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INSTITUTIONAL LOGICS: GENDER AND BUSINESS CREATION ACROSS 13 GEM COUNTRIES

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ABSTRACT

Building on theories of practice, cultural difference and institutional welfare regimes, we explore how gendered entrepreneurship rates are affected by both *soft* (values, beliefs, and expectations) and *hard* (institutionalized norms and practices) measures of culture. Using 2001 GEM data, we examine how institutional arrangements related to women's employment (role of occupational segregation, gender wage inequality, female business leadership and public childcare support) interact with individual-level perceptions in ways that increase women's start-up across thirteen countries. Results suggest that gender wage inequality has a direct effect on the decision to start a business, while industry structure and the presence of childcare may influence the decision to start a business indirectly through perceptions and gender.

INTRODUCTION

Around the world, an estimated 8.5% of adults are engaged in entrepreneurial activity (Harding & Bosma, 2007). Evidence from the Global Entrepreneurship Monitor (GEM) indicates that entrepreneurship rates vary extensively across gender and countries, although women are about half as likely as men to be involved in business start-ups. Male-female participation ratios vary significantly from 3.79 in Croatia and 3.11 in Norway and the Netherlands to insignificant differences in Brazil, Italy, Venezuela, and Thailand (Reynolds, Bygrave, & Autio, 2004; Harding & Bosma, 2007). Explanations for gender variations in cross-national entrepreneurial activity tend to focus on structural factors, such as unemployment, national wealth, economic growth, and economic freedom (Minniti & Nardone, 2006; Verheul, van Stel, & Thurik, 2006). Despite somewhat systematic variations of gender gaps in entrepreneurship with national wealth (i.e., low/middle/high-income countries), considerable gender variations remain *among countries with similar levels of national wealth*. Furthermore, economic factors may not fully explain observed gender patterns. For example, evidence suggests that women are more sensitive to non-economic determinants of entrepreneurship than are men (Minniti, Arenius, & Langowitz, 2005). Our study pursues this line of inquiry, testing the importance of soft and hard cultural measures on start-up decisions across gender and countries.

Softer, more nebulous forms of culture include values, beliefs, ideals, and expectations. The harder, more structuring forms of culture include institutionalized norms and practices, such as labor force composition, industrial technologies, and government policies. Research identifies correlations between national cultural values and entrepreneurial activity (Hayton, George, & Zahra, 2002; Wennekers et al, 2002; Singh, DeNoble, & Erlich, 2003). Other research investigates individual-level drivers of entrepreneurial activity, such as psychological traits and social networks (Lee & Peterson, 2000; Mueller

& Thomas, 2001; Dodd & Patra, 2002). Few studies, however, pursue cross-national differences in gendered start-up rates, never mind the relationship between material versus non-material determinants of business start-up at both micro and macro levels of analysis. One GEM study identifies the presence of country-level differences in gender patterns of nascent entrepreneurship, controlling for individual-level factors, but does not test specific country-level determinants (Arenius & Minniti, 2005). Another multi-level GEM study tests three socio-economic factors: national wealth, economic growth rate, and economic freedom, controlling for individual-level factors, reporting little explanation of the start-up differences across gender (Minniti & Nardone, 2007). Broader enquiries on the topic of gender and work suggest the importance of institutional factors for explaining gender differences in work patterns (Inglehart & Norris, 2003; Esping-Andersen, 1999; van der Lippe & van Dijk, 2002).

To guide our investigation of the effects of different measures of culture on gender differences in business start-up, we begin by articulating a practice theory approach to entrepreneurship, in which the start-up decision is based on an individual's strategic response to local cultural, social, and material context, given his/her social position and related resources or forms of capital. We extend this to a multi-level practice theory of entrepreneurship guided by theories of societal evolution (Lenski, 2005) and the modern welfare state (Esping-Andersen, 1990, 1999). We put forward a set of four hypotheses concerning the ways in which culture—from a specific belief about the gender division of labor to more concrete norms and institutional factors—influences gendered patterns of start-up. We use Global Entrepreneurship Monitor (GEM) data from 2001 for 13 countries and 2-level random intercept logistic regression models to test for the importance of specific cultural and institutional factors for business start-up, controlling for individual measures of context, perceptions of self and environment, and national wealth, income inequality, and gender ideology. We report results, including interactions among macro- and micro-level constructs and conclude with implications for theory, practice, and further research.

THEORETICAL MODEL

Entrepreneurship is a complex phenomenon. Recent reviews call for multi-level models and theories that better address the inherent complexity of business creation (e.g., de Bruin et al., 2007) and allow for the development and testing of hypotheses concerning linkages across levels of analysis. In terms of theory, these sorts of models help answer questions about the grey area between points of classic theoretical opposition, such as the distinction between agency and structure, culture and structure, and freewill and determinism. One theoretical framework that helps us explore the complexity of the decision to start a business is practice theory (Elam, 2006).

Practice Theory

In this paper, we explicitly adopt a *practice theory* view of entrepreneurship. (See Ortner (1993) for a general overview of practice theory.) Accordingly, we define entrepreneurship as a *practice*—that is, something that people *do*--that is, the place where structure meets agency. Economic agents are framed as knowledgeable, reflexive, and strategic within a given social structure of opportunity and constraint. Each *social position* in this *opportunity structure* is determined by four forms of capital: economic, social, cultural, and symbolic. Most action (or practice) is largely unconscious—that is, guided to a large extent by structures of the mind. Even strategic action is driven by underlying cognitive schemas, learned and innate, and tied closely to one's position within the overall social structure. The decision to start a business can best be understood as a practice, or strategy of action, that allows a given actor the means to maximize his/her legitimacy, which, in turn, is convertible into other forms of capital.

Practice theory suggests that women have different capital holdings—or hold different social positions—from men and use their capital in different ways. Overall capital structures, or opportunity

structures, also may vary across countries, depending on the level of national development—i.e., the type of productive technologies relied upon and the resulting national surplus of capital (Nolan & Lenski, 1999; Lenski, 2005). Current evidence supports this expectation. A large body of research suggests that the relationship between entrepreneurship and per capita income is u-shaped (Caree et al., 2002; Wennekers et al., 2005; Acs et al., 2005). That is, while the level of entrepreneurship declined over time as economies become more developed, at some point the level of entrepreneurship turns up. The reasons for this are simple. Entrepreneurship generally declines with secular economic growth. However, the increased importance of services and of technological change has triggered an expansion of entrepreneurial activities. Thus, the “normal” experience in the last quarter century should be U-shaped. This finding is consistent across men and women: in low income countries, women and men have the highest rates of entrepreneurial activity, averaging 13 and 18% respectively, although about 40% of this is necessity-based (Minniti et al., 2005). In comparison, the female and male entrepreneurial activity rates are 4 and 7% in middle-income countries and 7 and 9% in high-income countries, with less than 20% necessity-based (Minniti et al., 2005).

There are limitations to comparing across levels of development, however. More cross-national variation is generally apparent among less-developed societies. These variations are due mostly to large differences in productive technologies—i.e., productive activities or practices (Lenski, 2005; Nolan & Lenski, 1999). As societies increasingly control their physical environment and basic needs are met (as functional imperatives are either controlled or satisfied), cultural ideas and arrangements become the defining difference between groups and societies. The practice theory view suggests that culture is the discerning factor across industrial societies (Bourdieu, 1998; Giddens, 1984; Lenski, 2005).

Culture

Culture is a diffuse and ambiguous concept. According to Smith (2001), the term culture emerged from the cultivation or culture of land and crops. The general sense of the word at this time was “improvement.” The term was later applied to individuals in a similar sense and equated generally with idea of civilization. Today the term culture is used in three general senses: (1) to denote the intellectual, spiritual, and aesthetic development of person or social group; (2) to refer to intellectual and artistic activities and their product, e.g., film, art, and theatre; and (3) to refer to a way of life, including the activities, beliefs, and customs of a social group (Smith, 2001; Williams, 1976).

This definition is very compatible with current approaches to understanding the importance of culture as a causal force. The first component relates directly to the neoclassical definitions of human capital in which the importance of education and experience help to explain particular forms of behavior. However, neoclassical economists have failed to express the importance of human capital as it relates to other forms of capital and to the workings of the human mind. Psychologists developed a great body of evidence that supports the importance of cognitive structures (e.g., beliefs and values) for entrepreneurship (Mitchell et al., 2007), but have yet to link these structures to other aspects of context. Entrepreneurship scholars relentlessly pursue research on national culture and patterns of entrepreneurial behavior. We know intuitively that culture is important and we have some macro-level evidence, but we lack an empirical explanation of how culture actually works.

Among practice theorists, Bourdieu offers a very nuanced set of definitions of culture in his concept, cultural capital. Bourdieu (1986) defines cultural capital as: (1) education and experience; (2) cultural artifacts, like books and art, and (3) the habitus as the storehouse for much of the cultural capital held by a given individual or social group (loosely translates to worldview, dispositions, attitudes, perceptions). In this sense, culture is embodied in the human mind, as well as in cultural artifacts that hold symbolic meaning in one form or another (e.g., visual media, shared language). Culture, in this sense, lives both inside and outside the individual. We absorb culture through education and experience, through

interactions with other people (e.g., teachers, parents), and through socialization, learning, and sense-making.

Entrepreneurship research suggests that culture works through other factors, like perceptions and social position to influence decision-making and action. Max Weber (1904) described how societal, cultural, and religious values shaped entrepreneurial activity. In his work on entrepreneurial history, Thomas Cochran (1949) further developed this idea of culture as a causal force influencing the incidence and forms of entrepreneurship. He argued that beliefs are basically manifestations of deeper logics filtered through the material realities faced in the immediate context. In other words, deep cultural logics drive our thinking and our adjustments to the realities of our current situation—the resources at our disposal, for example, or the expectations about how we can appropriately use those resources and ultimately our beliefs about how things should be done. Our beliefs about starting a business, then, are immediately a product of our understanding about what is right and appropriate under the current circumstances. Along these lines of thought, Davidsson (1995) offers a framework depicting values as defining specific beliefs which, in turn, shape entrepreneurial intentions.

Yet culture is more than just a set of ideas. Culture *structures* behavior not only through the mind, but also through the ways in which our values, beliefs, and intentions shape practices. Practices become institutions, either through the pressures created by normative patterns or through a process of codification followed by (probable) enforcement. In this sense, we extend the notion of culture to stretch along on a continuum from softer measures of culture to harder, more structural, measures—from non-material (values, beliefs, expectations) to material (norms, institutions). The process of institutionalization, then, results in patterns of beliefs and expectations inspired by deeper values that become institutionalized in the form of practices (i.e., the way things are done) and in even more highly constraining rules governing practice (i.e., laws, regulations, etc.) that carry increasing higher transaction costs for nonconformity.

We understand a fair bit about the relationship between culture and start-up rates. A growing body of research explores the link between culture and entrepreneurship. Experts surveyed in the GEM research program highlight culture as a key “entrepreneurial framework condition.” Summarizing research using Geert Hofstede’s national cultural indicators, Hayton, George, and Zahra (2002) conclude that countries with high levels of entrepreneurship are likely to be characterized by high individualism, high masculinity, low power distance, and low uncertainty avoidance. Using Geert Hofstede’s national cultural indicators, Shane (1992, 1993) reports that countries with higher rates of ‘individualism’ and ‘power distance’ are positively correlated with inventiveness (proxied by higher numbers of patent filings). In a twenty-one country study, countries with high power distance and high uncertainty avoidance are also likely to have high business ownership rates Wennekers, Noorderhaven, Hofstede, & Thurik, 2002).

We know much less, however, about how norms and institutions influence nascent entrepreneurship. Evidence suggests that entrepreneurial activity is negatively related to welfare provision, at least at the macro level of analysis. Further evidence suggests that complex business regulations serve as a further deterrent to entrepreneurial activity across countries. In short, we know very little about how various normative patterns and institutions influence start-up rates. Cultivating this understanding about the workings of culture may be critical to understanding gendered patterns of entrepreneurship because women’s employment choices appear to be more sensitive to the local environment than those of men (Minniti et al., 2005). For help in theorizing institutional factors, we turn to theory and research on industrial society and institutional forms of the modern welfare state.

Theorizing Institutional Factors

Esping-Andersen (1990) categorizes modern industrialized economies into three distinct groups: corporatist, liberal and conservative welfare regimes according to the intersection of three key social institutions: family, market, and state. The crux of Esping-Andersen's argument is that traditionally, economic systems required members to rely upon family-based strategies to maximize participation in the paid labor market. As countries develop, most de-familialize, resulting in two possible strategic directions: market-based or state-based solutions. Welfare regimes of corporatist (or social-democratic) countries (e.g. Nordics, especially Denmark, Sweden) are largely state-based as they tend to provide government policies and incentives that support women's employment. Liberal welfare (e.g. Anglo-Saxon nations) regimes require women to adopt market-based strategies in order participate in the workforce. Conservative welfare states (e.g. Continental Europe) require more family-based strategies to cope with labor market demands of the labor market, providing few state-supported services for working parents. In this sense, then, it is possible that institutions are not only shaped by culture, but also mitigate the influence of culture on business creation.

Taking a cue, then, from theories of practice, culture, and the modern industrialized (welfare) state, we begin by examining four characteristics of women's economic participation: occupational segregation, remuneration, the proportion of female business leaders and public expenditure on childcare. In the process we propose a set of hypotheses to test.

Occupational Segregation. Shifting industrial sectors offer one way to look at occupational segregation and its effects on gender. Sectoral shifts represent the key transformation of productive technologies and explain a large portion of the variation in gender work patterns across countries. Agriculture is more traditionally male work and services more traditionally female work. Cross-national findings indicate that the size of the agricultural sector correlates positively with entrepreneurship rates for men (Reynolds et al., 2005) while the size of the service sector may explain recent increases in female entrepreneurship growth rates (Terjesen, 2006). We expect to find differences in the degree to which gender interacts with the size of the agriculture and service sectors across countries, net of all other factors. We expect perceptions to differ across agriculture sectors versus service sectors due to changes in the relationship between worker and environment, the proximity to the market, and cultural definitions of gender and work. Women's roles are often rendered invisible in agricultural sectors. For example, evidence from women in development studies and farm women in US shows that while "women's work" in these contexts tends to actually pay the bills, it is often not recognized for what it really is--paid work (e.g., Entwisle et al., 1995; Rosenfeld, 1985). Women in the agricultural context may not feel especially confident or skilled at starting a business or, more probably, would not recognize their efforts as business creation. Service work results in a totally different experience. These jobs are typically viewed as more "feminine" and well-suited for "female" skill sets, or more properly skills that are more commonly found in women. Here women are likely to feel more confident about their abilities to start a business, relative to more male-dominated or male-appropriate fields of work. Furthermore, studies of occupational sex segregation and entrepreneurial activity indicate that male-dominated sectors are more favorable for self employment. Occupational segregation, especially in the form of industry sector shifts, is correlated with distinctly different patterns of gender and work. Thus, we expect the following:

H1a: Countries with larger agricultural sectors will be more likely to have higher rates of business-start up, especially for men.

H1b: Countries with larger service sectors will be more likely to have higher rates of business-start up, especially for women.

Gender Wage Inequality. While occupation segregation describes the gender structure of the labor force, the gender wage gap captures the unequal rents generated in these activities. There is extensive variation across countries in the extent to which men and women are paid the same wage for the same job

(Charles & Grusky, 2004). Pay is an outcome of the employment exchange relationships and women are generally weaker partners in this world. Evidence from the United States indicates that the class distribution of the self-employed varies significantly across gender (Devine, 1994). The distribution for men looks fairly normal with most of the self-employed emerging out the middle class; whereas for women the distribution for women is convex, with more women starting businesses at the lowest levels of income (Devine, 1994). We expect that gender wage inequality at the national level is positively related to the likelihood that women will start a business. Wage restrictions, like gender wage pay differentials, which affect one social group over another, indicate fewer labor market options for the disadvantaged group. Thus, we expect:

H2: Countries with larger gender wage gaps will be more likely to have higher rates of business start-up for women.

Female Business Leadership. A second component of economic opportunity is related to the presence of women in business leadership roles. Although worldwide men and women are wage-employed in roughly equal numbers, women are significantly under-represented in managerial roles (ILO, 2004) and in the highest echelon, corporate boards, where the percentage of female board members ranges from .2% in Japan to 22% in Slovenia (Terjesen & Singh, 2007). Role models are important source of legitimacy and positive cultural change for women in business. Female business leadership may also change the way business is done—that is, it may change the cultural definitions of appropriate business practices and the ideal characteristics of business owners and managers. In this sense, then, higher rates of female business leadership may contribute to more women starting businesses as the pursuit becomes an obvious alternative and the marketplace becomes more friendly to women business owners.

H3: Countries with higher numbers of female leaders will be more likely to have higher rates of business start-up for women.

Public Childcare Expenditures. Government support for working mothers varies extensively across countries, even across industrialized countries. Welfare state theory helps to set our expectations about the differences between liberal, conservative, and corporatist type welfare regimes. In fact, Esping-Andersen's welfare state model is quite compatible with actual patterns of women's employment across national contexts, but presents an interesting dilemma for the study of gender and entrepreneurship. The gender-work literature shows overall employment rates are higher in corporatist countries where state-based strategies (universal daycare, child tax-subsidies) predominate and public-sector employment boosts female employment rates significantly (van der Lippe & van Dijk, 2002). Yet previous research indicates that large welfare sectors are negatively correlated with entrepreneurial participation rates (Reynolds, Bygrave, & Autio, 2004). Consequently, we expect that state-based childcare will actually discourage women from starting businesses because it mediates the challenges to fulltime employment that women in conservative and liberal economies face. In plainer language, it removes the "necessity" motivation for some women. For example, there is a growing population of women who start part-time businesses as an alternative to the inflexibility of full-time market work (Mainiero & Sullivan, 2006). This phenomenon is more likely to occur in conservative and liberal welfare states where working parents must turn to either family-based or market-based childcare solutions, with all the costs and demands that come with these options.

H4: Countries with higher expenditures on public childcare provision will have lower rates of start-up, especially for women.

METHODOLOGY

We use a two-level random intercept logistic regression models to investigate the importance of culture on nascent entrepreneurship rates for men and women in a sample of GEM countries, controlling for individual measures of context and perceptions of self and environment. We test various cultural and institutional factors on the likelihood of start-up across industrialized countries. Country-level measures include national wealth, income inequality (Gini), gender culture and a set of institutional factors—occupational segregation, gender wage gap, female business leadership, and public childcare. Under guidance from previous multi-level research, we control for social position (more specifically economic, cultural, social and symbolic capital), the interaction of gender and fear of business failure, national wealth, income inequality, and gender ideology. (Elam, 2006). Macro-micro interactions are analyzed to explore interactions between institutional arrangements and gender and perceptions at the individual level.

The data for this project were collected from the following sources: the Global Entrepreneurship Monitor (GEM), United Nations' Human Development Report, World Bank World Indicators, OECD Gender, Institutions, and Development Database, and the International Social Survey Programme 2002: Family and Changing Gender Roles III Module. The individual-level data came from the 2001 GEM adult population data which comprises nationally-representative samples and responses to a single interview schedule agreed upon by all national research teams. The surveys were translated and collected by market survey firms with the appropriate experience and under the direct supervision and final review of the appointed national teams. (See Reynolds et al. (2005) for an overview of GEM methodology.) Missing data and sampling issues required that the analysis be restricted to individuals aged 18-64 in 13 countries (N=27085). The countries in the sample include the United States, Germany, Denmark, Sweden, Japan, Canada, Finland, Israel, Russia, Hungary, Poland, New Zealand, and Portugal.

Dependent Variable. Nascent entrepreneurship is our dependent variable. For reasons of comparability, we follow Arenius and Minniti (2005) in defining nascent entrepreneurship as business start-up, active over past 12 months, and expectation of full/part ownership. Thus, nascent entrepreneurship includes all individuals involved in a business start-up, active over past 12 months, with the expectation of full or part ownership. Descriptive analysis reveals that about 5% of total respondents in this 13 country sample qualify as nascent entrepreneurs, with the proportion of nascent entrepreneurship ranging from 14% in New Zealand to 1% in Japan. Rates for women were consistently lower across all countries and significantly lower in most countries.

Control Variables

Economic Capital. We test two binary measures of economic capital, based on a ranked categorical variable of household income recoded into relative thirds within a given country. The measures included in the regression models are in the lower third and in the upper third of the national income distribution. About 29% of the respondents report incomes that fall in the lower third and 31% in the upper third, leaving about 40% in the middle third of their national income distribution. Women are significantly more likely to report household incomes in the lower third and significantly less likely to report household income in the upper third as compared to men. The descriptive statistics further show that, across all countries, women report lower class location more often than men and that these gender differences in household income are significant for most countries.

Cultural Capital. We include two types of cultural capital measures: *institutionalized* (education, experience, and work status) and *habitus* (perceptions). A continuous measure for education was not available, so level of education is tested directly with a set of three dichotomous measures – secondary education or less, post-secondary education, and graduate education. About 63% of the sample report at least a secondary education, with only 2% college graduates. Women are very slightly, but significantly, more likely than men to have completed at least some post-secondary education. This is not an unusual

finding for a sample of mostly wealthy, industrialized countries. The United States has the highest levels of education with 11% reporting a college degree. Most of the countries in the sample have no reported college graduates, but all countries have individuals with at least some post-secondary education.

Following conventional practice, we use age as a proxy for work experience. Continuous age data is missing for Russia, but a 10-year cohort measure was available. The missing age data are filled in with median age of 10-year cohort. Descriptive statistics show that the sample, ranging in age from 18-64, have an average age of about 41. Average age varies from 36 in Israel to 42 in Denmark. Women are very slightly older than men on average. Age, of course, is not necessarily the best way to measure work experience, especially in cases where women take time out from paid work to care for children or homemaker. Because age does not necessarily capture work experience, a measure of work status is also included in the form of four dichotomous variables: part-time, homemaker, retired/student and unemployed, with full-time employment as the reference category. About 63% of the total sample was employed full-time. Men are significantly more likely to be employed full-time (72%) than are women (54%) and women are significantly more likely to be employed part-time, to be homemakers, or unemployed than are men.

Three dichotomous measures of habitus include perceptions of good start-up opportunities, perception of start-up skills, and fear of failure. Building on self-efficacy and other theories, individuals who perceive themselves as possessing entrepreneurial capabilities will be more likely to act entrepreneurially (e.g. Krueger & Bazeal, 1994). An estimated 24% of the sample report expecting to see good start-up opportunities, 39% report having the skills to start a business, and 33% reported fearing failure in business start-up. Men in the sample are significantly more likely to report perceptions of good start-up opportunities (27% of men compared to 21% of women) and having the necessary skills to start a business (39% of men compared to 32% of women). Women, on the other hand, are significantly more likely to report a fear of failure (36% of women compared to 30% of men). Additional analysis indicates that, across all countries, women in the sample are significantly less likely to report having the skills to start a business. Significant gender differences in the other perceptions are much less consistent across countries, but show clear trends towards significance in most countries. Previous work (Koellinger et al., 2005; Minniti & Nardone, 2007; Arenius & Kovalainen, 2006) indicates that gender differences in the propensity to engage in entrepreneurial activity are explained, almost entirely, by perceptual variables.

Social Capital. We test one dichotomous measure of social capital, personally knowing an entrepreneur over the past 12 months. About 38% of all respondents reported knowing an entrepreneur in the past year, with men significantly more likely to say “yes” (43% of men compared to 33% of women). Descriptive statistics further indicate that compared to women, men in the sample are significantly more likely to know an entrepreneur. Rates of knowing an entrepreneur vary from a low of 16% in Japan to a high of 52% in New Zealand. The gender gap ranges from 4% to 21% across countries and is significant in every country.

Symbolic Capital: We use a dichotomous measure of gender called female, where 1=female and 0=male. Roughly 52% of the total sample is female and gender composition varies from low of 49.4% female in Finland to 59% in Denmark. Symbolic capital represents social legitimacy. Scholarship on gender and social status indicates that women generally suffer penalties of legitimacy in the context of paid work, especially with regard to male-linked tasks/jobs (e.g., Williams, 1992; Ridgeway and Correll, 2004; Foschi 2000). Previous analysis reveals an important interaction between being female and fearing failure. We have included this interaction to help clarify the paths of influence across levels of analysis.

National Wealth. National wealth is measured by 2001 per capita GDP (USD) figures, a standardized national statistic drawn from United Nations 2005 Human Development Report. National wealth varies from \$7,100 GDP per capita in Russia to \$34,320 GDP per capita in the United States.

Income Inequality. We use 2001 Gini index scores from the 2005 World Bank Indicators to measure income inequality. Gini scores measure the extent to which the distribution of income among individuals or households within a country deviates from a perfectly equitable distribution on a scale of 0 (perfectly equal) to 100 (completely unequal). The Gini scores for the countries in this analysis vary from a low of 24.7 for Denmark to a high of 40.8 for the United States.

Gender Culture. The final country-level measure is national belief in a traditional gender division of labor. The national scores calculated are based on responses to one attitudinal question in the ISSP Family and Changing Gender Roles module – “A man's job is to earn money, a women's job is to look after the home and family.” The number of favorable responses (agree or strongly agree) varied across countries from a low of 7.6% in Sweden to a high of 58.4% in Russia.

Test Variables

Occupational Segregation. We use two measures as proxies for occupational gender segregation—proportion of the national labor force employed in agriculture and the proportion employed in services, both from 2004 United Nations Economic Commission for Europe (ECE) statistical database. Both sectors are associated with high rates of entrepreneurship activity. However, other research suggests that female rates are considerably higher in service sectors. Across all countries, about 3.4 % of the labor force is employed in agriculture and about 71% in services. This is hardly a surprising statistic given the largely post-industrial nature of the sample. These averages vary from 1.64% of the US labor force in agriculture compared to 7.52% in New Zealand and 62% of Hungarian labor force in services compared to 78% in the United States.

Gender Wage Inequality. The measure for gender wage inequality comes from United Nations ECE database. The average gender pay gap across the sample countries is about 21.7%. This mean varies from a low of 14.6% in Hungary to a high of 29.7% in Canada.

Females Business Leadership. We test one measure of female representation among business leaders from Cranfield Centre for Developing Women Business Leaders. This variable measures the sum of the percentage of women who are company presidents and who are members of top 50 companies. The average for the overall sample is about 14.4% and varies from 9% in Portugal to 23% in Sweden.

Public Childcare Support. We test one measure of public childcare provision from the OECD Family Database. The measure represents public expenditure on childcare as a percentage of 2003 GDP. The average rate of expenditure on childcare across the countries in this sample is 66%, from a low of 0 in Poland to a high of 1.5% in Denmark.

The measures for this analysis reflect the compromise between the data available, the importance of key variables from previous findings, and, of course, the theoretical model of entrepreneurship presented. The macro-level variables all suffer from some serious missing data issues. Also, there are some variables that are particularly critical to the study of gender and nascent entrepreneurship that were not available for this analysis and deserve mention here. Industry for employed persons and family context (marriage and presence of children) are important examples, and are likely to improve the quality of the study.

RESULTS AND DISCUSSION

Results of the analyses suggest that softer and harder measures of culture impact nascent entrepreneurship rates differently for men and women. Table 1 shows the results for a set of six

multilevel logistic regression models. Model 1 is the basic reference model and shows the extent of the country variation before the controls are added. Model 2 includes all of the controls. We control for social position because we want to know how individuals in similar structural locations behave across countries. Based on previous analyses of this data and because we are studying macro-micro linkages with gender and perceptions, we control for one individual level interaction effect – female x fear of failure.

Results of Model 2 show significant effects for perceptions, social capital, age, work status, and the female-fear of business failure interaction. Belief in one's start-up skills is the most important predictor of being a nascent entrepreneur in this model, increasing the odds of start-up by 5.69 times, net of all other factors. Expecting to see a good business opportunity within the next six months increases the likelihood of starting a business by 2.85 times and knowing an entrepreneur over the past 12 months by 2.64 times, net of all other factors. Fearing business failure decreases the odds of starting a business significantly by about 31%, net of all other factors. Being female and fearing business failure decreases the odds of start-up by a further 33% for women compared to other respondents, net of all other factors. Age is a consistent predictor of nascent entrepreneurship across all models. The results indicate that the odds of business start-up decrease by 1% with each additional year of age. Because prior findings indicate that age has a curvilinear relationship with business start-up (Minniti & Arenius, 2006), this result should be viewed with caution. We could have squared this variable for a better result, but left it as is because it was not a test variable. Some work statuses showed significant effects on the likelihood of start up. Contrary to previous findings that have suggested that most businesses are started by those in fulltime employment, this model indicates that being employed part-time increases the odds of start-up by as much as 44%, net of all other factors. Retirees and students are significantly (47%) less likely to be engaged in entrepreneurial activity.

On the country-level we included three control variables – per capita GDP (national wealth), Gini score (national income inequality), and a national gender ideology (belief in a traditional division of labor). One of the problems with studying such similar countries is that the dispersion tends to be low on both individual- and country-level variables. We see this here with the lack of significance of the country variables across most models. Table 2 shows the results for the multilevel regression tests for the influence of micro-macro interactions on nascent entrepreneurship. For example, this table shows that national beliefs in a more traditional gender division of labor interacts significantly with two perceptions measures—belief in one's start up skill and the expectation of seeing a business opportunity within six months—and with our one social capital measures, knowing an entrepreneur over past 12 months to dramatically increase the odds of starting a business. Below we present the results from each test model and discuss the findings for the test variables in terms of the proposed hypotheses.

Insert Table 1 about here

Occupational Segregation and Industrial Sectors. The results for Model 3 indicate that the size of the agricultural and service sectors have no direct effect on the likelihood of business start-up, thus we find no support for H1a or H1b. The introduction of these variables, however, changes the dynamics of the base model, suggesting that the context of employment influences the importance of other key predictors of nascent entrepreneurship. Fear of business failure loses significance in this model and the significant individual interaction effect of being female and fearing business failure becomes stronger—that is, the odds of starting a business shift from 33% less likely to 41% less likely of starting a business for women who fear failure compared to all other respondents and net of all other factors. Being a homemaker and being unemployed also become significant negative predictors of starting a business, net all other factors. Controlling for type of employment sector also renders national income inequality (Gini) a significant predictor of nascent entrepreneurship. The odds of starting a business increase by 11% for each increment in the Gini score, net of all other factors, in this model. Only one macro-micro linkage appears

for these sector measures. The proportion of the labor force in agriculture interacts significantly with belief in one's skills to start a business, decreasing the odds of start-up by 10% net of all other factors.

Insert Table 2 about here

Gender Wage Inequality. Model 4 shows a large and significant direct effect of the gender pay gap on the decision to start a business, providing support for H2. The odds of being a nascent entrepreneur increase by 20% for each unit increase in the gender pay gap, net of all other factors. The interaction analysis showed no significant effects. However, the introduction of both gender pay gap and its interactions affects the dynamics of the model, especially fear of business failure. Being female and fearing failure loses significance when pay gap is introduced, suggesting that the level of gender wage inequality may offer an explanation for why women are more likely to fail business failure in some contexts versus others. Also, national wealth (per capita GDP) and national level of belief in a traditional gender division of labor become significant predictors of nascent entrepreneurship in this model. The odds of starting a business increase by 6% for each unit increase (US\$1000) in per capita GDP and 12% per unit increase in the gender pay gap, net of all other factors. These findings indicate that there is a certain degree of correlation between national wealth, national gender ideology, and the level of gender wage inequality. There are no significant interactions between gender wage gap and gender, perceptions, or social capital. Moreover, the addition of gender pay gap to the model strengthens the effects of two perception variables, the expectation of seeing a business opportunity in the near future and perception of one's start-up skills, and slightly decreases the effect of knowing an entrepreneur.

Female Business Leadership. Model 5 reveals no significant direct effect for female business leadership and no significant interaction effects for female business leadership with gender, perceptions, and social capital. However, the dynamics of the model are again affected by the addition of this variable. The addition of female business leadership to the model, removes the significance of any work status as an influence on business start-up. Household income on the other gains significance in this model. Being in the upper third of the national household income distribution increases the odds of starting a business by about 38% in this model. Further analysis would help disentangle the relationship between household income and female business leadership and its influence on business creation.

Public Expenditure on Childcare. Model 6 indicates no significant effect for public expenditure on childcare. However, the results in Table 2 reveal two interaction effects. The odds of starting a business decrease significantly by 36% per unit increase in public expenditures on childcare for women. This result reflects previous findings on the more general relationship between the level of national welfare provision and entrepreneurship rates. The odds of nascent entrepreneurship are also decreased significantly by 41% per unit increase in public expenditure on childcare for those who expect to see a business opportunity within the near future. Thus we find some support for H4. The addition of the variable and its interactions to the model does not change the dynamics of the model.

In sum, we do not find much in the way of direct effects of the test variables and interactions on nascent entrepreneurship, but we do find further evidence from the ways the models change when macro variables and interactions are tested. In terms of explaining gender differences in nascent entrepreneurship, we see the importance of gender differences in both social position and perceptions for explaining the lower overall participation rates for women. Previous research has shown that women face considerable disadvantages in agricultural contexts, where women's work tends to be invisible in the case of the wives and children in farming families or unlikely as in the cases of manual labor requiring great physical strength or the help of capital intensive farm equipment. This situation, of course, relates to the perceptions that women experience about themselves and their environments. In this sense, service work should advantage women, yet we see little positive effect here, only an absence of negative effects. The important point to note here is that while these employment sector factors may not interact directly with

gender, they do affect variables such as perceptions and social capital that help to explain much of the observed gender differences in entrepreneurship participation rates.

As indicated by the measures of country variation, the random variable calculated in each model, Model 4 offers the best explanation of the country variation in nascent entrepreneurship. The country variation disappears to essentially nothing in this model. The same can be noted in the models testing macro-micro linkages. Using log likelihood as a guide for model fit, however, Model 5 appears to offer the best fit, but less in the way of significant effects. Further analysis is required to explore the indirect effects revealed in the various models.

IMPLICATIONS

This paper makes three important contributions. First, it extends efforts to identify country-level determinants of business creation to the question of culture. Specifically, our framework identifies cultural beliefs and institutional structures that may influence business creation, especially for women in industrialized/post-industrial economies. Second, the multi-level methodology identifies key country-level determinants of nascent entrepreneurship across gender and countries and allows the measurement of gender and country variations of nascent entrepreneurship, the impact of various factors. Finally, we test macro-micro interaction effects, indicating ways in which macro-level contextual factors shape individual-level decision-making and action.

The findings suggest that culture in its various forms and expressions offers an important source of explanation for economic practices like business start-up. For this reason, better theory and methods are required to clarify ways in which different forms of culture influence business creation. Definitions of culture need to be clearly defined and multi-level theories and research models are needed to explore linkages within and across levels. And finally, there is a strong need to better comparative data, especially on the macro-level. Good datasets exist for measurement of beliefs and values, but not for gender practices and institutional arrangements and measures are difficult to find for all the countries.

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REFERENCES

- Acs, Z., Arenius, P., Hay, M., & Minniti, M. 2005. Global Entrepreneurship Monitor: 2004 Executive Report. Babson College and London Business School.
- Arenius, P., & Kovalainen, A. (2006). Similarities and Differences Across the Factors Associated with Women's Self-employment Preference in the Nordic Countries (Vol. 24, pp. 31-59).
- Arenius, P., & Minniti, M. (2005). Perceptual Variables and Nascent Entrepreneurship. *Small Business Economics*, 24(3), 233-247(215).
- Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of Theory and Practice in the Sociology of Education*. West...CT: Greenwood Press.
- Bourdieu, P. (1998). *Practical Reason: On the Theory of Action*. Stanford CA: Stanford University Press.
- De Bruin, A., Brush, C., & Welter, F. (forthcoming 2007). Advancing a Framework for Coherent Research on Women's Entrepreneurship. *Entrepreneurship Theory and Practice*.
- Burt, R. S. (1998). The Gender of Social Capital. *Rationality and Society*, 10(1), 5-46.
- Caree, M.A., Van Stel, A.J., Thurik, A.R., Wennekers, A.P.M. (2002), "Economic development and business ownership: an analysis using data of 23 OECD countries in the period 1976-1996", *Small Business Economics*, Vol. 19 pp.271-90.

- Charles, M., & Grusky, D. B. (2004). *Occupational Ghettos: the Worldwide Segregation of Women and Men*. Stanford, California: Stanford University Press.
- Cochran, T. C. (1949). Role and Sanction in American Entrepreneurial History. In *Change and the Entrepreneur: Postulates and Patterns for Entrepreneurial History*: Harvard Research Center in Entrepreneurial History.
- Davidsson, P. (1995). Determinants of Entrepreneurial Intentions. Unpublished working paper. Jönköping International Business School.
- Davidsson, P., & Wiklund, J. (1997). Values, beliefs and regional variations in new firm formation rates. *Journal of Economic Psychology*, 18(2-3), 179-199.
- Devine, T. J. (1994). Changes in wage-and-salary returns to skill and the recent rise in female self-employment., *American Economic Review* (Vol. 84, pp. 108): American Economic Association.
- Dodd, S. D., & Patra, E. (2002). National Differences in Entrepreneurial Networking, *Entrepreneurship & Regional Development* (Vol. 14, pp. 117-134): Routledge, Ltd.
- Elam, A. B. (2006). *Gender and Entrepreneurship Across 28 Countries: A Multilevel Analysis Using GEM Data*. Doctoral Dissertation, University of North Carolina at Chapel Hill
- Entwisle, B., Henderson, G. E., Short, S. E., Bouma, J., & Zhai, F. (1995). Gender and family businesses in rural China. *American Sociological Review*, 60(1), 36.
- Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton, N.J.: Princeton University Press.
- Esping-Andersen, G. (1999). *Social Foundations of Postindustrial Economies*. Oxford; New York: Oxford University Press.
- Foschi, M. (2000). Double Standards for Competence: Theory and Research. *Annual Review of Sociology* (Vol. 26, pp. 21): Annual Reviews Inc.
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley: University of California Press.
- Charles, M., & Grusky, D. B. (2004). *Occupational Ghettos: the Worldwide Segregation of Women and Men*. Stanford, CA: Stanford University Press.
- Hayton, J. C., George, G., & Zahra, S. A. (2002). National Culture and Entrepreneurship: A Review of Behavioral Research. *Entrepreneurship: Theory & Practice*, 26(4), 33.
- Harding, R., & Bosma, N. (2007). Global Entrepreneurship Monitor (GEM) 2006 Results. London Business School, Babson College.
- Inglehart, R., & Norris, P. (2003). *Rising Tide: Gender Equality and Cultural Change Around the World*. Cambridge, UK; New York: Cambridge University Press.
- International Labor Organization (ILO). (2004). Global Employment Trends for Women. ILO.
- Kim, P., Aldrich, H., & Keister, L. (2006). Access (Not) Denied: The Impact of Financial, Human, and Cultural Capital on Entrepreneurial Entry in the United States. *Small Business Economics*, 27(1), 5-22.
- Koellinger, P., Minniti, M., & Schade, C. (2005). I think I can, I think I can: Overconfidence and Entrepreneurial Behavior. DIW Discussion paper 501.
- Krueger, N.F., & Brazeal, D.V. (1994). Entrepreneurial Potential and Potential Entrepreneurs, *Entrepreneurship Theory & Practice*, 18(3): 91-104.
- Lee, S. M., & Peterson, S. J. (2000). Culture, Entrepreneurial Orientation, and Global Competitiveness. *Journal of World Business*, 35(4), 401-416.
- Lenski, G. E. (2005). *Ecological-Evolutionary Theory: Principles and Applications*. Boulder, CO: Paradigm Publishers.
- Mainiero, L., & Sullivan, S. (2006). *The Opt Out Revolt: Why People are Leaving Companies to Create Kaleidoscope Careers*. Davies-Black.
- Minniti, M., Arenius, P., & Langowitz, N. (2005). *Global Entrepreneurship Monitor 2004 Report on Women and Entrepreneurship*: Center for Women's Leadership at Babson College, Babson College, Babson Park, MA, USA and London Business School, London, UK.

- Minniti, M., & Nardone, C. (2007). Being in Someone Else's Shoes: the Role of Gender in Nascent Entrepreneurship. *Small Business Economics*, 28(2/3), 223-238.
- Mitchell, R. K., Busenitz, L. W., Bird, B., Marie Gaglio, C., McMullen, J. S., & Morse, E. A. (2007). The Central Question in Entrepreneurial Cognition Research 2007. *Entrepreneurship: Theory & Practice*, 31(1), 1-27.
- Mitchell, R. K., Smith, B., Seawright, K. W., & Morse, E. A. (2000). Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal*, 43: 974-993.
- Mueller, S., & Thomas, A. (2001). Culture and Entrepreneurial Potential: A Nine Country Study of Locus of Control and Innovativeness. *Journal of Business Venturing*, 16(1), 51.
- Nolan, P., & Lenski, G. E. (1999). *Human Societies: An Introduction to Macrosociology* (8th ed.). New York: McGraw Hill College.
- OECD. (2006). *Gender, Institutions and Development Database*.
www.oecd.org/dev/institutions/GIDdatabase
- Ortner, S. B. (1993). Theory in Anthropology Since the Sixties. In N. B. Dirks, G. Eley & S. B. Ortner (Eds.), *Culture/power/history : a reader in contemporary social theory* (pp. 372-411). Princeton, N.J.: Princeton University Press.
- Ortner, S. B. (1996). *Making Gender: the Politics and Erotics of Culture*. Boston, MA: Beacon Press.
- Reynolds, P. D., Bygrave, W., & Autio, E. (2004). *GEM 2003 Executive Report*: Babson College, Babson Park, MA, London Business School, London, UK and Kauffman Foundation, Kansas City, MO.
- Reynolds, P., Bosma, N., Autio, E., Hunt, S., Bono, N. D., and Servais, I. (2005). Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998–2003. *Small Business Economics*, 24(3), 205-231.
- Ridgeway, C. L., & Correll, S. J. (2004). Unpacking the Gender System: A Theoretical Perspective on Gender Beliefs and Social Relations. *Gender & Society*, 18(4), 510-531.
- Rosenfeld, R. (1985). *Farm women : work, farm, and family in the United States*. Chapel Hill: University of North Carolina Press.
- Shane, S. A. (1992). Why do some societies invent more than others? *Journal of Business Venturing*, 7: 29-46.
- Shane, S. A. (1993). Cultural influences on national rates of innovation. *Journal of Business Venturing*, 8: 59-73.
- Singh, G., DeNoble, A., & Ehrlich, S. (Eds.). (2003). *National Culture and Entrepreneurship: A Multi-Country Study*.
- Smith, P. (2001). *Cultural theory : An Introduction*. Malden, Mass.: Blackwell Publishers.
- Terjesen, S. (2006). Entrepreneurs' Transitions from Corporate Life to Own Ventures: Leveraging Human Capital And Social Capital to Establish New Businesses. Thesis. Cranfield University.
- Terjesen, S., & Singh, V. (2007). Female Presence on Corporate Boards: A Multi-Country Study of Environmental Context. *Journal of Business Ethics*. Forthcoming.
- UNDP. (2005). *Human Development Report 2005: International Cooperation at a Crossroads: Aid, Trade and Security in an Unequal World*. New York: Oxford University Press
- Van der Lippe, T., & Van Dijk, L. (2002). Comparative Research on Women's Employment. *Annual Review of Sociology*, 28, 221-241.
- Verheul, I., Van Stel, A., & Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. *Entrepreneurship & Regional Development*, 18(2), 151-183.
- Weber. M. (1904). *Essays in Sociology*. H.H. Gerth and C. Wright Mills, translated and edited (1948). London: Routledge & Kegan Paul.
- Wennekers, S., Noorderhaven, N., Hofstede, G., & Thurik, R. (Eds.). (2002). *Cultural and Economic Determinants of Business Ownership Across Countries*: Babson.
- Williams, C. L. (1992). The Glass Escalator: Hidden Advantages for Men in the 'Female' Professions. *Social Problems* 39(3), 253-267.
- Williams, R. (1976). *Keywords*. New York: Oxford University Press.

World Bank. (2005). 2005 World Development Indicators (WDI) Washington, D.C.: World Bank Development Data Center.

Table 1: Odds Ratios for 2-Level Random-Intercept Regressions on Nascent Entrepreneurship

Random Intercept Models	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Fixed Part:</i>						
female	.55 (.032)***	.89 (.0674)	1.00 (.091)	1.00 (.107)	.85 (.098)	.98 (.091)
female*fear of failure		.67 (.120)*	.59 (.116)**	.69 (.159)	.61 (.153)*	.62 (.122)*
low third income		1.15 (.110)	1.17 (.125)	.97 (.123)	1.27 (.170)	1.15 (.127)
upper third income		1.09 (.089)	1.03 (.093)	1.02 (.106)	1.38 (.157)**	1.12 (.102)
age (experience)		.99 (.003)***	.99 (.003)***	.99 (.004)***	.98 (.004)***	.99 (.003)***
secondary degree		1.00 (.103)	1.01 (.114)	.97 (.130)	.88 (.117)	.93 (.103)
some postsecondary		1.08 (.113)	1.10 (.127)	1.00 (.140)	.99 (.138)	1.00 (.116)
college graduate		1.21 (.235)	1.21 (.241)	1.02 (.232)	1.12 (.392)	1.07 (.226)
parttime		1.44 (.184)**	1.24 (.173)	1.38 (.239)	1.05 (.323)	1.456 (.216)**
unemployed		.81 (.101)	.76 (.108)*	.80 (.121)	.80 (.129)	.76 (.103)
homemaker		.76 (.188)	.43 (.147)**	.62 (.242)	1.05 (.324)	.58 (.199)
retired or student		.53 (.090)***	.54 (.108)**	.49 (.122)**	.43 (.109)	.64 (.121)*
expects opportunity		2.85 (.207)***	2.88 (.232)***	3.30 (.312)***	2.68 (.273)***	2.79 (.228)***
belief in start up skill		5.69 (.566)***	5.40 (.602)***	6.02 (.803)***	6.00 (.810)***	5.48 (.609)***
fear of failure		.69 (.076)***	.79 (.096)	.74 (.108)*	.62 (.092)***	.62 (.060)*
knows entrepreneur		2.64 (.210)***	2.61 (.228)***	2.48 (.250)***	2.37 (.258)***	2.62 (.233)***
gdp per capita (xxx)		1.01 (.019)	.97 (.045)	1.06 (.025)*	1.11 (.221)	1.03 (.030)
income inequality (Gini)		1.04 (.022)	1.11 (.026)***	.96 (.026)	1.08 (.092)	1.03 (.039)
belief in traditional gender roles		1.02 (.013)	1.01 (.014)	1.12 (.023)***	1.08 (.092)	1.03 (.021)
% employed in agriculture			.88 (.066)			
% employed in services			.934 (.054)			
gender pay gap				1.20 (.039)***		
female business leadership					1.02 (.114)	
public childcare provision						.61 (.383)
<i>Random Part:</i>						
country variation	.724 (.144)	.231 (.086)	.175 (.082)	.000 (.000)	.221 (.125)	.176 (.090)
Likelihood chi sq	-11739.36	-3075.25	-2459.43	-1759.48	-1663.814	-2442.234
N i(j)	59370 (28)	19605 (13)	14155 (9)	9619 (5)	12183 (8)	15069 (10)

Note: * significant at .05; ** significant at .01; *** significant at .001

Table 2: Odds Ratios for Micro-Macro Interactions from Random-Intercept Regressions

Random Intercept Models	gender beliefs	agriculture sector	services sector	gender paygap	fem business leadership	public childcare
female	.94 (.148)	.99 (.036)	1.02 (.018)	1.00 (.022)	1.00 (.026)	.64 (.143)**
expects opportunity	2.49 (.391)***	.98 (.036)	.99 (.018)	.97 (.022)	1.01 (.804)	.59 (.130)**
belief in start up skill	4.27 (.900)***	.90 (.046)*	1.01 (.028)	1.01 (.036)	.98 (.035)	1.46 (.434)
fear of failure	0.77 (.145)	.98 (.043)	1.04 (.025)	1.03 (.030)	.95 (.032)	.70 (.188)
knows entrepreneur	2.32 (.413)***	1.04 (.042)	.98 (.018)	.99 (.023)	1.02 (.030)	.71 (.173)
country variation	0.226	.177 (.081)	.175 (.082)	.000 (.000)	.226 (.127)	.163 (.084)
Likelihood chi sq	-3072.729	-2460.418	-2460.001	-1758.149	-1662.068	-2434.929
N i(j)	19605 (13)	14155 (9)	14155 (9)	9619 (5)	12183 (8)	15069 (10)

Note: * significant at .05; ** significant at .01; *** significant at .001