects of local labor-market, population, and economic characteristics on county-level self-employment rates. It examined rates in Maine, New Hampshire, and Vermont, three predominantly rural states. Counties with currently and/or historically high rates of employment in primary industries have higher rates of self-employment. Counties that experience rapid declines in these industries also have higher rates of self-employment. Counties with higher rates of self-employment have significantly lower rates of poverty. Under some circumstances, self-employment appears to be a viable economic strategy at the local level.

Conclusion: This research offers answers to the question of “is self-employment a viable strategy for individual opportunity and economic growth, or is simply a last-ditch effort to make ends meet.”

Possible Application to VR Practice: None

Citation: Low, S.A., & Weiler, S. (2012). Employment risk, returns, and entrepreneurship. *Economic Development Quarterly*, 26(3), 238-251.

Author Affiliation: Low, S. A., Department of Agriculture; Weiler, S., Colorado State University

Type of Research: Cross-sectional, secondary data analysis.

Description: This research compared local employment portfolios against entrepreneurship. It found that entrepreneurship may be more attractive in areas with high employment risk and/or low returns. When wage and salary employment volatility is higher, more people are self-employed in the next period. The effect of wage and salary employment volatility on self-employment is relatively large. In the county-level model, a 1-standard deviation increase in risk increased the self-employment rate by 63%.

Conclusion: This research contributes to both the entrepreneurship and employment portfolio literature. It is the first to connect regional employment portfolio theory with entrepreneurship. Policy makers can use the findings to foster entrepreneurship. When they understand how job prospects affect entrepreneurship, they can better allocate economic development dollars between recruitment and entrepreneurship.

Possible Application to VR Practice: None

Citation: Van den Born, A., & Van Witteloostuijn, A. (2013). Drivers of freelance career success. *Journal of Organizational Behavior*, 34(1), 24-16.

Author Affiliation: Universities of Antwerpen and Utrecht

Type of Research: Cross-sectional, survey.

Description: This paper reports on a study of the professional freelancer. Data from a web survey of 1600 independent professionals in the Netherlands were combined with 51 in-depth interviews. This paper studied the professional freelancer. Data from a web survey of 1600 independent professionals in the Netherlands were combined with 51 in-depth interviews. The maximum revenue of freelancers lies between 45 and 50 years of age, after which, utilization rates and professional fees diminish. The study shows that network size is not important, but that building strong relations with agents and putting substantial effort in building and maintaining a network are essential. The paper demonstrates the importance of a focused strategy, where the freelancer specializes in a product, service or sector, as well as the adverse effects of a low-cost strategy. The external environment in which an individual freelancer operates is the most important factor determining career success.

Conclusion: The study recommends more research on the relationship between the environment and individual career success.

Possible Application to the VR Process: None

Satisfaction/Quality of Life Associated with Self-Employment (6 articles)

Citation: Anderson, N., & Hughes, K.D. (2010). The business of caring: Women's self-employment and the marketization of care. *Gender Work and Organization*, 17(4), 81-105.

Author Affiliation: University of Alberta

Type of Research: Qualitative.

Description: Twenty Canadian women self-employed as care workers took part in a qualitative study. The study's purpose was to learn about their working conditions, pay and levels of satisfaction. Results show they are more satisfied with their jobs than wage and salary workers.

Conclusion: Future research should focus on self-employed caregivers in order to provide a more complete account of paid care. Research topics might include the types of self-employment situations that most benefit women and the strategies they use for raising the value of providing care.

Possible Application to VR Practice: None.

Citation: Clark, A., Colombier, N., & Masclet, D. (2008). Never the same after the first time: The satisfaction of the second-generation self-employed. *International Journal of Manpower*, 29(7), 591-609.

Author Affiliation: Clark, A., Paris School of Economics; Colombier, N., Masclet, D., University of Rennes

Type of Research: Cross-sectional, longitudinal, survey, secondary analysis.

Description: Findings show that British and French first-generation self-employed (their parents were not self-employed) are more satisfied than the second-generation self-employed.

Conclusion: This is one of the first papers to explore intergenerational satisfaction levels. The authors suggest using an intergenerational factor for similar studies.

Possible Application to VR Practice: None.

***Citation:* Kautonen, T., & Palmroos (2010). The impact of a necessity-based start-up on subsequent entrepreneurial satisfaction. *International Entrepreneurship and Management Journal*, 6(3), 285-300.**

Author Affiliation: University of Vaasa

Type of Research: Cross-sectional, survey, secondary analysis.

Description: Necessity entrepreneurs in Finland are more likely to want to switch back to paid employment. But, they are less likely to do so if they earn a satisfactory living.

Conclusion: Providing training in business skills to help necessity entrepreneurs run an economically viable business might increase their satisfaction with being self-employed. This research contributes to the literature on necessity entrepreneurship.

Possible Application to VR Practice: Most VR consumers are necessity entrepreneurs, but because VR first looks at employment by a business, it is unlikely that they have much of an option to switching back to paid employment.

***Citation:* Saarni, S. I., Saarni, E.S., & Saarni, H. (2008). Quality of life, work ability, and self-employment: A population survey of entrepreneurs, farmers, and salary earners. *Occupational and Environmental Medicine*, 65(2), 98-103.**

Author Affiliation: Saarni, S. I., National Public Health Institute, Finland; Saarni, E. S., University of Turku; Saarni, H., Finnish Institute of Occupational Health

Type of Research: Cross-sectional, survey, secondary analysis.

Description: Farmers report a poorer subjective and health-related quality of life than other working groups. Their poorer health-related quality of life does not seem to be caused by physical health problems. Improving farmers' wellbeing may require going beyond traditional health promotion methods and using psychosocial methods.

Conclusion: In terms of policy, entrepreneurs and wage earners have the same level of needs for work ability, health, and subjective quality of life. For public health providers, farmers should have specific health programs developed for them.

Possible Application to VR Practice: None

***Citation:* Barbieri, P. (2003). Social capital and self-employment: A network analysis experiment and several considerations. *International Sociology*, 18(4), 681-701.**

Author Affiliation: University of Milan

Type of Research: Qualitative.

Description: Social capital can be used to explain differences in peoples' well-being. A useful self-employment social capital network consists of contacts that can be used to achieve an outcome. Different amounts of social capital among the three types of self-employed workers: professionals, skilled, and unskilled have a strong impact on a person's level of work involvement and psychological distress.

Conclusion: Identify how social capital factors into social inequality.

Possible Application to VR Practice: None

Citation: Stephan, U., & Roesler, U. (2010). Health of entrepreneurs versus employees in a national representative sample. *Journal of Occupational and Organizational Psychology*, 83(3), 717-738.

Author Affiliation: Stephan, U., Katholieke Universiteit; Roesler, U., Philipps-University

Type of Research: Cross-sectional, survey, secondary analysis.

Description: This research compared entrepreneurs' health with employees' health. Entrepreneurs showed significantly lower overall somatic and mental morbidity, blood pressure, hypertension rates, and somatoform disorders. They also had higher well-being and more favorable behavioral health indicators.

Conclusion: None

Possible Application to VR Practice: This could be an argument for helping people become self-employed vs. working for an employer.

Self-Employment and Family (2 articles)

Citation: Berke, D.L. (2003). Coming home again: The challenges and rewards of home-based self-employment. *Journal of Family Issues*, 24(4), 513-546.

Author Affiliation: Messiah College

Type of Research: Qualitative.

Description: A qualitative study of 20 Mary Kay consultants looked at how they manage internal and external temporal and spatial boundaries. It revealed they use spatial, behavioral, temporal, social, and psychological strategies.

Conclusion: Research should explore the interaction of work and family with other home-based self-employed occupations.

Possible Application to VR Practice: None.

Citation: Ozcan, B. (2011). Only the lonely? The influence of the spouse on the transition to self-employment. *Small Business Economics*, 37(4), 465-492.

Author Affiliation: London School of Economics & Political Science

Type of Research: Survey, longitudinal, secondary analysis.

Description: An analysis of the "Panel Study of Income Dynamics 1965-2005" shows that marital status contributes to self-employment transitions while cohabitation is less supportive. Skill-spillover between partners might be context dependent and only from men to women. It increases women's likelihood to be self-employed.

Conclusion: This research contributes to the growing literature on the relationship between self-employment and family context. It includes marriage, cohabitation, divorced, widowed, or single. It also includes the influences of partners.

Possible Application to VR Practice: None.

Serial Entrepreneurship (2 articles)

Citation: Stam, E., Audretsch, D., & Meijaard, J. (2008). *Renascent entrepreneurship*. *Journal of Evolutionary Economics*, 18(3-4), 493-507.

Author Affiliation: Stam, E. University of Cambridge; Audretsch, D., Indiana University; Meijaard, J., EIM Business & Policy Research

Type of Research: Survey, longitudinal.

Description: A study of ex-entrepreneurs found that those lacking the characteristics associated with nascent entrepreneurship are less likely to start another business.

Conclusion: This study shows the value of a longitudinal research design and for including past experience and also the performance of an entrepreneur's prior firm as variables. To increase entrepreneurial activity, government policies and programs should increase awareness of it as an option and provide opportunity for opening a business. Opening one business is likely to lead to opening another later in life, which creates another opportunity to increase entrepreneurial activity.

Possible Application to VR Practice: None

Citation: Amaral, A.M., & Baptista, R., Lima, F. (2011). *Serial entrepreneurship: impact of human capital on time to re-entry*. *Small Business Economics*, 37(1), 1-21.

Author Affiliation: Amaral, A. M., Baptista, R., Lima, F., Technical University of Lisbon

Type of Research: Survey, matched sample, longitudinal.

Description: A study of ex-entrepreneurs who exited their initial firm when they were 30 or younger found they will postpone reentry to entrepreneurship if (a) they are better educated, (b) they dissolved a firm they founded, or (c) there is high unemployment. They will not delay reentry to entrepreneurship if they (a) have more experience in paid employment, (b) have more business ownership experience, (c) have managerial experience, or (d) sold a firm they founded.

Conclusion: The study contributes to the literature on serial entrepreneurship because it used time to re-enter as the main variable of interest. By monitoring the skills and experience of each type of entrepreneur and the flows across occupations over time, the research reveals a process of choice for serial entrepreneurs. Future studies should explore the different forms of human capital, their impact, how individuals learn from their first business, and how it all affects their likelihood to delay or hasten entry in a subsequent entrepreneurial venture.

Possible Application to VR Practice: None

Small Business' Contribution to Community (2 articles)

Citation: Blanchard, T.C., Tolbert, C., & Mencken, C. (2012). *The health and wealth of US counties: How the small business environment impacts alternative measures of development*. *Cambridge Journal of Regions Economy and Society*, 5(1), 149-162.

Author Affiliation: Blanchard, T. C., Louisiana State University; Tolbert, C., Mencken, C., Baylor University

Type of Research: Cross-sectional, survey, secondary analysis.

Description: A strong entrepreneurial culture (0-4 employees) is associated with lower rates of mortality, obesity, and diabetes.

Conclusion: Investing in locally-grown enterprises can yield large returns for communities. An entrepreneurial culture may stimulate self-determinism so local residents proactively manage civic affairs to address problems. The entrepreneurial culture approach could be applied to a variety of indicators of well-being such as crime, suicide, population growth, and school performance.

Possible Application to VR Practice: None, but it is reminiscent of our past EcoDevo project.

Citation: Stephens, H.M., Partridge, M.D. (2011). Do entrepreneurs enhance economic growth in lagging regions? *Growth and Change*, 42(4), 431-465.

Author Affiliation: Ohio State University

Type of Research: Cross-sectional, secondary data analysis.

Description: A study of Appalachia found self-employment was positively associated with employment and income growth. Also that in remote regions promoting entrepreneurial capacity may be one of the few economic development strategies with positive payoffs. The counties studied had fewer business deaths and higher rates of startup survivals than the national average.

Conclusion: Programs that support entrepreneurship and new business development may support economic growth, even in areas that are generally lagging and more remote (e.g., regions that are not known for innovative capacity). Further research is needed to understand what policies and programs are best for supporting the types of entrepreneurs that will contribute to sustainable, long-term growth in Appalachia and perhaps in other lagging regions.

Possible Application to VR Practice: None

Start-up Funding/Microenterprise/Other Assistance Programs (2 articles)

Citation: Sanders, C.K. (2002). The impact of microenterprise assistance programs: A comparative study of program participants, nonparticipants, and other low-wage workers. *Social Service Review*, 76(2), 321-340.

Author Affiliation: University of Missouri-St. Louis

Type of Research: Quasi-experimental, matched comparison groups, repeated measures.

Description: This study uses existing data to compare three groups: low-income micro-entrepreneurs who participated in one of seven U. S. microenterprise assistance programs, low-income self-employed workers not attached to microenterprise assistance programs, and low-income wage workers not self-employed. Analyses of household income and poverty status over time reveal that microenterprise programs do not make significant gains for participants. While the programs may be instrumental in allowing low income people to start or develop their businesses, they may not be providing enough start-up funding, market knowledge, or skills training. There are several potential reasons why low-income entrepreneurs with an existing business do not maintain their advantage in earnings as time in business increases. First, low-income entrepreneurs typically begin their business with relatively small loan, which limits the types of businesses started. Most were in service and product areas not likely to result in large earnings such as alterations and sewing, child care, janitorial services, beauty shops, and producing and selling items such as arts and crafts, ceramics, and jewelry. Second, low-income entrepreneurs encounter structural barriers that make it more difficult to gain access to information. Third, earnings for existing businesses may level off because income from the business is often only one source in a household's income package. Individuals may pursue self-employment for a variety of reasons such as flexibility and a sense of autonomy. Their goal may not be to always increase business income. Although microenterprise programs don't make significant gains for participants, their utility should not be disregarded. For example in terms of equity, they help disadvantaged people who wish to be self-employed access start-up capital. But if their goal is to

move poor families out of poverty, program and policy changes should be explored.

Conclusion: More extensive and ongoing services to program participants may help. Market niches and businesses with greater potential earnings should be identified. Microenterprise initiatives should be carefully integrated with other policies to reduce poverty. Policies should enable low-income entrepreneurs to draw more income from their businesses. One way of doing this is through more lenient tax policies. Community and economic development initiatives should create access to markets and facilitate patronage of small businesses. There is a need to identify what low-income micro-entrepreneurs need to run a successful business. Experimental design research should be conducted to identify what works.

Possible Relevance to VR Practice: None

***Citation:* Sanders, C.K. (2004). Employment options for low-income women: Microenterprise versus the labor market. *Social Work Research*, 28(2), 83-92.**

Author Affiliation: University of Missouri-St. Louis

Type of Research: Quasi-experimental, matched comparison groups, repeated measures.

Description: This study examined the effects of microenterprise on poor women in the United States. Household income, income from the business, and poverty status were examined over time and compared across three groups of women: low-income women who participated in one of seven U.S. microenterprise assistance programs; low-income self-employed women not attached to microenterprise assistance programs; and low-income women working but not self-employed. The findings cast doubt on the effectiveness of microenterprise assistance programs as an antipoverty strategy in the United States.

Conclusion: If the goal for microenterprise assistance programs is to move women out of poverty, then program and policy changes are needed. To increase a business' earnings, policies might include more forgiving tax policies. For women receiving public assistance while getting their businesses started, longer-term welfare waivers should be available. Programs must be able to provide ongoing, more extensive and specialized services to women, such as credit. Women of color, women with young children, women who are less-educated, and older women may require special attention. Microenterprise initiatives should be integrated with other policies to maximize poverty reduction. Given that women often combine income from their microbusinesses with wage income, helping women successfully combine income sources may be appropriate. Social workers concerned with the work opportunities of low-income women should know about microenterprise. Practitioners should, at a minimum, be aware of local microenterprise programs and welfare-to-work programs that include self-employment options. They should have basic knowledge about the programs' purpose and the appropriateness of referring clients who may be interested in self-employment.

*Possible Relevance to VR Practice:*None

Studying Previously-used Self-Employment Research and Methods (1 article)

***Citation:* Davidsson, P. & Gordon, S.R. (2012). Panel studies of new venture creation: a methods-focused review and suggestions for future research. *Small Business Economics*, 39(4), 853-876.**

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Type of Research: Systematic review of research studies that use the Panel Study of Entrepreneurial Dynamics data base.

Description: A methods-oriented review of 83 journal articles analyzed longitudinal panel studies of large, random samples of business start-ups at the pre-operational stage. Much of the reviewed research adequately managed the challenges or used the full potential of this research approach. The researchers suggest remedies for context-specific and interrelated methods challenges relating to defining the sample, selecting an appropriate level of analysis, operationalization and conceptualization, and use of longitudinal data and dealing with various types of problematic heterogeneity. They recommend that future research better match (from either direction) theories and the phenomena captured in the data and address some under-explored research questions for which the approach may be particularly fruitful.

Conclusion: This review should assist future research with matching theories with the phenomena captured by the data.

Possible Application to VR Services: None

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