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ORIGINAL SCIENTIFIC PAPER

A Generational Approach to Female Entrepreneurship in Europe

Peter Ester[1]
Research Center Business Innovation Rotterdam Business School, Rotterdam University of Applied Sciences, Rotterdam, the Netherlands
Amelia Román[2]
Centre for Applied Research on Economics and Management, Amsterdam School of International Business, Amsterdam University of Applied Sciences, Amsterdam, the Netherlands

A B S T R A C T

Female entrepreneurship is still a limited phenomenon in European countries and its promotion ranks high on the EU policy agenda. Various frameworks have been offered to explain the main structural differences in entrepreneurship between men and women, emphasizing a variety of underlying factors. With a novel approach, this paper argues that due to a process of generation renewal the numerical difference between male and female entrepreneurship will diminish. Generation replacement is seen by sociologists and other social scientists as the motor behind cultural renewal. Our core interest in this paper in developing such a dynamic interpretation within the European context is the role of different generations (Silent Generation, Babyboomers, Generation X, Millennials).

[1] Address: P.O. Box 25035, 3001 HA Rotterdam, the Netherlands, email: pester@hr.nl Rotterdam, the Netherlands
[2] Address: P.O. Box 22575, 1100 DB Amsterdam, the Netherlands, e-mail: a.a.roman@hva.nl

Younger cohorts of females are hypothesized to be more pro entrepreneurship and pro self-employment both in terms of attitudes, intentions, and behaviors, compared to older cohorts. They are furthermore assumed to converge with their male generation members in this regard. This paper empirically tests these two hypotheses by analyzing multi cross-sectional European data from the Eurobarometer over a span of thirty-five years (1980-2015). Results show that this generational approach sheds new light on explaining trends in female entrepreneurship. We find evidence of an increased growth in female entrepreneurship that can be attributed to generation replacement. This rise in total female entrepreneurship is characterized by diversity among European countries in the study. Positive attitudes toward entrepreneurship are essential to considering future self-employment. Education is a key factor. Female entrepreneurship, it is predicted, will become more prominent in Europe.

KEY WORDS: *generations, female entrepreneurship, Europe, trends, attitudes, empirical, self-employment*

Introduction[3]

Europe shows substantial gender differences in entrepreneurship. On average, male business ownership is twice as likely as female ownership. Although women outnumber men in Europe, the proportion of self-employed women is only 34% and the share of female startup entrepreneurs is just around 30%. Only 10% of working European women is self-employed. Women are much more prone then men to prefer a career as an employee above a career as an employer or business owner (Eurobarometer, 2012). Quantitatively, female self-employment is still a relatively limited phenomenon in Europe, i.e. compared to the United States.[4] Given these small numbers, it is understandable that promoting female entrepreneurship has become a rising priority on the economic policy agenda of an increasing number of European countries. The European Commission explicitly addresses the issue of lagging behind self-employment and business startups by women. "Women represent the most underused source of entrepreneurial potential in Europe" as the Commission states in its Entrepreneurship 2020

[3] Many thanks to Didier Fouarge and Henk Vinken for their very helpful comments on the inter- and intragenerational analyses.

[4] See the findings of the multi-university DIANA project on women business owners: http://www.dianaproject.org/Data/publications/publicationsfordow/themythsdispelled/myths_dispelled.pdf

Action Plan.[5] Boosting female entrepreneurship also fits the basic aim of the European Union to decrease gender inequality. In order for Europe to become a world leader in innovativeness, competitiveness, and sustainable growth, the Action Plan encourages women to start their own business through a variety of targeted policies and specific guidelines for the EU Member States. Among them are providing access to funding, access to information, business training, access to business networks, and reconciling business and family concerns. The EU policy on promoting female entrepreneurship is part of its broader economic strategy that aims to strengthen entrepreneurship in Europe. Promoting female entrepreneurship according to European policy makers is good for the economy, it adds to economic growth and employment, utilizes the female potential, contributes to innovation, reinforces diversity, and reduces gender inequality.[6]

Various frameworks have been offered to explain the main structural differences in entrepreneurship between men and women, emphasizing a variety of underlying factors. At least four explanatory frameworks can be distinguished in the entrepreneurship literature. *Institutional explanations* underline the importance of structural hindrances that negatively affect female entrepreneurship such as bureaucratic obstacles, regulative restrictions or tax policies (Coleman & Robb, 2012; Eastwood, 2004; Hegewisch & Gornick, 2011).[7] This framework zooms in at gender barriers in access to venture capital, business funding, and other support structures (Brush et al., 2014; Buttner & Rosen, 1988; Coleman, 2000; Shaw et al., 2001). Starting female business entrepreneurs have poorer access to traditional networks for resource acquisition and entry barriers seem high for women (Brush et al., 2004; Katz & Williams, 1997; Piacentini, 2013).

[5] European Commission (2013), Entrepreneurship 2020 Action Plan. Reigniting the entrepreneurial spirit in Europe. Quote from European Commission, DG Enterprise and Industry. Report on the results of public consultation on the Entrepreneurship 2020 Action Plan, 2012: 2.

[6] The European Economic and Social Committee (EESC), a consultative body of the European Union, made a number of proposals for policy interventions to promote and develop female entrepreneurship in order to support sustainable growth in Europe. Among which: enforcing current legislation in areas of gender equality; fighting stereotyping in education and career paths; promoting academic studies which can lead to new business start-ups for women; ensuring fair access to funding and resources on equal terms; and improving social protection for the self-employed. EESC: Female entrepreneurs – specific policies to increase EU growth and employment. Brussels, 2012.

[7] An alternative explanation are demand-side gender differences in use of credit. See Piacentini (2013).

Cultural explanations point at divergent values and norms regarding male and female career goal setting, family care, work life balance, and risk attitudes. The family context has a stronger impact on female entrepreneurship than on male entrepreneurship (Aldrich & Cliff, 2003; Brush et al., 2009; Harun & Pruett, 2014; Jennings & McDougald, 2007). Career values and options still affect men and women differently (Patrick et al., 2016; Sanchez & Licciardello, 2012); women have more diverse and disrupted career patterns then men (Román, 2006). Women, moreover, tend to show a higher risk-aversion profile than men and typically invest in lower-risk activities (Eckel & Grossman, 2008; Parotta & Smith, 2013; Sexton & Bowman-Aupton). *Social explanations* underline possible gender discrimination factors and male/female resource differences due to educational choices and social capital. Female entrepreneurship is found to be subject to gender-characterization and stereotyping (Gupta et al., 2005; Lewis, 2006). Education also affects entrepreneurship and entrepreneurship segregation: women are underrepresented in science and technology and overrepresented in the humanities (OECD, 2004). *Psychological explanations*, finally, accentuate personal factors related to individual differences between women and men with respect to e.g. fair of failure and risk-taking, self-efficacy, locus of control, or networking (Dawson et al., 2011; Klyver & Grant, 2010; Mazzarol et al., 1999; Shinnar et al., 2012; Zhao et al., 2005). These four distinct (but related) frameworks explaining differences in entrepreneurship between men and women vary in terms of antecedents and motives, or more generally: in push and pull factors.

The general feeling among European policy makers as well as among the EU Member States is that female entrepreneurship needs stronger encouragement. The underlying assumption is that women are less interested than men in pursuing a career in self-employment, to start a business of their own, to become an entrepreneur. On an aggregated level this evidently is the case as the figures mentioned above illustrate. Men are more likely to consider self-employment than women (Eurobarometer, 2012).[8] But these static figures may also mask more dynamic changes in entrepreneurship intentions, attitudes, and behaviors among segments of women. Developing a more dynamic understanding of entrepreneurship

[8] In the field of technology and innovation data show that the percentage of patents awarded by the European Patent Office to women is lower than 10%. Moreover, less than 25% of businesses started with venture capital belong to female entrepreneurs (European Commission, 2008).

views among women would certainly improve our perspective on female self-employment and its future potential. US data, for instance, have shown that the rate of new business formation by women has surpassed the rate of new ventures by men (DIANA Project; Minniti & Naudé, 2010). Compared to Europe, the United States demonstrates much more pronounced female entrepreneurship growth trends. Our core interest in this paper in developing such a dynamic interpretation within the European context is the role of different *generations*. It can be hypothesized that generations differ in self-employment preferences, in becoming an entrepreneur, in starting one's own business. Younger generations, so one may argue, have more positive intentions to becoming an entrepreneur, hold more favorable attitudes towards self-employment, and are more likely to start their own business compared to older generations (Eurobarometer, 2012). The female members of these younger generations will resemble their male counterparts with respect to their needs for autonomy, self-direction, and flexibility, as well as in terms of their assessments regarding self-efficacy and risk proneness. Self-employment becomes a much more "natural" and culturally accepted career choice among young women. If this hypothesis is empirically substantiated it would imply that generational renewal affects entrepreneurship which in turn would gradually but consistently increase entrepreneurship rates among young females. If this pattern of intergenerational gender differences in entrepreneurship attitudes would occur Europe-wide, it would change female self-employment considerably in the near future. A trend towards more positive attitudes to entrepreneurship and self-employment among younger cohorts of females may mirror broader intergenerational changes. And if these attitudes would converge between younger females and younger males it would also reflect major intragenerational changes.

Analyzing how generations differ in their views on entrepreneurship in general and their intentions to start a business in particular will improve our comprehension of the social dynamics underlying changing attitudes towards female self-employment. It is remarkable to observe that the standard entrepreneurship literature and research hardly pay attention to the role of generations in changes in social outlooks on entrepreneurship, self-employment, and startup activities. The 64-pages long index of the renowned *Oxford Handbook of Entrepreneurship* (Casson et al., 2006) does not include the term "generation", nor does the 23-pages long index of the reputed *Handbook of Entrepreneurship Research* (Acs & Audretsch, 2003). Mainstream entrepreneurship literature and research, so the conclusion

holds, lack the sensitivity of thinking in terms of generations or even of age cohorts. The impact of generational renewal on the rate of female entrepreneurship is vastly understudied.

Theoretical Perspectives

Generations and social change

Sociology has a solid theoretical and empirical track record of understanding social and cultural changes as caused by generational renewal. The most prominent theorist on generations is Hungarian-born sociologist Karl Mannheim (1893-1947). Mannheim can be viewed as the founding father of the sociology of generations who inspired a new generation paradigm and a new research tradition. He defines a generation as a birth cohort which was exposed to the same societal developments and changes ("*Schicksale*") during its common formative period, within the same "socio-cultural space", and whose members share a joint generational awareness and social destiny. The experiences they gained during their formative years or youth period (e.g. wars, national crises, periods of economic recession or growth) are assumed to have a lasting effect on the further life course of generation members. A new generation, according to Mannheim, may be a carrier of new values orientations, new lifestyles, and new behaviors, proponents of new social visions, and instigators of social change. In its most explicit form a new generation may be an avant-garde or trendsetting cohort; a vanguard, in short. Generations share a common consciousness of belonging to a generation which sets them apart from other generations. Particularly in times of intensive social dynamics and political or economic turbulence, new generations are likely to emerge. Examples are the World War II generation which shares the existential impact of the war horrors during its formative period, the baby boomers who experienced the making of the welfare state, the protest generation which fought for civil rights and democracy, the lost generation which suffered from massive youth unemployment, or Generation Y which combines pragmatism, self-organization, and networking, and is notoriously tech-savvy.

Generation replacement is seen by sociologists and other social scientists as the motor behind cultural renewal. New generations grow up in different eras with distinct political, economic or social challenges which impact their formative period in a marked sense and evoke new generational responses. Political scientist Ron Inglehart has forwarded the well-known

thesis that modern Western society is witnessing a structural shift from materialist to postmaterialist values due to a gradual cohort replacement (Inglehart, 1990, 1997). Inglehart states that older generations were socialized in periods characterized by economic insecurity and warfare, and therefore hold materialist values such as physical sustenance and safety. Younger generations, however, were raised in relatively prosperous and peaceful times and therefore give more priority to postmaterialist values such as quality of life, personal freedom, and self-actualization. Though cohort replacement is a slow process but associated with a substantial shift towards postmaterialist values, this shift according to Inglehart actually signifies a silent revolution. Inglehart's contribution to generation theory is that he combines a scarcity hypothesis (one places the greatest value on things that are in relatively short supply) and a socialization hypothesis (one's basic values reflect the conditions that prevailed during one's formative pre-adult years). Inglehart's theory has inspired a wealth of studies that link cultural change in Western society to generational replacement (Braungart, 1984; Diepstraten et al., 1999; Ester et al., 1993, 2006; Van den Broek, 1996). Most generation theories are based on a similar set of assumptions: old generations with distinct value preferences are replaced by new generations who forward their own preferences.

New generations, entrepreneurship attitudes, and self-employment

A generational perspective may help to develop a better and deeper insight in the social mathematics and dynamics of female entrepreneurship. It starts with the assessment that compared to older generations, younger female generations in Europe grew up in quite different cultural and economic times. Their coming of age periods differ substantially and in line with generation theory this impacts their basic cultural and economic beliefs and attitudes, including their beliefs and attitudes towards entrepreneurship and self-employment. Young Europeans were (and are) socialized under unique cultural and economic circumstances that marked their outlooks, their worldview, and their lifestyle. These distinctive circumstances shaped the way they think about work, career, and self-employment (Diepstraten et al., 2006). Europe as well as other Western societies witnessed a number of cultural changes that directly and indirectly transformed the way younger generations imagine their life course and frame their career choices. Due to broad but far-reaching processes of individualization, emancipation, secularization, and de-traditionalization, prevailing standard biographies

changed into free-choice biographies (Du Bois-Reymond, 1990; Ester et al., 1993; 2006). Young generations were the first to embrace personal values that stress autonomy, self-determination, and flexibility (Van Bommel et al., 1995; Howe & Strauss, 2000). Older generations largely grew up in times when standard biographies dominated based on socially prescribed norms and trajectories. Entrepreneurship was a modest part of these trajectories, certainly among women. The typical life course favored lifelong employment preferably with one or two major employers. Starting a business was still exceptional and not an intrinsic part of the standard set of career choices of older generations. For younger generations career options are more open and diversified. Becoming an entrepreneur, starting a business, being self-employed is much closer to their values and career preferences which emphasize self-direction, independence, and personal challenges (Eurobarometer, 2012; Ferreira & Kleinert, 2015). This is true across sexes. Traditional gender roles become less self-evident among male and female members of younger generations, also as a consequence of their higher education (Inglehart & Norris, 2003). Consequently, the views of young European females on entrepreneurship and their self-employment intentions are assumed to converge with the views of their male generation members.

The world of entrepreneurship itself also changes. The emphasis on innovation is central and distinguishes successful from non-successful companies. "Turning business into innovation" and "turning innovation into business" become leading mantras (Burns, 2014; Schaufeld, 2015). Disruptive innovation, creativity and think out-of-the box, advanced technology, social media, international mindset, and passionate entrepreneurship are the new buzz words (Boyd, 2014; Boyd & Goldenberg, 2013; Drucker, 1993; Ester & Maas, 2016; Moore, 2014; World Economic Forum, 2014). They are the key drivers of entrepreneurial success and economic growth. These drivers push entrepreneurship policies. European countries prioritize the founding and funding of innovation hubs and new hightech entrepreneurship, and European capitals compete in becoming the leading European hotspot for startups.[9] This brings about a European startup community and new business culture which nicely fit the personal values and career choices of younger generations (Špigel, 2015). They are the first cohorts that adopted and experimented with digitalization, social media, and high-tech innovations (Palfrey & Gasser, 2008). To some observers the

[9] See for a global ranking of startup cities: Compass (2015). *The Global Startup Ecosystem*.

Millennial generation is the entrepreneur generation par excellence, as they prioritize freedom over job security.[10]

Entrepreneurship, furthermore, becomes more prominent on the curricula of European secondary and university education. As a result of these developments there is a continuous search for young entrepreneurial talent in the rising European startup and knowledge economy (Ester & Maas, 2016). It may be assumed that the more the startup community expands in Europe, the more visible new businesses founded by young people become which in turn adds to its "normality". It will create new male and female business role models which will reinforce self-employment and inspire new business ventures among younger generations.

It has to be italicized that entrepreneurship as a professional career trajectory for younger generations is not merely a matter of attractive pull factors based on matching personal values, career preferences, and de-standardized individual biographies but may also be the result of less alluring economic push factors (Arum & Müller, 2004). Self-employment is not only choice-driven but may also be necessity-driven (Dawson et al., 2009; Henley, 2015; Margolis, 2014). Due to the economic crisis that hit European economies hard, younger European generations face high unemployment (Scarpetta et al., 2010). The gloomy economic situation forced many young Europeans to reconsider their career opportunities, and self-employment became an involuntary but widely chosen option (OECD/European Commission, 2012; OECD, 2015). In numerous cases, moreover, companies outsourced their employees and hired them back as self-employed. The Netherlands, for instance, witnessed a remarkable rise of the number of self-employed as a result of both pull and push factors (Corvers et al., 2011; CPB, 2014).

As a consequence of the combined effects of these pull and push factors it may safely be predicted that irrespective of gender differences, self-employment among younger generations is a phenomenon that is here to stay. It generates benefits at both the individual and macro level. "Entrepreneurship, i.e. starting one's own business, can offer an alternative option for young people to use their skills and for the economy and society to benefit from new talent." (OECD, 2015: 128). Self-employment by starting one's own company has become a common option among the career choices that young European generations face.

[10] See: http://vator.tv/news/2013-05-14-why-millennials-are-the-entrepreneur-generation.

Hypotheses

The inter- and intragenerational analysis of the relationship between entrepreneurship and gender yields the following two hypotheses that will be tested empirically in this paper:

H1: European countries show an intergenerational trend towards more entrepreneurship among females

H2: European countries demonstrate a converging intragenerational trend towards entrepreneurship among females and males

Methods: Ddata and Measurement

All analyses are conducted using secondary research applying quantitative data analyses.

The data for this research come from the Eurobarometer surveys which provide an extended view in time, something essential for investigating generational trends. The trend data from the Eurobarometer are from the Standard Eurobarometer. Surveying approximately 1000 respondents per country, the method of data collection is a face-to face interview in the respondents' homes.[11] The Eurobarometer surveys individuals age 15 years and older using a random sampling method, and since 1989 using a multi-stage method of random sampling.[12] The Standard Eurobarometer, originating in 1973, is cross-sectional, with waves in the spring and autumn of each year. This research uses the data collected in the autumn waves from 1980, 1985, 1990, 1995, 2000, 2005, 2010, and 2015 enabling the research to cover a thirty-five year period.

All countries surveyed were used in the analyses with the exception of Norway as this country was surveyed twice during our period of observation (1990 and 2000) and did not remain in the study. For an overview of countries surveyed per wave, please see the Gesis website.[13]

For the OLS regression model, the Flash Eurobarometer 354 with a special edition on Entrepreneurship from 2012 is used. The data from the Flash Eurobarometer are collected applying the same methods as the ones

[11] With the exception of Sweden, where telephone interviews are conducted.

[12] Before 1989, the sampling designs were either multi-stage national probability samples or national stratified quota samples.

[13] http://www.gesis.org/eurobarometer-data-service/home/

described for the Standard Eurobarometer with the exception of the period of collection (June-August, 2012).

Construction of indicators on the Eurobarometer

Entrepreneur is created by the variable 'occupation of respondent' using categories of self-reported business ownership or self-employment.

Generation is constructed as follows: survey year-exact age to create 'year of birth', year of birth used to create 'Generation' with four values:

- Silent Generation: Born 1925 to 1945
- Baby Boomers: Born 1946 to 1964
- Generation X: Born 1965 to 1976
- Millennials or Gen Y: Born 1977 to 2000

Method of analyses

All descriptive analyses of the Eurobarometer are conducted on the individual countries in the dataset using the population size weights.

The multivariate analysis performed dataset from the Flashbarometer is conducted with the weight application for the European countries supplied by the Eurobarometer. [14, 15]

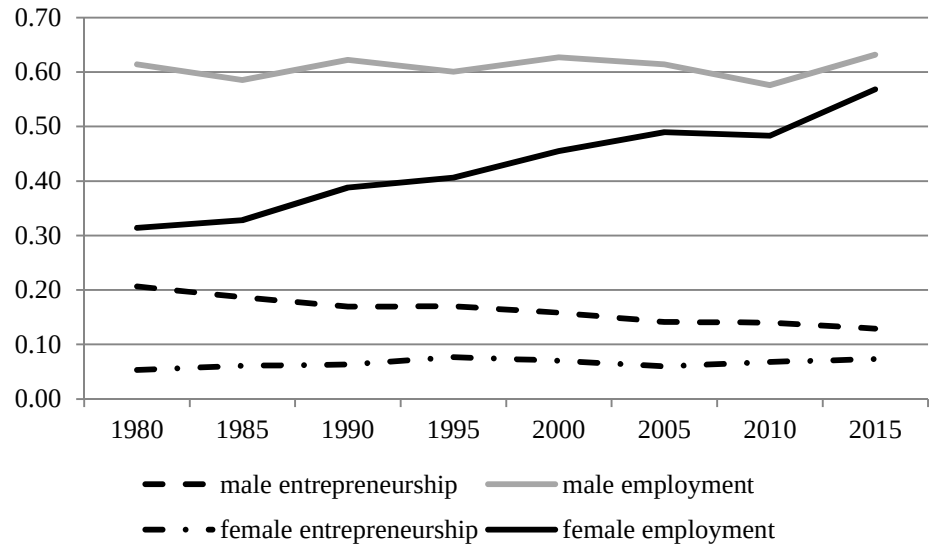
Analyses

The first part of the analyses comprises a descriptive approach to the Eurobarometer data analyzing trends across Europe from 1980 through 2015. Here we look at key variables in the data before testing our hypotheses in the multivariate analyses. We include: employment and entrepreneurship by gender (figure 4.1 and figure 4.2), female entrepreneurship by country (figure 4.3), and entrepreneurship by generation (figure 4.4).

[14] In the Flashbarometer, countries outside of Europe were surveyed as well, but these were not included in our analysis and the weight for the European countries was applied.

[15] On the GESIS website there is a section with the title "To weight or not to weight". The researchers followed these suggestions using the application of the population size weights for individual country analyses, and average country analyses.

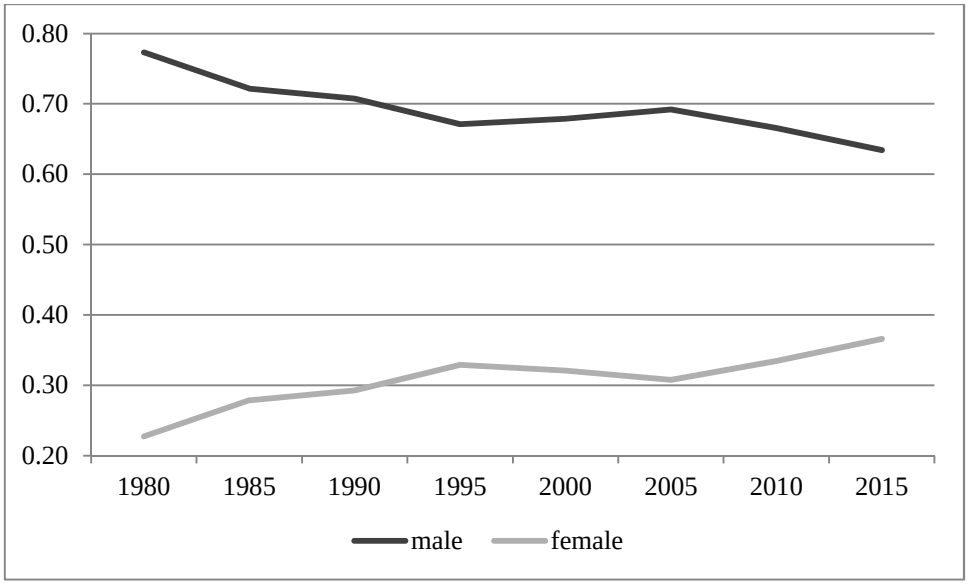
Figure 4.1: Entrepreneurship and employment as percentage of occupational status by gender 1980-2015



Source: Eurobarometer

Figure 4.1 represents the percentages of entrepreneurship and employment by gender from 1980 to 2015. Entrepreneurship includes farmers, fishermen, business owners, and any working professionals, who are not in paid employment, and have not responded as being retired, as a percentage of the total adult population. During the period of observation there is a trend toward convergence in entrepreneurial activity between the sexes which supports our hypothesis. The rate of self-employment for men has decreased over the period of observation from 21% to approximately 13%, whereas an increase for female entrepreneurship from 5% to 7.4% is seen during the period of observation. The decrease in entrepreneurship for men can be attributed in part to the reduction in privately owned farms and fishing businesses, most of which occurred between 1975 and 1995 (Goffee & Scase, 1987). Where the male employment rate has been stable between 58 and 63 percent over the period of observation, women have exhibited an impressive growth from 31 to 57 percent, almost doubling their percentage of participation in paid labor. The effect of the financial crisis is clearly discernible in the 'dip' in employment in 2010.

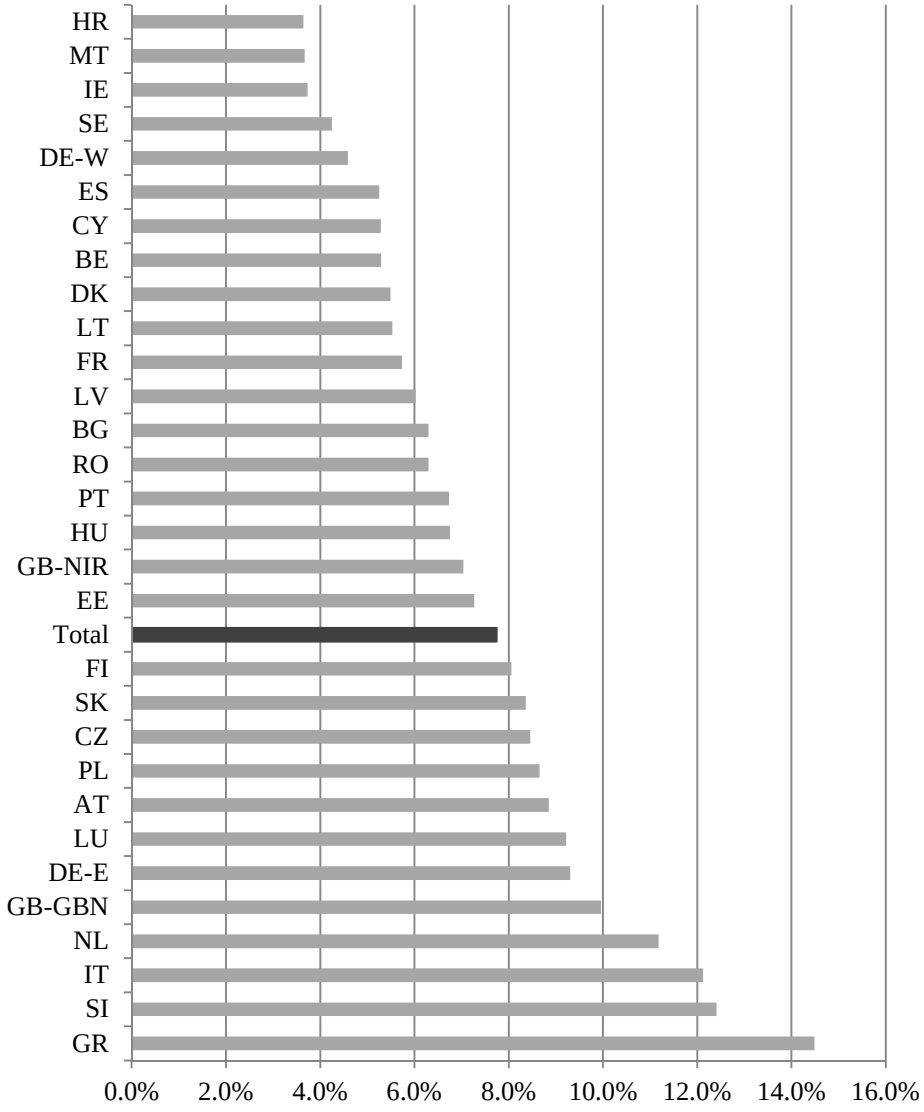
Figure 4.2: Comparison of male to female entrepreneurship as total percentage of entrepreneurship 1980-2015



Source: Eurobarometer

Figure 4.2 brings the male to female entrepreneurship comparison more clearly in perspective. This time, the relation of male to female entrepreneurs is depicted as a percentage of total entrepreneurship. Most important to note, from figure 4.2, is the narrowing of the ratio in total entrepreneurship between males and females over the period from approximately 4:1 to 3:2. In 2015, women's share of total entrepreneurship has risen to more than 37% of the total share of entrepreneurship in Europe, almost 4% more than reported in 2012. Men's entrepreneurship has dropped from 77% to 63%. This growth in the share of total entrepreneurship by women is most remarkable when one considers their substantial growth in employment during the same time period. The convergence in male and female entrepreneurship patterns is clear and provides support for our hypothesis H2 albeit without knowing if this convergence is predominantly caused by the younger generations.

Figure 4.3: Female entrepreneurship 2015 by country (percentages)



Source: Eurobarometer

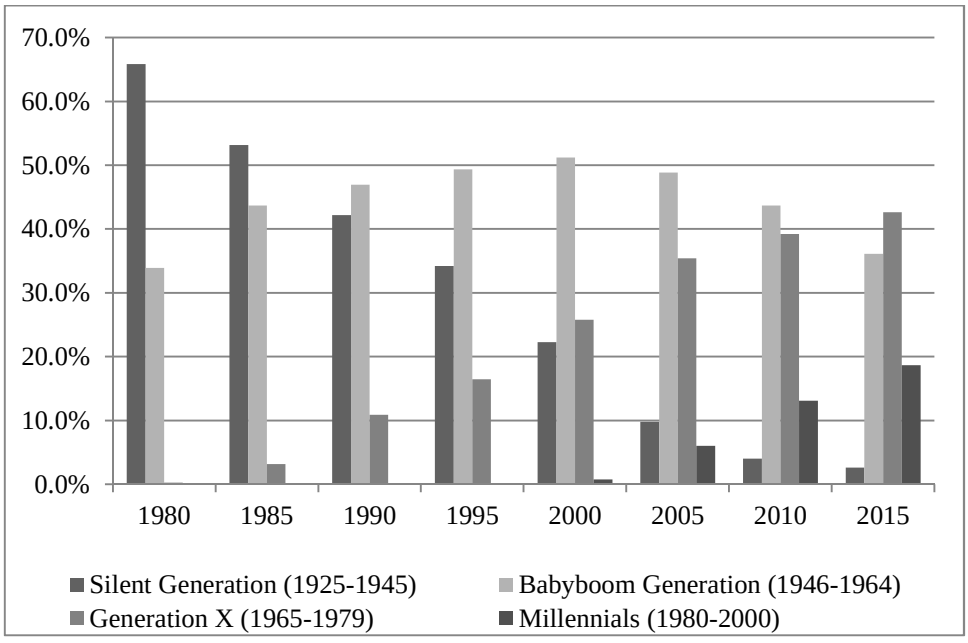
Figure 4.3 depicts female entrepreneurship in 2015 by country. The EU average female entrepreneurship rate in 2015 is 7.7%. Finland, Slovakia, Czech Republic, Poland, Austria, Luxemburg, East Germany, Great Britain, The Netherlands, Italy, Slovenia and Greece are all above the EU average.

Hungary has the lowest percentage with only 3.6% female entrepreneurship. There is a marked difference between East and West Germany in the percentage of female entrepreneurship, with West counting just shy of 4.6% which is quite a bit lower than the 9.3% in the East of Germany.

In terms of the overall percentages across Europe, there is no clear picture of how these differences in female entrepreneurship are distributed. It does not appear to be an East-West pattern, which looked to be the case for the two Germanies. One might assume it has something to do with a North-South pattern by looking at the difference between the high percentage in Finland (8.1%) as compared to Malta (3.7%), but this pattern is not really replicated. Regarding any trends in terms of country size, France as a large country with 5.7% female entrepreneurship is easily surpassed by the much smaller Slovenia at 12.4%. But this picture is also not a constant throughout the country data.

The next step is to analyze the trends in a generational perspective. Figure 4.4 displays the trends in female entrepreneurship across Europe from 1980 to 2015 by generation.

Figure 4.4: Entrepreneurship by generation as percentage of total female entrepreneurship (1980-2015)



Source: Eurobarometer

In figure 4.4, the generations are clearly presented with the older generations diminishing and the younger generations increasing over our period of observation due to age effects[16]. In 1980, the Silent generation represents two-thirds of the female entrepreneurial market compared with only one-third representation by the Babyboom generation. The oldest members of Generation X are gingerly making their first appearance in this same year. The generations are a sociological classification and for this reason not every generation has the same number of years (Silent=21 years, Babyboom=19 years, Generation X=15 years, Millennials=21 years). The Babyboom generation surpassed the Silent generation in percentage of female entrepreneurs in 1990, continuing to dominate the entrepreneurial field until 2015, when the share of Generation X grew to almost 43 percent female entrepreneurs. The strong branding of such large previous generations as the Silent and the Babyboomers are not likely to be repeated simply due to their numbers. The Silent generation was quite impressive in terms of female entrepreneurship. The women from the Babyboom generation never reached the level of entrepreneurship attained by their predecessors. No other generation is so strongly represented in public sector jobs as this sector grew during the 1960s and the 1970s (EIPA, 2012). These career choices reflect the fact that Babyboomers were the generation par excellence that built the postwar welfare state.

What is clearly depicted is the steady growth in the percentage of female entrepreneurs from Generation X throughout our period of observation. The Millennials appear to be unaffected by the financial crisis; their share of the total percentage of female entrepreneurship grows steadily from their entrance in 2000 to 2015. However, what we are more likely observing are the push factors of entrepreneurship due to a less than appealing perspective on the labor market, particularly for the youngest generation due to high unemployment rates and lower numbers of job vacancies across Europe. These descriptive analyses provide some support for our hypotheses but we turn now to the multivariate analyses to test them more effectively.

[16] We have not done an APC (Age-Period-Cohort) analysis as it is not our intention to isolate cohort effects and realize that due to our lengthy period of observation, age effects are clearly present in our data.

Multivariate Analyses

This section addresses the two basic hypotheses: a) European countries show an intergenerational trend towards more entrepreneurship among females, and b) European countries demonstrate a converging intragenerational trend towards entrepreneurship among females and males. Multivariate analysis will be used to estimate the model.

The analysis uses an OLS Regression with the feasibility of becoming an entrepreneur as dependent variable. The regression is used to analyze the feasibility of becoming an entrepreneur as explained by generation, drivers of entrepreneurship, and country:

$$y = \alpha + \beta X + \varepsilon$$

The model intends to investigate entrepreneurial attitudes and what we may expect in terms of entrepreneurship growth in the future. In model 1 using an OLS regression analysis, the dependent variable is the feasibility of being an entrepreneur. The variable is based on the question (q7), "regardless of whether you would like to become self-employed, how feasible would it be for you to become self-employed within the next five years?" using a Likert scale coding 1-5 from not very feasible (1) to very feasible (5). Drivers for becoming an entrepreneur are applied using the Flash Eurobarometer 2012 for the youngest generations, Generation X and the Millennial (males and females) to project what we can expect in the future. We base our analysis, applying the drivers for entrepreneurship to our specific group(s) of interest. There are five positively loaded factors, or positive drivers:

- Educational course – Have you taken part in any activity or course about entrepreneurship in school or university? (q10)
- Entrepreneurship desirable – (q9) Personally, how desirable is it for you to become self-employed within the next five years?
- Entrepreneurs create jobs – Entrepreneurs are job creators. (q12_3)
- Education stimulates interest in entrepreneurship – My school/education is making me interested in becoming an entrepreneur. (q11_3)
- Education provides entrepreneurial skills – My school/education has given me skills to help me run my business (q11_4)

And three negatively loaded factors which could inhibit becoming an entrepreneur:

- Lack of financial support – It is difficult to start one's own business due to a lack of available financial support. (q21_1)
- Complex administrative procedures – It is difficult to start one's own business due to the complex administrative procedures. (q21_2)
- Entrepreneurs are selfish – Entrepreneurs only think about their own pockets. (q12_2)

All variables on drivers were tested for multicollinearity with the dependent variable. The diagnostics showed no problematic variables.

Table 4.1: OLS Regression of perceived feasibility of entrepreneurship within the next 5 years

	Males	**Females**
Generation ref: Silent		
Babyboom	0.361***	0.317***
Generation X	0.711***	0.637***
Millennial	0.625***	0.608***
Desirable to start business in next 5 years	0.452***	0.391***
Took entrepreneurship course	0.259***	0.275***
Entrepreneurs create jobs	0.026**	0.029**
Education stimulated interest in entrepreneurship	0.005	0.016
Education provided skills to start a business	0.053***	0.064
Lack of financial support	-0.029**	-0.086***
Complex administrative procedures	-0.031**	-0.043***
Entrepreneurs are selfish	-0.025**	-0.043***
Country ref: Great Britain		
France	0.030	-0.009
Belgium	0.021	-0.076
Netherlands	0.562***	0.285***
Germany	0.339***	0.189***
Italy	-0.036	-0.080
Luxembourg	0.104	0.110
Denmark	0.317**	0.128
Ireland	-0.026	0.095
Greece	-0.217**	-0.154
Spain	-0.215***	-0.286***
Portugal	-0.050	-0.162**

	Males	**Females**
Finland	0.157	0.016
Sweden	0.840***	0.617***
Austria	0.327**	0.226**
Cyprus	-0.169	-0.187
Czech Republic	-0.196**	-0.246**
Estonia	-0.045	-0.114
Hungary	-0.200**	-0.185**
Latvia	0.299	0.434**
Lithuania	0.131	-0.035
Malta	-0.237	-0.251
Poland	0.563***	0.359***
Slovakia	0.357**	0.244**
Slovenia	0.101	-0.029
Bulgaria	-0.044	-0.020
Romania	-0.244***	-0.289***
Constant	0.746***	1.101***
Observations	11422	13126
R-squared	0.31	0.30

*Source: Flashbarometer 354, ** significant at 5%, ***significant at 1%.*

The multivariate model looks at the attitudes towards entrepreneurship in the near future.

The model has been analyzed separately for men and women to simplify interpretation. The analysis for the men explains 31 percent of the variance in the population with a total of 11,422 observations. The women's analysis with 13,126 observations explains 30 percent of the variance. Compared to the Silent generation, belonging to the Babyboomers, Generation X or the Millennial generation has a positive effect on how men and women assess the feasibility of becoming an entrepreneur within the next five years. In this analysis, Generation X already has a stronger positive effect than the Babyboom generation and the Millenials, also have a strong positive effect, although slightly less. Seeing entrepreneurship as a desirable option also has a positive effect on whether men and women see this as a feasible option in the next five years. Clearly, having a favorable attitude towards entrepreneurship positively affects how feasible it would be to become an entrepreneur. Having taken a course on entrepreneurship also has positive influence on how a person views the feasibility of self-employment in the near future. This effect is stronger than the other positive drivers for entrepreneurship. And the effect of being motivated by one's

educational curriculum is not even significant in the model. That their education provided them with the skills to start a business, has a small positive effect in the men's analysis, but this is not so for women. All three negative drivers are significant at 5% in the men's analysis and at 1% for the women. The effects of these drivers on the feasibility of becoming an entrepreneur are very similar: a lack of financial support, complex administrative procedures, and having the opinion that entrepreneurs are selfish and just out to fill their own pockets all have negative effects on viewing entrepreneurship as a feasible course of action within the next five years. Countries showing significant positive effects on the feasibility of entrepreneurship in the next five years (compared to UK) are the Netherlands, Germany, Denmark (for men but not women), Sweden, Austria, Latvia (for women but not men), Poland, and Slovakia. In terms of attitudes towards the feasibility of becoming an entrepreneur within the next five years, we can expect a positive trend for entrepreneurial growth in these countries.

Regarding attitudes towards entrepreneurship, we have found evidence for both of the hypotheses. Younger generations have a more positive attitude towards entrepreneurship than their older cohorts and men and women are converging in these attitudes as well. This is not so for all countries in Europe. The negative effects on the perceived feasibility of entrepreneurship in the near future in countries such as Greece, Spain, Portugal, Cyprus, Malta, Bulgaria, and Romania show the clear division of North-South that was not apparent in our other analyses. And this negative country effect could undermine the younger generations from starting businesses which are so vital for the economic recovery in these countries.

Conclusions

In explaining gender differences in entrepreneurship, researchers typically point at institutional, cultural, social, and psychological factors. Trend changes in gender differences are primarily understood in terms of these sets of factors. In this paper we aim to augment these perspectives by looking at the role of generation replacement in explaining changes in gender differences in self-employment. More specifically, we tested two basic hypotheses: a) European countries show an intergenerational trend towards more entrepreneurship and self-employment among females, and b) European countries demonstrate a converging intragenerational trend

towards entrepreneurship and self-employment among females and males. The paper distinguishes between four types of sociological generations: Silent Generation, Babyboomers, Generation X, and Millennials.

Using longitudinal data (1980-2015) from the annual Eurobarometer surveys we find evidence to support both hypotheses. Younger female generations are more self-employed than older female generations (with the exception of the Millennials), and among the younger generations entrepreneurship rates tend to converge among male and females. Possibly more important are the positive attitudes we find in each younger generation towards the feasibility of entrepreneurship in the near future.

Looking back and comparing the overall labor market behavior of men and women from 1980 to 2015, the decrease in male entrepreneurship during the period of observation is not compensated by an increase in the total male employment rate. Women exhibit a major increase in employment as well as an increase in their self-employment. There is a narrowing of the ratio in total entrepreneurship between males and females from approximately 4:1 to 3:2, with women accounting for almost 38% of the total entrepreneurship in Europe. We do observe between-country differences. Taking stock of the current situation, the EU average percentage of female entrepreneurship for the potential labor force in 2015 is 7.7%. The Netherlands, Italy, Slovenia, and Greece are trendsetters each with more than 11% female entrepreneurs in the total potential labor force. Our search for discernible country patterns in the current state of female entrepreneurship across Europe was to no avail. There appears to be no relationship by geography: North-South, East-West, or country size. Nor is there evidence of a relation between old and new member states. However, regarding the attitudes and the feasibility of becoming an entrepreneur in the next five years, there is a clear North-South divide. This requires additional in-depth analysis.

Our results lead us to conclude that the European entrepreneurship agenda should take inter- and intragenerational gender factors into account. It provides an appealing perspective on understanding and bridging the gap between male and female self-employment and on boosting female entrepreneurship. The role of education is crucial in this respect. Our findings indicate that a positive attitude towards entrepreneurship is essential in overcoming self-employment barriers and in encouraging growth in female entrepreneurship. Countries in which women have positive attitudes towards starting businesses in the near future are the Netherlands,

Germany, Sweden, Austria, Latvia, Poland, and Slovakia. In general, women are neither experiencing encouragement toward becoming self-employed nor do they feel that they gain the skills necessary to start businesses during their education. Clearly, more needs to be done in our educational field to stimulate female entrepreneurship. Education must be a key factor in policies that aim to tap hidden female entrepreneurial talent. In this way the potential of entrepreneurship among the youngest generations of female Europeans can be more fully realized.

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