Course information:
Copy and paste current course information from Class Search/Course Catalog.

<table>
<thead>
<tr>
<th>Academic Unit</th>
<th>SGSUP</th>
<th>Department</th>
<th>Subject</th>
<th>Number</th>
<th>Title</th>
<th>Economic Development Planning</th>
<th>Units:</th>
</tr>
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<tbody>
<tr>
<td>PUP</td>
<td>494</td>
<td></td>
<td>494</td>
<td></td>
<td></td>
<td>Economic Development Planning</td>
<td>3</td>
</tr>
</tbody>
</table>

Is this a cross-listed course? (Choose one)
No

Is this a shared course? (choose one)
No

Course description:
If so, list all academic units offering this course

Requested designation: (Choose One)
Note: a separate proposal is required for each designation requested

Eligibility:
Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

Area(s) proposed course will serve:
A single course may be proposed for more than one core or awareness area. A course may satisfy a core area
requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two
core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies
course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:
Complete and attach the appropriate checklist
- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Fine Arts and Design core courses (HU)
- Social and Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SG/SG)
- Global Awareness courses (G)
- Historical Awareness courses (H)
- Cultural Diversity in the United States courses (C)

A complete proposal should include:
- Signed General Studies Program Course Proposal Cover Form
- Criteria Checklist for the area
- Course Syllabus
- Table of Contents from the textbook, and/or lists of course materials

Contact information:
Name: Elizabeth Mack
Phone: 480-965-6165
Mail code: 5302
E-mail: eamack1@asu.edu

Department Chair/Director approval: (Required)
Chair/Director name (Typed): David Pijawka
Date: March 18 - 13
Chair/Director (Signature):

Rev. 1/94, 4/95, 7/98, 4/00, 1/02, 10/08, 11/11/ 12/11, 7/12
Arizona State University Criteria Checklist for

CULTURAL DIVERSITY IN THE UNITED STATES [C]

Rationale and Objectives

The contemporary "culture" of the United States involves the complex interplay of many different cultures that exist side by side in various states of harmony and conflict. The history of the United States involves the experiences not only of different groups of European immigrants and their descendants but also of diverse groups of American Indians, Hispanic Americans, African Americans, and Asian Americans—all of whom played significant roles in the development of contemporary culture and together shape the future of the United States. At the same time, the recognition that gender, class, and religious differences cut across all distinctions of race and ethnicity offers an even richer variety of perspectives from which to view ourselves. Awareness of our cultural diversity and its multiple sources can illuminate our collective past, present, and future and can help us to achieve greater mutual understanding and respect.

The objective of the Cultural Diversity requirement is to promote awareness and appreciation of cultural diversity within the contemporary United States through the study of the cultural, social, or scientific contributions of women and minority groups, examination of their experiences in the U.S., or exploration of successful or unsuccessful interactions between and among cultural groups.
Proposer: Please complete the following section and attach appropriate documentation.

# ASU--[C] CRITERIA

## CULTURAL DIVERSITY IN THE UNITED STATES

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
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<tr>
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<td>1. A Cultural Diversity course must meet the following general criteria:</td>
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<tr>
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<td>The course must contribute to an understanding of cultural diversity in contemporary U.S. Society.</td>
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</table>

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<th>Identify Documentation Submitted</th>
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<td>2. A Cultural Diversity course must then meet at least one of the following specific criteria:</td>
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<td>Please see the &quot;Course Outline&quot; portion of the syllabus, the table of contents for the course textbook, and the sample reading entitled &quot;The Enduring Argument for Local Economic Development Planning&quot;.</td>
</tr>
</tbody>
</table>

|     |    | 2a. The course is an in-depth study of culture-specific elements, cultural experiences, or cultural contributions (in areas such as education, history, language, literature, art, music, science, politics, work, religion, and philosophy) of gender*, racial, ethnic and/or linguistic minority groups** within the United States. |
|     |    | Please see the readings designated in the "Course Outline" portion of the syllabus for Weeks 4, 5, 6, 8, and 13. |

|     |    | 2b. The course is primarily a comparative study of the diverse cultural contributions, experiences, or world views of two or more gender*, racial, ethnic and/or linguistic minority groups** within the United States. |
|     |    |  |

|     |    | 2c. The course is primarily a study of the social, economic, political, or psychological dimensions of relations between and among gender*, racial, ethnic and/or linguistic minority groups** within the United States. |
|     |    | Please see the readings designated in the "Course Outline" portion of the syllabus for Weeks 4, 5, 6, 8. |

**Gender groups would encompass categories such as the following: women, men, lesbians, gays, bisexuals, transgender individuals, etc.**

**Cultural, racial, ethnic, and/or linguistic minority groups in the U.S. would include categories such as the following: Hispanics, African Americans, Native Americans/First Peoples, Asian Americans, Jewish Americans, Muslim Americans, members of the deaf community, etc.**
Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

<table>
<thead>
<tr>
<th>Criteria (from checksheet)</th>
<th>How course meets spirit (contextualize specific examples in next column)</th>
<th>Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example-See 2b. Compares 2 U.S. cultures</td>
<td>Example-Compares Latino &amp; African American Music</td>
<td>Example-See Syllabus Pg. 5</td>
</tr>
<tr>
<td>C1: The course must contribute to an understanding of cultural diversity in contemporary U.S. society.</td>
<td>Example-readings that highlight the impact of cultural diversity and the need for an understanding of cultural diversity on the growth trajectory of regions</td>
<td>Please see the &quot;Course Outline&quot; portion of the syllabus, the table of contents for the course textbook, and the sample reading entitled &quot;The Enduring Argument for Local Economic Development Planning&quot;</td>
</tr>
<tr>
<td>C2a: The course is an in-depth study of culture-specific elements, cultural experiences, or cultural contributions (in areas such as education, history, language, literature, art, music, science, politics, work, religion, and philosophy) of gender*, racial, ethnic and/or linguistic minority groups** within the United States.</td>
<td>C2a example: culture, gender, and racial issues surrounding urban revitalization and development efforts are discussed.</td>
<td>C2a: Please see sample reading entitled: &quot;Cities and the creative class.&quot;</td>
</tr>
<tr>
<td>C2c: The course is primarily a study of the social, economic, political, or psychological dimensions of relations between and among gender*, racial, ethnic and/or linguistic minority groups** within the United States.</td>
<td>C2c: gendered experiences in entrepreneurship are discussed in the course.</td>
<td>C2c: Please see sample reading entitled: &quot;The entrepreneurial propensity of women.&quot;</td>
</tr>
</tbody>
</table>
Attached Descriptions for Criteria 1-4

C-1: The course must contribute to an understanding of cultural diversity in contemporary U.S. Society.

The globalizing world presents a lot of challenges for local economic development, particularly as regards the economic situation and development challenges of various racial, gender, and ethnic groups in the United States. In many spheres of economic development, reconciling these different experiences to leverage each individual’s creative capacity is one of the greatest development challenges of our time and an overarching them in this course.

This is a current that underlies many readings in the class, which are presented in some detail in the “Course Outline” portion of the syllabus, the table of contents for the course textbook, and the introductory chapter to the textbook entitled: “The Enduring Argument for Local Economic Development Planning.”

C-2 (criteria a and c):

a. The course is an in-depth study of culture-specific elements, cultural experiences or cultural contributions (in areas such as education, history, language, literature, art, music, science, politics, work, religion, and philosophy) of gender*, racial, ethnic, and/or linguistic minority groups** within the United States.

One example of is the study of culture, gender, and racial issues surrounding urban revitalization and economic development. Please see sample reading entitled “Cities and the creative class.”

b. The course is primarily a study of the social, economic, political, or psychological dimensions of relations between and among gender*, racial, ethnic, and/or linguistic minority groups** within the United States.

An example of this is the discussion of gendered experiences in entrepreneurship. Please see sample reading entitled: “The entrepreneurial propensity of women.”
Arizona State University
PUP 494: Economic Development Planning
Spring 2013

Professor:
Elizabeth A. Mack
Office: Coor Hall 5616
Email: eamack1@asu.edu
Office Hours: Thursday 2pm-4pm or by appointment

Lecture Time and Location
Tempe Campus, Coor L1-88
Tuesday and Thursday
12:00-1:15pm

Required Materials

Textbooks

There is one required text for this class. Selected chapters will be taken from this text as part of the required reading. These chapters will be supplemented with additional readings, as noted in the schedule of classes, to provide students with the most complete introduction to economic development possible.

Required:


Recommended:


Course Description and Objectives

This course is designed to provide students with a broad overview of urban economic development in the U.S. This overview will include the role and goals of economic development in today’s global information economy. It will also provide students with a sense of the breadth of topics that fall beneath the umbrella of “economic development”. The objective of this course is to instill a working knowledge of economic development concepts that students may utilize in future course work or on the job market. A key focus of the course will be the application of course concepts to real world urban development issues in a U.S. context.
Format

The course is comprised of two classes per week. Classes will consist of lectures, discussion, and time dedicated for group work. The lectures will elaborate on information presented in the required reading, but may deviate from this material. Notes for this course will be provided as needed for comprehension of the readings, but students should plan on taking their own notes to better understand course concepts. If you are unable to attend class, it is the responsibility of the student to obtain notes from a classmate. Notes will not be provided by the instructor for students who are unable to come to class.

COURSE EVALUATION

Reading Responses: You will hand in 5 responses to the readings over the course of the semester. The classes for which reading responses are required are noted in the Course Outline portion of the syllabus. Responses are due at the beginning of class. The goal of the responses is to get students to read the required materials before class on that particular day to facilitate class discussion. Guidelines for required elements in your reading responses will be posted on Blackboard. These will be graded on a 0 or check basis. Good assignments that clearly summarize course readings will be given a check or full points. Assignments that are too short, not clear, and/or do not demonstrate an understanding of the readings will not receive any points.

Class Participation: Participation in class is an essential element of this class to ensure comprehensive of the required readings and the ability to apply course concepts. Students are expected to attend class regularly and will also be graded on their participation in class. Participation will be evaluated by a variety of metrics including peer evaluation for group discussions. In order to receive a good participation grade it is necessary to do more than show up to class. This is why this portion of the grade is called class participation rather then attendance.

Mid-Term Exam: The mid-term exam will in class on the date designated in the Course Outline portion of this syllabus. This is exam is closed book and closed notes.

Final Exam: There is no final exam for this class.

Paper and Presentation: Students will be asked to complete a term paper for this class. The paper will be an in-depth discussion of one of the topics covered in class. Papers should be 20 pages in length, double-spaced. The content of this paper will be presented to your classmates in a presentation the last few weeks of class as noted in the Course Outline portion of the syllabus. More information, including a rubric for the paper and presentation are posted on Blackboard.

Extra Credit
No extra credit will be offered in this class.
Grades: The final grade is based on the number of points accumulated over the semester. There are a total of 500 points in this course. The distribution of points for the required elements of the course is as follows:

Reading Responses (25%) 125
Class Participation (25%) 125
Mid-Term Exam (25%) 125
Paper and Presentation (25%) 125
Total 500

Final Grades will be assigned using the following breakdown:

A 460 - 500
A- 450 - 459
B+ 440 - 449
B 410 - 439
B- 400 - 409
C+ 390 - 399
C 360 - 389
C- 350 - 359
D+ 340 - 349
D 310 - 339
D- 300 - 309
F 299 or below

COURSE OUTLINE

(Please note: date, topics, and assignments listed are estimates; they may be adjusted with advance notice as deemed necessary).

Week 1

1/08/2013 Course Introduction
Introduction to Economic Development

1/10/2013 Introduction to Economic Development

Chapter 1: Blakely & Green Leigh: The Enduring Argument for Local Economic Development Planning

Chapter 4: Blakely & Green Leigh: The Local Economic Development Profession and Professionals

Week 2
1/15/2013 Definition & Concepts

Chapter 2: Malizia and Feser: Definitions and Concepts of Development (including Appendix 2.1)

Chapter 3: Blakely & Green Leigh: Concepts and Theories of Local Economic Development


1/17/2013 Urban Economic Development: Why Bother?


Chapter 1: An introduction to state and local economic development policy
Chapter 3: Justifying economic development

Week 3
1/22/2013 State and National Economic Development Policy


Chapter 2: Blakely & Green Leigh: The Influence of National and State Policies on Local Economic Development

1/24/2013 Analytical Tools for Economic Development Planning

Chapter 6: Blakely & Green Leigh: Introduction to Analytical Methods for Local Economic Development Planning

*Topic for Class Paper and Presentation Due*
Week 4

1/29/2013 Economic Development Planning and Strategy Formulation
Chapter 5: Blakely & Green Leigh: The Local Economic Development Planning Process
Chapter 7: Blakely & Green Leigh: Local Economic Development Strategy

1/31/2013 Locality Development
Chapter 8: Blakely & Green Leigh: Locality Development


Week 5

2/05/2013 Locality Development


2/07/2013 Business Development and Enterprise Zones
Chapter 9: Blakely & Green Leigh: Business Development


Week 6

2/12/2013 Business Development and Entrepreneurship

Malizia and Feser Chapter 9: Theories of Entrepreneurship


2/14/2013 Business Development and Incubators


Week 7

2/19/2013 Human Resource Development

Blakely & Green Leigh: Chapter 10: Human Resource Development


2/21/2013 Human Resource Development


**Week 8**

2/26/2013  WRSA No class

*Work on Class Paper and Presentation*

2/28/2013  The Creative Class Debate


*Outline of Class Paper Due in Class*

**Week 9**

3/05/2013  Universities and Economic Development


3/07/2013  Mid-Term Exam In Class

**Week 10**

3/12/2013  Spring Break

3/14/2013  Spring Break
Week 11

3/19/2013 Technology-Based Economic Development


*Reading response 1 due in class*

3/21/2013 Quality of Life and Amenities in Economic Development


*Reading response 2 due in class*

Week 12

3/26/2013 Financing Local Development


Mitchell, J. (2001). Business improvement districts and the “new revitalization of

3/28/2013

Financing Local Development


Reading response 3 due in class

Week 13

4/02/2013

Community Development

Blakely & Green Leigh: Chapter 11: Community Economic Development


4/04/2013

Community Development


http://www.brookings.edu/global/assets06/20corderoguzman.pdf.

*Reading response 4 due in class*

**Week 14**

4/09/2013  Institutional Approaches to Local Economic Development

Blakely & Green Leigh: Chapter 13: Institutional Approaches to Local Economic Development


4/11/2013  AAG No Class

*Work on Class Paper and Presentation*

**Week 15**

4/16/2013  Future Challenges in Economic Development

Perry, M. (2010). Controversies in Local Economic Development

Chapter 14: Blakely & Green Leigh: Local Economic Development Planning’s Response to the Flatter and Climate-Challenged World


*Reading response 5 due in class*

4/18/2013  Student Paper Presentations

*Paper due in class*

**Week 16**

4/23/2013  Student Paper Presentations

4/25/2013  Student Paper Presentations
Final Exam

5/07/2013 No final

Important Course Policies

Students are expected to adhere to Arizona State University’s Student Academic Integrity Policy https://provost.asu.edu/files/AcademicIntegrityPolicyPDF.pdf. Students are encouraged to obtain copies of this policy and become familiar with all regulations that pertain to conduct and academic integrity. For your convenience, this policy is posted on the Blackboard website for this course. It is expected that students will be familiar with the materials in this policy.

1. **Assignments**: Students may wish to study together and to discuss assignments with others. Assignments that are submitted, however, must be the student’s own work. Each submitted assignment should provide evidence that the student understands the concepts that the assignment seeks to develop. Violation of this expectation may lead to disciplinary action.

2. **Own Work**: Assignments, exams, and papers written in this class should be the student’s own work. This means that the student understands the course material and the content of their written work. Although students are encouraged to work together, the written content of assignments must be their own work and should in no way duplicate another student’s work. In the cases of definitions or exact quotes used from course or other readings, this information should be placed in quotes and cited accordingly.

3. **Exams**: Exams are in-class and closed notes. No assistance may be used on the exams including study guides or crib sheets.

4. **Review Sheets**: Review sheets for course materials may be provided at times to help students synthesize information but this should not be expected. This is an upper division course and students are expected to be able to pull out key concepts from the readings without the help of a review sheet.

5. **Plagiarism** is not allowed and is sufficient basis for awarding a failing grade in for an assignment. Plagiarism is defined as intentionally or knowingly representing the words or ideas of another as one’s own without citing them.

6. **Fabrication** is not allowed and is sufficient basis for disciplinary action. Fabrication is defined as the intentional falsification or invention of any information or citation.

7. **Citation of Sources**: Paraphrased sentences or exact quotes should always be cited. Facts and pieces of information that are not considered common knowledge (i.e. vegetables are nutritious) should be cited. The APA citation style is the appropriate citation format for this class. If you have questions about citing sources please ask the instructor.
8. **Disciplinary Action:** Cases will be dealt with on an individual basis, but this may include a failing grade for an assignment, failing grade for the course, failing grade of XE for the course, or dismissal from the program depending on the gravity of the offense.

9. The Professor will evaluate students on the basis of their own work and thought, which means that all work presented must be the student’s own, done specifically for this course. Students should be able to identify their sources of information such as web sites, books, journals and reports, to defend the logic of the arguments and conclusions, and to express ideas in various forms as their own property. Submissions of papers or assignments written for another course or by a person other than the student submitting the work may lead to disciplinary action.

10. If you are absent for an exam, a make-up will be offered only if (1) you contact Elizabeth Mack by phone (812-679-8620), email, or in person before the exam or in the **24 hours** immediately following the end of the exam period, and (2) you provide a written doctor's note stating that you were incapacitated and unable to attend the exam. There are no exceptions.

11. **Late Work:** Late papers and exercises are not acceptable. DO NOT send written assignments via email, place them under a door, or in a mailbox without permission. **If you do this without permission you will not receive credit for the assignment.**

12. **Students with Disabilities:** Every effort possible will be made to accommodate your special needs. Please see the course instructor at the beginning of the semester to discuss any needs that will enhance your learning experience.

13. Students are expected to attend all classes and actively take notes. Students who do not attend class on a regular basis will not do well in this course. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you miss class it is not the instructor’s responsibility to supply you with class notes. Please obtain these from a fellow classmate.

14. If you are having problems with the course material or with the assignments, or if you just seem to be falling behind, please see the course instructor or associate instructor as soon as possible.

15. Office hours are your opportunity to discuss course material outside of the class. Office hours also represent an opportunity to get to know your instructors (and for them to get to know you). Feel free to use office hours to find out more about the discipline of geography as well.

16. **Class conduct:** This course is designed to be discussion oriented and question friendly. Please use good judgment in class discussion and treat it like a work environment. This includes restricting conversations to **course relevant** material and not dominating class time. Class must also finish on time so please do not start new discussion threads near the end of class. If discussion has not helped make course concepts clear then please come to office hours. If a student is consistently disruptive and/or rude to the instructor and/or their classmates they
will be asked to leave the classroom. Participation will not be given for days students are asked to leave class.

17. *Email Communication:* The content of emails is a professional exchange and thus the content should be professional in nature. Email should be used to verify meeting times and other kinds of short communications. Extensive questions about course material should be reserved for office hours. **I will also not discuss grades over email due to privacy concerns.** This should be done after class or in office hours.

18. If you are unclear about any content of this syllabus, information in class, or readings, it is the student's responsibility to speak with the instructor. The instructor will try and communicate clearly with students through rubrics, assignment instructions, and announcements. If the communication is not clear please ask about any doubts you may have.

DISCLAIMER: All information contained in this syllabus (other than the grade and absence policy portions) may be subject to change with advance notice as deemed appropriate by the instructor.
Contents

Preface xi
Overview xiii

✓ Chapter 1. The Enduring Argument for Local Economic Development Planning 1

Local Economic Development Planning in the Face of Globalization 1
The Influence of Outsourcing and Insourcing 4
People and Places Left Out of the New Economy 10
The Future of Local Economic Development Planning 25
References and Suggested Readings 27

✓ Chapter 2. The Influence of National and State Policies on Local Economic Development 31

Three Approaches to National Economic Policy 32
Monetary and Tax Policy 35
Trade Policy 36
Welfare to Workfare Policy 38
Health-Care Policy 39
Employment Policy 39
National Policy Targeting Local Economic Development 40
Coordination of Local and National Development Efforts 55
State Economic Development Approaches 56
Challenges and Opportunities Inherent in Economic Development Policy Making 62
Conclusion 65
Appendix 67
Notes 68
References and Suggested Readings 68

✓ Chapter 3. Concepts and Theory of Local Economic Development 73
Defining Local Economic Development 73
Theories of Growth and Development 76
Translating Theory Into Practice 89
Theories, Models, and Fads in Local Economic Development Planning 92
The Continued Evolution of Economic Development Theory Into Local Practice 94
Conclusion 98
Notes 98
References and Suggested Readings 99

✓ Chapter 4. The Local Economic Development Profession and Professionals 101
The Role of the Economic Development Practitioner 105
The Community 106
The Organization 107
The Task Functions 108
The Clients 109
The Professional Roles 110
Economic Development Careers 111
Summary and Conclusion 112
References and Suggested Readings 112

✓ Chapter 5. The Local Economic Development Planning Process 115
Preliminary Tasks of Local Economic Development Planning 116
The Six Phases of Planning 118
Managing Planning Resources in the Community 120
Selecting a Local Economic Development Role 123
Typology of Planning Approaches 126
Features of Local Economic Development Planning 132
Conclusion 135
Putting It All Together: Creating a Local Economic Development Strategy (Part I) 136
References and Suggested Readings 139
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Introduction to Analytical Methods for Local Economic Development Planning</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td>Information and Analytical Requirements for Local Economic Development Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understanding an Economy's Strengths and Weaknesses</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>The Economic Profile</td>
<td>145</td>
</tr>
<tr>
<td></td>
<td>Building on Comparisons</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>Gathering Available Descriptive Data</td>
<td>157</td>
</tr>
<tr>
<td></td>
<td>Examining Analytical Techniques</td>
<td>164</td>
</tr>
<tr>
<td></td>
<td>Principles of Economic Projections</td>
<td>183</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Putting It All Together: Creating a Local Economic Development Strategy (Part II)</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>References and Suggested Readings</td>
<td>208</td>
</tr>
<tr>
<td>7</td>
<td>Local Economic Development Strategy</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>The Goals of Local Economic Development</td>
<td>215</td>
</tr>
<tr>
<td></td>
<td>Prerequisites for Successful Strategy Formulation</td>
<td>216</td>
</tr>
<tr>
<td></td>
<td>Selecting Strategic Options</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Economic Development Plans Within the Context of Comprehensive Plans</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Common Traps in Strategy Formulation</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>Assembling the Elements of a Strategy</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Projects From Strategies</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>Plan Financing and Implementation</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>References and Suggested Readings</td>
<td>233</td>
</tr>
<tr>
<td>8</td>
<td>Locality Development</td>
<td>235</td>
</tr>
<tr>
<td></td>
<td>Landbanking and Community Land Trusts</td>
<td>237</td>
</tr>
<tr>
<td></td>
<td>Physical Infrastructure Development on Industrial and Commercial Land</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Speculative Buildings</td>
<td>241</td>
</tr>
<tr>
<td></td>
<td>Zoning Regulations</td>
<td>242</td>
</tr>
<tr>
<td></td>
<td>Business Improvement Districts</td>
<td>243</td>
</tr>
<tr>
<td></td>
<td>Regulatory Improvement Through Simplification</td>
<td>245</td>
</tr>
<tr>
<td></td>
<td>Townscaping</td>
<td>245</td>
</tr>
<tr>
<td></td>
<td>Shopstading</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td>Housing and Neighborhood Improvement</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>Household Services</td>
<td>249</td>
</tr>
</tbody>
</table>
Chapter 9. Business Development

Creating a Good Business Climate
Entrepreneur Development and Economic Gardening
One-Stop Business Assistance Centers
Start-Up and Venture Financing Companies and Development Banks
Small Business Development Centers
Micro-Enterprise
Women’s Enterprises
Promotion and Tourism Programs
Research and Development
Enterprise Zones
The Use of Financial Incentives for Business Development
Conclusion
Notes
References and Suggested Readings

Chapter 10. Human Resource Development

Workforce Development
Realities of an Undertrained Workforce
Public Role in Workforce Development
Goals of Human Resource Programs
Matching Human Resource Programs and Economic Development Objectives
Education as the Foundation of Human Resource Development
Implementing a Human Resource Development Strategy
Conclusion
References and Suggested Readings

Chapter 11. Community Economic Development

Community Development Corporations
Community Cooperatives
Local Enterprise Agencies
Employee/Worker Ownership
Targeting and Marketing Neighborhood/Community Assets
Conclusion
References and Suggested Readings
omic development planner and the workable economic development have become and global economic crisis. But it is also
omic development planning has never seen the full range of activities that constitute development. If all localities were to system-activities, they would be competitively created by forces beyond their control, or
ditions. However, the next few years will chronicle and reflect on local economic use to respond to our current crisis. We
cudies in the next edition.

THE ENDURING ARGUMENT
FOR LOCAL ECONOMIC DEVELOPMENT PLANNING

Cities, towns, counties, and all local entities in a global economy have the challenge and opportunity of crafting their own economic destinies. This is true for the poorest as well as the wealthiest localities. In reality, the forces of nature, demography, technology, and industry are such that no local economy can ever count on an achieved position of stability and security. This has always been true, but the contemporary context for local economic development planning is being severely challenged by the trends of rising inequality and global warming. It is also being challenged by the increasingly transitory nature of any given local economy in the face of overwhelming forces of globalization. These forces are flattening the world in such a way that few, if any, local economies are exempt from globalizing forces that can bring growth and development, or decline and increased poverty (Friedman, 2005).

LOCAL ECONOMIC DEVELOPMENT PLANNING IN THE FACE OF GLOBALIZATION

The globalizing economy—until the recession that began in 2008—was truly a case of the whole being greater than the sum of its parts. The integration of national and local economies into one global economy accelerated growth in
Chapter 1  
Planning Local Economic Development

The planning framework for local economic development is shaped by several key principles. The first principle is that economic development should be inclusive and participatory. This means that local communities should be involved in the decision-making process and have a say in how their economies are shaped. The second principle is that economic development should be sustainable. This means that economic growth should be balanced between social, economic, and environmental dimensions. The third principle is that economic development should be aligned with the needs and aspirations of the local community. This means that economic development initiatives should be designed to address specific needs and challenges faced by the community. The fourth principle is that economic development should be designed to be competitive and in line with global trends. This means that economic development initiatives should be designed to compete in the global market and align with global economic trends.
The Geography of the New Economy

The New Economy

Box 1.1

The Emerging Market for Local Economic Development

Planning Local Economic Development

The location and control of economic opportunities and resources are no longer determined by the size and location of the corporation. As more and more organizations move to a service-based economy, the ability to attract and retain skilled labor is becoming increasingly important. The geography of the new economy is shifting, driven by the changing needs of the global marketplace.

In the 1980s, the focus was on the automobile industry, with factories and assembly lines located in the Midwest and the South. However, in the 1990s and 2000s, the focus shifted to the information technology and biotechnology sectors. These new industries require a different set of skills and a different set of locations.

The geography of the new economy is influenced by factors such as the availability of skilled labor, the cost of living, and the quality of life in various regions. As a result, cities and regions that can attract these industries are becoming more competitive.

The emergence of the new economy has also led to the development of new economic development strategies. These strategies focus on attracting and retaining high-tech industries, creating a skilled workforce, and improving the quality of life in the region.

The geography of the new economy is constantly evolving, and cities and regions that can adapt to this change will be best positioned to succeed in the future.
Growing Bachelorette Party Effects: TWO CASE STUDIES

The economy and the marketplace are experiencing a surprising phenomenon: a rise in the number of women choosing to marry men who are already married. This trend, known as "bachelorette parties," is having a significant impact on the economy and the marketplace.

**BOX 1.2**

**What is Happening with the Middle Class?**

In the new economy, the middle class is experiencing a significant decline. While the top 1% of earners continue to see their incomes rise, the middle class is struggling to keep up. This has led to a rise in income inequality, with the top 1% now earning more than the bottom 50%.

To combat this trend, policymakers are calling for a renewed focus on promoting economic growth and opportunity for all. This includes investing in education and workforce development, as well as implementing policies to reduce income inequality.

**Chapter 1: The Economic Impact of Local Economic Development**

10 Planning Local Economic Development
The Bases In Good Jobs

After high education, so can move to higher wage occupations.
Planning Local Economic DevelopmentColumnName
Chapter 1: The Evolving Nature of Local Economic Development

1. Growth, local economic development, and the regional economy

2. The demand for planning for local economic development

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### Table 4: Spatial Inequality in Income, Poverty, and Health Insurance

<table>
<thead>
<tr>
<th>Area</th>
<th>Income 2002</th>
<th>Income 2006</th>
<th>Income 4% Change</th>
<th>Percentage Below Poverty 2002</th>
<th>Percentage Below Poverty 2006</th>
<th>Percentage Below Poverty 4% Change</th>
<th>Percentage With No Health Insurance 2002</th>
<th>Percentage With No Health Insurance 2006</th>
<th>Percentage With No Health Insurance 4% Change</th>
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</thead>
<tbody>
<tr>
<td>Outside Metro</td>
<td>$23,281</td>
<td>$25,127</td>
<td>7.8%</td>
<td>13.4%</td>
<td>13.1%</td>
<td>0.3%</td>
<td>17.0%</td>
<td>19.0%</td>
<td>10.0%</td>
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<tr>
<td>Inside Metro</td>
<td>$24,786</td>
<td>$26,247</td>
<td>5.9%</td>
<td>14.8%</td>
<td>14.0%</td>
<td>0.8%</td>
<td>18.2%</td>
<td>20.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Inside Central City</td>
<td>$26,016</td>
<td>$26,832</td>
<td>3.1%</td>
<td>15.6%</td>
<td>15.2%</td>
<td>1.4%</td>
<td>19.5%</td>
<td>21.0%</td>
<td>11.3%</td>
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<tr>
<td>Metro States</td>
<td>$28,427</td>
<td>$28,753</td>
<td>1.1%</td>
<td>16.4%</td>
<td>16.0%</td>
<td>1.2%</td>
<td>22.1%</td>
<td>23.5%</td>
<td>13.6%</td>
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<tr>
<td>West</td>
<td>$31,347</td>
<td>$32,151</td>
<td>2.6%</td>
<td>17.2%</td>
<td>16.8%</td>
<td>1.3%</td>
<td>23.9%</td>
<td>25.2%</td>
<td>15.3%</td>
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<tr>
<td>South</td>
<td>$34,331</td>
<td>$34,887</td>
<td>1.6%</td>
<td>18.1%</td>
<td>17.7%</td>
<td>1.7%</td>
<td>25.5%</td>
<td>26.8%</td>
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<tr>
<td>Midwest</td>
<td>$40,453</td>
<td>$41,531</td>
<td>2.6%</td>
<td>19.6%</td>
<td>19.1%</td>
<td>1.2%</td>
<td>26.8%</td>
<td>28.0%</td>
<td>10.5%</td>
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<tr>
<td>Northeast</td>
<td>$46,913</td>
<td>$47,615</td>
<td>1.4%</td>
<td>21.1%</td>
<td>20.6%</td>
<td>1.0%</td>
<td>28.2%</td>
<td>29.4%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Region</td>
<td>$52,157</td>
<td>$52,657</td>
<td>0.9%</td>
<td>22.3%</td>
<td>21.8%</td>
<td>0.9%</td>
<td>30.7%</td>
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<tr>
<td>Total</td>
<td>$56,777</td>
<td>$57,249</td>
<td>0.8%</td>
<td>23.5%</td>
<td>23.0%</td>
<td>0.5%</td>
<td>32.6%</td>
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Source: Delphos-Vell et al., 2006.
Increasing Rural Neutrality

Chapter 1: The Fundamentals of Local Economic Development

22 Planning Local Economic Development
GLOBAL WARMING
The US Economic Engine

Shaping Global Warming
The US Economic Engine

Chapter 1: The Evolution of Local Economic Development

Planning Local Economic Development

The Future of Local Economic Development

Economic Development Planning

The US economy is in a period of profound economic transformation. The economic landscape is rapidly changing, and planners need to understand the implications of these changes for local economic development.

The implications of globalization, technological advancements, and demographic shifts are reshaping the economy. Planners need to be proactive in identifying and addressing the challenges and opportunities presented by these changes.

Globalization has led to increased competition from abroad, and the need for innovation and agility in the local economy. Technological advancements have created new industries and new ways of doing business. Demographic shifts, such as the aging population, are also having a significant impact on economic development.

Local economic development needs to respond to these changes by fostering a business-friendly environment, investing in education and training, and building a strong workforce. Planners need to work with businesses, community leaders, and government officials to create a cohesive strategy for economic development that addresses the needs of the community.

In conclusion, the future of local economic development is uncertain, but it is clear that planners need to be proactive in responding to the challenges and opportunities presented by these changes. By working together, we can ensure that our communities are prepared for the economic changes that lie ahead.
REFERENCES AND SUGGESTED READINGS

The integration of economic development and environmental protection can be achieved by creating policies that promote sustainable growth. Economic development strategies that focus on reducing environmental impacts can increase the overall economic well-being of communities. The integration of economic development and environmental protection can also lead to increased social equity and improved quality of life for residents.

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In this section, we will discuss the role of economic development and environmental protection in creating sustainable communities. We will explore the economic and environmental benefits of integrating these two fields and provide examples of successful projects that have achieved this integration.

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Cities and the Creative Class

Richard Florida*

Carnegie Mellon University

Cities and regions have long captured the imagination of sociologists, economists, and urbanists. From Alfred Marshall to Robert Park and Jane Jacobs, cities have been seen as cauldrons of diversity and difference and as fonts for creativity and innovation. Yet until recently, social scientists concerned with regional growth and development have focused mainly on the role of firms in cities, and particularly on how these firms make location decisions and to what extent they concentrate together in agglomerations or clusters. This short article summarizes recent advances in our thinking about cities and communities, and does so particularly in light of themes advanced in my recently published book, The Rise of the Creative Class, which focuses on diversity and creativity as basic drivers of innovation and regional and national growth. This line of work further suggests the need for some conceptual refocusing and broadening to account for the location decisions of people as opposed to those of firms as sources of regional and national economic growth. In doing so, this article hopes to spur wider commentary and debate on the critical functions of cities and regions in 21st-century creative capitalism.

"Great cities have always been melting pots of races and cultures. Out of the vivid and subtle interactions of which they have been the centers, there have come the newer breeds and the newer social types."

Park, Burgess, and McKenzie (1925)

From the seminal work of Alfred Marshall to the 1920 studies by Robert Park to the pioneering writings of Jane Jacobs, cities have captured the imagination of sociologists, economists, and urbanists. For Park and especially for Jacobs, cities were cauldrons of diversity and difference, creativity and innovation. Yet over the last several decades, scholars have somehow forgotten this basic, underlying theme of urbanism. For the past two decades, I have conducted research on the social and economic functions of cities and regions. Generally speaking, the conventional wisdom in my field of regional development has been that companies, firms, and industries drive regional innovation and growth, and thus an almost exclusive focus in the literature on the location and, more recently, the clustering of firms and industries. From a policy perspective, this basic conceptual approach has undergirded policies that seek to spur growth by offering firms financial incentives and the like. More recently, scholars such as Robert Putnam have focused on the social functions of neighborhoods, communities, and cities, while others, such as the urban sociologist Terry Clark and the economist Edward Glaeser, have turned their

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attention toward human capital, consumption, and cities as lifestyle and entertainment districts.

This short article summarizes recent advances in our thinking about cities and communities, and does so particularly in light of themes advanced in my recently published book *The Rise of the Creative Class* (Florida, 2002). In doing so, I hope to spur wider commentary and debate on the critical functions of cities and regions in 21st-century creative capitalism.

**WHY GEOGRAPHY IS NOT DEAD**

Perhaps the greatest of all the modern myths about cities is “geography is dead.” With the Internet and modern telecommunication and transportation systems, the thinking goes, it is no longer necessary for people who work together to be together, so they won’t be. But this end of geography theme has been with us since the turn of the 19th century, when experts predicted that technologies from telegraph and the telephone to the automobile and the airplane would essentially kill off cities. In his widely read 1998 book, *New Rules for the New Economy*, Kelly wrote, “The New Economy operates in a ‘space’ rather than a place, and over time more and more economic transactions will migrate to this new space” (1998, pp. 94–95). Kelly then qualifies this to some degree, writing that: “Geography and real estate, however, will remain, well . . . real. Cities will flourish, and the value of a distinctive place, such as a wilderness area, or a charming hill village, will only increase.” Still, he reiterates that “People will inhabit places, but increasingly the economy inhabits a space.”

Never has a myth been easier to deflate. Not only do people remain highly concentrated, the economy itself—the high-tech, knowledge-based, and creative-content industries that drive so much of economic growth—continues to concentrate in specific places from Austin and Silicon Valley to New York City and Hollywood, just as the automobile industry once concentrated in Detroit. Students of urban and regional growth, from Robert Park (1925) and Jane Jacobs (1961, 1969, 1984) to Wilbur Thompson (1965), have long pointed to the role of places as incubators of creativity, innovation, and new industries (see also Ullman, 1958). In addition, the death-of-place prognostications contradict the qualitative research I have conducted analyzing the role of place in an individual’s location decisions. From the countless interviews, the focus groups I’ve observed, and the statistical research I’ve done, it is apparent that place and community are more critical factors than ever before. And it appears that place, rather than being an abstract “space” as Kelly suggests, is essential to economic life. The economy itself increasingly takes form around real concentrations of people in real places.

**AGGLOMERATION AND CLUSTER THEORIES**

Many researchers, sociologists, and academics have theorized on the continued importance of place in economic and social life. An increasingly influential view suggests that place remains important as a locus of economic activity because of the tendency of firms to cluster together. This view builds on the influential theories of the economist Alfred Marshall, who argued that firms cluster in “agglomerations” to gain productive efficiencies. The contemporary variant of this view, advanced by Harvard Business School professor Michael Porter, has many proponents in academia and in the practice of economic development (Porter, 1998, 2000a, 200b). It is clear that similar firms tend to cluster. Examples of this
sort of agglomeration include not only Detroit and Silicon Valley, but the *maquiladora* electronics and auto-parts districts in Mexico, the clustering of disk-drive makers in Singapore and of flat-panel-display producers in Japan, and the garment district and Broadway theatre district in New York City.

The question is not whether firms cluster but why. Several answers have been offered. Some experts believe that clustering captures efficiencies generated from tight linkages between firms. Others say it has to do with the positive benefits of co-location, or what they call “spillovers.” Still others claim it is because certain kinds of activity require face-to-face contact (Feldman, 2000; Jaffe, 1989; Audretsch and Feldman, 1996; Audretsch, 1989). But these are only partial answers. More importantly, companies cluster in order to draw from concentrations of talented people who power innovation and economic growth. The ability to rapidly mobilize talent from such a concentration of people is a tremendous source of competitive advantage for companies in our time-driven economy of the creative age.

**THE SOCIAL CAPITAL PERSPECTIVE**

An alternative view is based on Robert Putnam’s social capital theory. From his perspective, regional economic growth is associated with tight-knit communities where people and firms form and share strong ties (Putnam, 2000). In his widely read book *Bowling Alone*, he makes a compelling argument that many aspects of community life declined precipitously over the last half of the 20th century (Putnam, 2000; see also Putnam, 1993, 1996). Putnam gets his title from his finding that from 1980–1993, league bowling declined by 40 percent, whereas the number of individual bowlers rose by 10 percent. This, he argues, is just one indicator of a broader and more disturbing trend. Across the nation, people are less inclined to be part of civic groups: voter turnout is down, so is church attendance and union membership, and people are less and less inclined to volunteer. All of this stems from what Putnam sees as a long-term decline in social capital.

By this, he means that people have become increasingly disconnected from one another and from their communities. Putnam finds this disengagement in the declining participation in churches, political parties, and recreational leagues, not to mention the loosening of familial bonds. Through painstakingly detailed empirical research, he documents the decline in social capital in civic and social life. For Putnam, declining social capital means that society becomes less trustful and less civic-minded. Putnam believes a healthy, civic-minded community is essential to prosperity.

Although initially Putnam’s theory resonated with me, my own research indicates a different trend. The people in my focus groups and interviews rarely wished for the kinds of community connectedness Putnam talks about. If anything, it appeared they were trying to get away from those kinds of environments. To a certain extent, participants acknowledged the importance of community, but they did not want it to be invasive or to prevent them from pursuing their own lives. Rather, they desired what I have come term “quasi-anonymity.” In the terms of modern sociology, these people prefer weak ties to strong.

This leads me to an even more basic observation. The kinds of communities that we both desire and that generate economic prosperity are very different than those of the past. Social structures that were important in earlier years now work against prosperity. Traditional notions of what it means to be a close, cohesive community and society tend
to inhibit economic growth and innovation. Where strong ties among people were once important, weak ties are now more effective. Those social structures that historically embraced closeness may now appear restricting and invasive. These older communities are being exchanged for more inclusive and socially diverse arrangements. These trends are also what the statistics seem to bear out.

All of this raises deep questions that run to the very core of community and society. The life we think of as a key to America's golden age—strong ties between families and friends, close neighborhoods, and those attributes that come along with such communities, such as civic clubs and vibrant electoral politics, to name a few—is giving way to weaker tied yet more diverse communities. These newer communities are also more effective at generating economic growth and attracting high technology to a region. In the main, the ways that communities create economic growth has been transformed.

Historically, strong-tied communities were thought to be beneficial. However, there are some theorists that argue the disadvantages of such tight bonds. Indeed, social capital can and often does cut both ways: it can reinforce belonging and community, but it can just as easily shut out newcomers, raise barriers to entry, and retard innovation. Adam Smith long ago noted this dilemma in his *Wealth of Nations*, lashing out at merchants who formed tightly knit cliques for precisely such reasons: "People of the same trade seldom meet together, even for merriment or diversion, but the conversation ends in a conspiracy against the public" (Smith, 1776). Mancur Olson later applied such thinking to show how tightly knit communities can insulate themselves from outside pressure and sow the seeds of their own demise (Olson, 1971, 1986). Or, as Portes and Landolt put it, "The same strong ties that help members of a group often enable it to exclude outsiders" (Portes and Landolt, 1996).

Places with dense ties and high levels of traditional social capital provide advantages to insiders and thus promote stability, while places with looser networks and weaker ties are more open to newcomers and thus promote novel combinations of resources and ideas.1

HUMAN CAPITAL AND URBAN-REGIONAL GROWTH

Over the past decade or so, a potentially more powerful theory for city and regional growth has emerged. This theory postulates that people are the motor force behind regional growth. Its proponents thus refer to it as the "human capital" theory of regional development.

Economists and geographers have always accepted that economic growth is regional—that it is driven by, and spreads from, specific regions, cities, or even neighborhoods. The traditional view, however, is that places grow either because they are located on transportation routes or because they have natural resources that encourage firms to locate there. According to this conventional view, the economic importance of a place is tied to the efficiency with which one can make things and do business. Governments employ this theory when they use tax breaks and highway construction to attract business. But these cost-related factors are no longer as crucial to success.

The proponents of the human capital theory argue that the key to regional growth lies not in reducing the costs of doing business, but in endowments of highly-educated and productive people. The human capital theory—like many theories of cities and urban areas—owes a debt to Jane Jacobs. Decades ago, Jacobs noted the ability of cities to attract
creative people and thus spur economic growth (Jacobs, 1984). The Nobel-prize-winning economist Robert Lucas sees the productivity effects that come from the clustering of human capital as the critical factor in regional economic growth, referring to this as a “Jane Jacobs externality.” Building on Jacobs’s seminal insight, Lucas contends that cities would be economically unfeasible if not for the productivity effects associated with endowments of human capital, writing that:

If we postulate only the usual list of economic forces, cities should fly apart. The theory of production contains nothing to hold a city together. A city is simply a collection of factors of production—capital, people and land—and land is always far cheaper outside cities than inside.... It seems to me that the “force” we need to postulate to account for the central role of cities in economic life is of exactly the same character as the “external human capital.”... What can people be paying Manhattan or downtown Chicago rents for, if not for being near other people? (Lucas, 1988, pp. 38–39)

Studies of national growth find a clear connection between the economic success of nations and their human capital, as measured by the level of education. This connection has also been found in regional studies of the United States. In a series of studies, Harvard University economist Edward Glaeser and his collaborators have found considerable empirical evidence that human capital is the central factor in regional growth (Glaeser, 1998, pp. 139–160; see also Glaeser, 2000; Rauch, 1993, pp. 380–400; Simon, 1998, pp. 223–243; Simon and Nardinelli, 1996, pp. 384–413; Mathur, 1999, pp. 203–216). According to Glaeser, such clustering of human capital is the ultimate source of regional agglomerations of firms: firms concentrate to reap the advantages that stem from common labor pools, not, according to Glaeser, to tap the advantages from linked networks of customers and suppliers as is more typically argued. Research by one of Glaeser’s graduate students, Spencer Glendon, shows that a good deal of city growth over the 20th century can be traced to those cities’ levels of human capital at the beginning of the century (Glendon, 1998). Places with a greater number of talented people grew faster and were better able to attract more talent.

THE CREATIVE CAPITAL PERSPECTIVE

The human capital theory establishes that creative people are the driving force in regional economic growth. From that perspective, economic growth will occur in places that have highly educated people. But in treating human capital as a stock or endowment, this theory begs the question: Why do creative people cluster in certain places? In a world where people are highly mobile, why do they choose some cities over others and for what reasons?

Although economists and social scientists have paid a lot of attention to how companies decide where to locate, they have virtually ignored how people do so. This is the fundamental question I have tried to answer. In my interviews and focus groups, the same answer kept coming back: people said that economic and lifestyle considerations both matter, and so does the mix of both factors. In reality, people were not making the career decisions or geographic moves that the standard theories said they should: They were not slavishly following jobs to places. Instead, it appeared that highly-educated individuals were drawn to places that were inclusive and diverse. Not only
did my qualitative research indicate this trend, but the statistical analysis proved the same.

Gradually, I came to see my perspective, the creative capital theory, as distinct from the human capital theory. From my perspective, creative people power regional economic growth and these people prefer places that are innovative, diverse, and tolerant. My theory thus differs from the human capital theory in two respects: (1) it identifies a type of human capital, creative people, as being key to economic growth; and (2) it identifies the underlying factors that shape the location decisions of these people, instead of merely saying that regions are blessed with certain endowments of them.

To begin with, creative capital begins most fundamentally with the people I call the “creative class.” The distinguishing characteristic of the creative class is that its members engage in work whose function is to “create meaningful new forms.” The super-creative core of this new class includes scientists and engineers, university professors, poets and novelists, artists, entertainers, actors, designers, and architects, as well as the “thought leadership” of modern society: nonfiction writers, editors, cultural figures, think-tank researchers, analysts, and other opinion-makers. Members of this super-creative core produce new forms or designs that are readily transferable and broadly useful, such as designing a product that can be widely made, sold, and used; coming up with a theorem or strategy that can be applied in many cases; or composing music that can be performed again and again.

Beyond this core group, the creative class also includes “creative professionals” who work in a wide range of knowledge-based occupations in high-tech sectors, financial services, the legal and health-care professions, and business management. These people engage in creative problem-solving, drawing on complex bodies of knowledge to solve specific problems. Doing so typically requires a high degree of formal education and thus a high level of human capital. People who do this kind of work may sometimes come up with methods or products that turn out to be widely useful, but that is not part of the basic job description. What they are required to do regularly is think on their own. They apply or combine standard approaches in unique ways to fit the situation, exercise a great deal of judgment, and at times must independently try new ideas and innovations.

According to my estimates, the creative class now includes some 38.3 million Americans, roughly 30 percent of the entire U.S. workforce—up from just 10 percent at the turn of the 20th century and less than 20 percent as recently as 1980. However, it is important to point out that my theory recognizes creativity as a fundamental and intrinsic human characteristic. In a very real sense, all human beings are creative and all are potentially members of the creative class. It is just that 38 million people—roughly 30 percent of the workforce—are fortunate enough to be paid to use their creativity in their work.

In my research I have discovered a number of trends that are indicative of the new geography of creativity. These are some of the patterns of the creative class:

- The creative class is moving away from traditional corporate communities, working class centers, and even many Sunbelt regions to a set of places I call “creative centers.”
- The creative centers tend to be the economic winners of our age. Not only do they have high concentrations of creative-class people, they have high concentrations of creative economic outcomes, in the form of innovations and high-tech industry growth. They also show strong signs of overall regional vitality, such as increases in regional employment and population.
CITIES AND THE CREATIVE CLASS

- The creative centers are not thriving due to traditional economic reasons such as access to natural resources or transportation routes. Nor are they thriving because their local governments have gone bankrupt in the process of giving tax breaks and other incentives to lure business. They are succeeding largely because creative people want to live there. The companies follow the people—or, in many cases, are started by them. Creative centers provide the integrated ecosystem or habitat where all forms of creativity—artistic and cultural, technological and economic—can take root and flourish.

- Creative people are not moving to these places for traditional reasons. The physical attractions that most cities focus on—sports stadiums, freeways, urban malls, and tourism-and-entertainment districts that resemble theme parks—are irrelevant, insufficient, or actually unattractive to many creative-class people. What they look for in communities are abundant high-quality experiences, an openness to diversity of all kinds, and, above all else, the opportunity to validate their identities as creative people.

THE NEW GEOGRAPHY OF CREATIVITY

These shifts are giving rise to powerful migratory trends and an emerging new economic geography. In the leading creative centers, the creative class makes up more than 35 percent of the workforce, regions such as the greater Washington, DC, region, the Raleigh-Durham area, Boston, and Austin. But despite their considerable advantages, large regions have not cornered the market as creative-class locations. In fact, a number of smaller regions have some of the highest creative-class concentrations in the nation—notably college towns such as East Lansing, Michigan, and Madison, Wisconsin.

At the other end of the spectrum are regions that are being bypassed by the creative class. Among large regions, Las Vegas, Grand Rapids, and Memphis harbor the smallest concentrations of the creative class. Members of the creative class have nearly abandoned a wide range of smaller regions in the outskirts of the South and Midwest. In small metropolitan areas such as Victoria, Texas, and Jackson, Tennessee, the creative class comprises less than 15 percent of the workforce. The leading centers for the working class among large regions are Greensboro, North Carolina, and Memphis, Tennessee, where the working class makes up more than 30 percent of the workforce. Several smaller regions in the South and Midwest are veritable working-class enclaves with 40 to 50 percent or more of their workforce in the traditional industrial occupations. These places have some of the most minuscule concentrations of the creative class in the nation. They are symptomatic of a general lack of overlap between the major creative-class centers and those of the working class. Of the 26 large cities where the working class comprises more than one-quarter of the population, only one, Houston, ranks among the top 10 destinations for the creative class.

Las Vegas has the highest concentration of the service class among large cities, 58 percent, while West Palm Beach, Orlando, and Miami also have around half of their total workforce in the service class. These regions rank near the bottom of the list for the creative class. The service class makes up more than half the workforce in nearly 50 small and medium-size regions across the country. Few of them boast any significant concentrations of the creative class, save as vacationers, and offer little prospect for upward mobility.
They include resort towns such as Honolulu and Cape Cod. But they also include places like Shreveport, Louisiana, and Pittsfield, Massachusetts. For these places that are not tourist destinations, the economic and social future is troubling to contemplate.

Places that are home to large concentrations of the creative class tend to rank highly as centers of innovation and high-tech industry. Three of the top five large creative-class regions are among the top five high-tech regions. Three of the top five large creative-class regions are also among the top five most innovative regions (measured as patents granted per capita). And, the same five large regions that top the list on the Talent Index (measured as the percentage of people with a bachelor's degree or above) also have the highest creative-class concentration: Washington, DC, Boston, Austin, the Research Triangle, and San Francisco. The statistical correlations comparing creative-class locations to rates of patenting and high-tech industry are uniformly positive and statistically significant.

TECHNOLOGY, TALENT, AND TOLERANCE

The key to understanding the new economic geography of creativity and its effects on economic outcomes lies in what I call the 3Ts of economic development: technology, talent, and tolerance. Creativity and members of the creative class take root in places that possess all three of these critical factors. Each is a necessary but by itself insufficient condition. To attract creative people, generate innovation, and stimulate economic development, a place must have all three. I define tolerance as openness, inclusiveness, and diversity to all ethnicities, races, and walks of life. Talent is defined as those with a bachelor's degree and above. And technology is a function of both innovation and high-technology concentrations in a region. My focus group and interview results indicate that talented individuals are drawn to places that offer tolerant work and social environments. The statistical analysis validates not only the focus group results, but also indicates strong relationships between technology, tolerance, and talent.

The 3Ts explain why cities such as Baltimore, St. Louis, and Pittsburgh fail to grow despite their deep reservoirs of technology and world-class universities: they are unwilling to be sufficiently tolerant and open to attract and retain top creative talent. The interdependence of the 3Ts also explains why cities such as Miami and New Orleans do not make the grade even though they are lifestyle meccas: they lack the required technology base. The most successful places—the San Francisco Bay area, Boston, Washington, DC, Austin, and Seattle—put all 3Ts together. They are truly creative places.

My colleagues and I have conducted a great deal of statistical research to test the creative capital theory by looking at the way these 3Ts work together to power economic growth. We found that talent or creative capital is attracted to places that score high on our basic indicators of diversity—the Gay, Bohemian, and other indexes. It is not because high-tech industries are populated by great numbers of bohemians and gay people; rather, artists, musicians, gay people, and members of the creative class in general prefer places that are open and diverse. Such low entry barriers are especially important because, today, places grow not just through higher birth rates (in fact virtually all U.S. cities are declining on this measure), but by their ability to attract people from the outside.

As we have already seen, human capital theorists have shown that economic growth is closely associated with concentrations of highly-educated people. But few studies have
specifically looked at the relationship between talent and technology, between clusters of educated and creative people and concentrations of innovation and high-tech industry. Using our measure of the creative class and the basic Talent Index, we examined these relationships for the 49 regions with more than one million people and for all 206 regions for which data are available. As well as some well-known technology centers, smaller college and university towns rank high on the Talent Index—places such as Santa Fe, Madison, Champaign-Urbana, State College, and Bloomington, Indiana. When I look at the sub-regional level, Ann Arbor (part of the Detroit region) and Boulder (part of the Denver region) rank first and third, respectively.

These findings show that both innovation and high-tech industry are strongly associated with locations of the creative class and of talent in general. Consider that 13 of the top 20 high-tech regions also rank among the top 20 creative-class centers, as do 14 of the top 20 regions for high-tech industry. Furthermore, an astounding 17 of the top 20 Talent Index regions also rank in the top 20 of the creative class. The statistical correlations between Talent Index and the creative-class centers are understandably among the strongest of any variables in my analysis because creative-class people tend to have high levels of education. But the correlations between the Talent Index and working-class regions are just the opposite—negative and highly significant—suggesting that working-class regions possess among the lowest levels of human capital.²

Thus, the creative capital theory says that regional growth comes from the 3Ts of economic development, and to spur innovation and economic growth a region must have all three of them.

THE ROLE OF DIVERSITY

Economists have long argued that diversity is important to economic performance, but they have usually meant the diversity of firms or industries. The economist John Quigley, for instance, argues that regional economies benefit from the location of a diverse set of firms and industries (Quigley, 1998, pp. 127–138). Jacobs long ago highlighted the role of diversity of both firms and people in powering innovation and city growth. As Jacobs saw it, great cities are places where people from virtually any background are welcome to turn their energy and ideas into innovations and wealth (Jacobs, 1961, 1969, 1984; see also Andersson, 1985, pp. 5–20; Desrochers, 2001).

This raises an interesting question. Does living in an open and diverse environment help to make talented and creative people even more productive; or do its members simply cluster around one another and thus drive up these places’ creativity only as a byproduct? I believe both are going on, but the former is more important. Places that are open and possess low entry barriers for people gain creativity advantage from their ability to attract people from a wide range of backgrounds. All else being equal, more open and diverse places are likely to attract greater numbers of talented and creative people—the sort of people who power innovation and growth.

LOW BARRIERS TO ENTRY

A large number of studies point to the role of immigrants in economic development. In The Global Me, the Wall Street Journal reporter Pascal Zachary argues that openness to
immigration is the cornerstone of innovation and economic growth. He contends that America’s successful economic performance is directly linked to its openness to innovative and energetic people from around the world, and attributes the decline of once prospering countries, such as Japan and Germany, to the homogeneity of their populations (Zachary, 2000).

My team and I examined the relationships between immigration or percent foreign born and high-tech industry. Inspired by the Milken Institute study, we dubbed this the Melting Pot Index. The effect of openness to immigration on regions is mixed. Four out of the top 10 regions on the Melting Pot Index are also among the nation’s top 10 high-technology areas; and seven of the top 10 are in the top 25 high-tech regions. The Melting Pot Index is positively associated with the Tech-Pole Index statistically. Clearly as University of California at Berkeley researcher Annalee Saxenian argues, immigration is associated with high-tech industry (Saxenian, 1999). However, immigration is not strongly associated with innovation. The Melting Pot Index is not statistically correlated with the Innovation Index, measured as rates of patenting. Although it is positively associated with population growth, it is not correlated with job growth. Furthermore, places that are open to immigration do not necessarily number among the leading creative-class centers. Even though 12 of the top 20 Melting Pot regions number in the top 20 centers for the creative class, there is no significant statistical relationship between the Melting Pot Index and the creative class.

THE GAY INDEX

Immigrants may be important to regional growth, but there are other types of diversity that prove even more important statistically. In the late 1990s, the Urban Institute’s Gary Gates, along with the economists Dan Black, Seth Sanders, and Lowell Taylor, used information from the U.S. Census of Population to figure out where gay couples located. He discovered that particular cities were favorites among the gay population.

The U.S. Census Bureau collects detailed information on the American population, but until the 2000 Census it did not ask people to identify their sexual orientation. The 1990 Census allowed couples that were not married to identify as “unmarried partners,” different from “roommates” or “unrelated adults.” By determining which unmarried partners were of the same sex, Gates identified gay and lesbian couples. The Gay Index divides the percentage of coupled gay men and women in a region by the percentage of the population that lives there and thus permits a ranking of regions by their gay populations. Gates later updated the index to include the year 2000.

The results of our statistical analysis on the gay population are squarely in line with the creative capital theory. The Gay Index is a very strong predictor of a region’s high-tech industry concentration. Six of the top 10 1990 and five of the top 10 2000 Gay Index regions also rank among the nation’s top 10 high-tech regions. In virtually all of our statistical analyses, the Gay Index did better any than other individual measure of diversity as a predictor of high-tech industry. Gays not only predict the concentration of high-tech industry, they also predict its growth. Four of the regions that rank in the top 10 for high-technology growth from 1990–1998 also rank in the top 10 on the Gay Index in both 1990 and 2000. In addition, the correlation between the Gay Index (measured in 1990) and the Tech-Pole Index calculated for 1990–2000 increases over time. This suggests that the benefits of diversity may actually compound.
CITIES AND THE CREATIVE CLASS

There are several reasons why the Gay Index is a good measure for diversity. As a group, gays have been subject to a particularly high level of discrimination. Attempts by gays to integrate into the mainstream of society have met substantial opposition. To some extent, homosexuality represents the last frontier of diversity in our society, and thus a place that welcomes the gay community welcomes all kinds of people.

THE BOHEMIAN INDEX

As early as the 1920 studies by Robert Park, sociologists have observed the link between successful cities and the prevalence of bohemian culture (Park et al., 1925). Working with my Carnegie Mellon team, I developed a new measure called the Bohemian Index, which uses Census occupation data to measure the number of writers, designers, musicians, actors, directors, painters, sculptors, photographers, and dancers in a region. The Bohemian Index is an improvement over traditional measures of amenities because it directly counts the producers of the amenities using reliable Census data. In addition to large regions, such as San Francisco, Boston, Seattle, and Los Angeles, smaller communities such as Boulder and Fort Collins, Colorado; Sarasota, Florida; Santa Barbara, California; and Madison, Wisconsin, rank rather highly when all regions are taken into account.

The Bohemian Index turns out to be an amazingly strong predictor of everything from a region’s high-technology base to its overall population and employment growth. Five of the top 10 and 12 of the top 20 Bohemian Index regions number among the nation’s top 20 high-technology regions. Eleven of the top 20 Bohemian Index regions number among the top 20 most innovative regions. The Bohemian Index is also a strong predictor of both regional employment and population growth. A region’s Bohemian presence in 1990 predicts both its high-tech industry concentration and its employment and population growth between 1990 and 2000. This provides strong support for the view that places that provide a broad creative environment are the ones that flourish in the Creative Age.

TESTING THE THEORIES

Robert Cushing of the University of Texas has undertaken to systematically test the three major theories of regional growth: social capital, human capital, and creative capital. His findings are startling. In a nutshell, Cushing finds that social capital theory provides little explanation for regional growth. Both the human capital and creative capital theories are much better at accounting for such growth. Furthermore, he finds that creative communities and social capital communities are moving in opposite directions. Creative communities are centers of diversity, innovation, and economic growth; social capital communities are not.

Cushing went to great pains to replicate Putnam’s data sources. He looked at the surveys conducted by a team that, under Putnam’s direction, did extensive telephone interviewing in 40 cities to gauge the depth and breadth of social capital. Based on the data, Putnam measured 13 different kinds of social capital and gave each region a score for attributes like “political involvement,” “civic leadership,” “faith-based institutions,” “protest politics,” and “giving and volunteering.” Using Putnam’s own data, Cushing found very little evidence of a decline in volunteering. Rather, he found that volunteering was up in recent years. People were more likely to engage in volunteer activity in the late 1990s than
they were in the 1970s. Volunteering by men was 5.8 percent higher in the five-year period 1993-1998 than it had been in the period 1975-1980. Volunteering by women was up by 7.6 percent. A variety of statistical tests confirmed these results, but Cushing did not stop there. He then combined this information on social capital trends with independent data on high-tech industry, innovation, human capital, and diversity. He added the Milken Institute’s Tech-Pole Index, the Innovation Index, and measures of talent, diversity, and creativity (the Talent Index, the Gay Index, and the Bohemian Index). He grouped the regions according to the Tech-Pole Index and the Innovation Index (their ability to produce patents).

Cushing found that regions ranked high on the Milken Tech-Pole Index and Innovation Index ranked low on 11 of Putnam’s 13 measures of social capital. High-tech regions scored below average on almost every measure of social capital. High-tech regions had less trust, less reliance on faith-based institutions, fewer clubs, less volunteering, less interest in traditional politics, and less civic leadership. The two measures of social capital where these regions excelled were “protest politics” and “diversity of friendships.” Regions low on the Tech-Pole Index and the Innovation Index were exactly the opposite. They scored high on 11 of the 13 Putnam measures but below average on protest politics and diversity. Cushing then threw into the mix individual wages, income distribution, population growth, numbers of college-educated residents, and scientists and engineers. He found that the high-tech regions had higher incomes, more growth, more income inequality, and more scientists, engineers, and professions than their low-tech, but higher social capital counterparts. When Cushing compared the Gay and Bohemian Indexes to Putnam’s measures of social capital in the 40 regions surveyed in 2000, the same basic pattern emerged: Regions high on these two diversity indexes were low on 11 of 13 of Putnam’s categories of social capital. In Cushing’s words, “conventional political involvement and social capital seem to relate negatively to technological development and higher economic growth.” Based on this analysis, Cushing identified four distinct types of communities. The analysis is Cushing’s; the labels are my own.

- **Classic Social Capital Communities.** These are the places that best fit the Putnam theory—places such as Bismarck, North Dakota; rural South Dakota; Baton Rouge, Louisiana; Birmingham, Alabama; and Greensboro, Charlotte, and Winston-Salem, North Carolina. They score high on social capital and political involvement but low on diversity, innovation, and high-tech industry.

- **Organizational Age Communities.** These are older, corporate-dominated communities such as Cleveland, Detroit, Grand Rapids, and Kalamazoo. They have average social capital, higher-than-average political involvement, low levels of diversity, and low levels of innovation and high-tech industry. They score high on my Working Class Index. In my view, they represent the classic corporate centers of the organizational age.

- **Nerdistsans.** These are fast-growing regions such as Silicon Valley, San Diego, Phoenix, Atlanta, Los Angeles, and Houston, lauded by some as models of rapid economic growth but seen by others as plagued with sprawl, pollution, and congestion. These regions have lots of high-tech industry, above-average diversity, low social capital, and low political involvement.

- **Creative Centers.** These large urban centers, such as San Francisco, Seattle, Boston, Chicago, Minneapolis, Denver, and Boulder, have high levels of innovation and
high-tech industry and very high levels of diversity but lower than average levels of social capital and moderate levels of political involvement. These cities score highly on my Creativity Index and are repeatedly identified in my focus groups and interviews as desirable places to live and work. That’s why I see them as representing the new creative mainstream.

In the winter of 2001, Cushing extended his analysis to include more than three decades of data for 100 regions. Again he based his analysis on Putnam’s own data sources: the 30-year time series collected by DDB Worldwide, the advertising firm, on activities such as churchgoing, participation in clubs and committees, volunteer activity, and entertaining people at home. He used these data to group the regions into high and low social capital communities and found that social capital had little to do with regional economic growth. The high social capital communities showed a strong preference for “social isolation” and “security and stability” and grew the least—their defining attribute being a “close the gates” mentality. The low social capital communities had the highest rates diversity and population growth.

Finally, Cushing undertook an objective and systematic comparison of the effect of the three theories—social capital, human capital, and creative capital—on economic growth. He built statistical models to determine the effect of these factors on population growth (a well-accepted measure of regional growth) between 1990 and 2000. To do so, he included separate measures of education and human capital; occupation, wages, and hours worked; poverty and income inequality; innovation and high-tech industry; and creativity and diversity for the period 1970–1990.

Again his results were striking. He found no evidence that social capital leads to regional economic growth; in fact the effects were negative. Both the human capital and creative capital models performed much better, according to his analysis. Turning first to the human capital approach, he found that while it did a good job of accounting for regional growth, “the interpretation is not as straightforward as the human capital approach might presume.” Using creative occupations, bohemians, the Tech-Pole Index, and innovations as indicators of creative capital, he found the creative capital theory produced formidable results, with the predictive power of the Bohemian and Innovation Indexes being particularly high. Cushing concluded that the “creative capital model generates equally impressive results as the human capital model and perhaps better.”

DIRECTIONS FOR FUTURE RESEARCH

The nature and function of the city is changing in ways and dimensions we could scarcely have expected even a decade or two ago. For much of the past century the city has been viewed as a center for physical production and trade, industrialization, and the agglomeration of finance, service, and retail activities. Our theories of the city are all based on the basic notion of the city as an arena for production and largely based on activities that take place in the city during the daylight hours. Similarly, our theories of community are largely based on notions of the tightly knit community of the past, a community defined by strong ties—a conceptual theme that has been revived by the work of Robert Putnam and widespread interest in social capital both inside academe and in public policy circles.
But, as this article has tried to show, the past decade has seen a sweeping transformation in the nature and functions of cities and communities. My own field research, as well as the research of others, has shown the preference for weak ties and quasi-anonymity. Social capital is at best a limited theory of community—one that fits uneasily with many present-day realities. Magically invoking it will not somehow recreate the stable communities characterized by strong ties and commitments of the past. On this score, the key is to understand the new kinds of communities—communities of interest—that are emerging in an era defined by weak ties and contingent commitments. Much more research is needed on these and related issues.

Our theories of cities, neighborhoods, and urban life are undergoing even more sweeping transformation. Sociologists such as Terry Clark, Richard Lloyd, and Leonard Neuvarez have been dissecting the new reality of the city as a center for experience, lifestyle, amenities, and entertainment (see, e.g., Lloyd and Clark, 2001, pp. 357–378; Lloyd, 2001; Glaeser, Kolko, and Saiz, 2001, pp. 27–50; Neuvarez, 2003). This shift is not only noticeable in cities such as San Francisco, Seattle, and Boston, which have long been centers of culture and lifestyle, but in older industrial cities such as Chicago, which have been dramatically transformed into centers of entertainment, experience, and amenity. According to Clark, entertainment has replaced manufacturing and even services as Chicago’s “number 1” industry. Understanding the city as an arena for consumption, for entertainment, and for amenities—a city that competes for people as well as for firms, a city of symbols and experiences, the city at night—is a huge research opportunity for sociology, geography, and related disciplines.

At the organizational level, there is a great need for research on the factors that motivate creative people and how organizations and workplaces can adapt. We are at the very infancy of organizational and workplace experiments on how to motivate creative people. Recent experiments with open office design, flexible schedules, and various accoutrements are only the very beginning. Research on the psychology of creativity by Teresa Amabile (1996), Robert Sternberg (1999), and others shows that creativity is an intrinsically motivated process and further suggests that the use of extrinsic rewards, such as financial incentives, may actually be counterproductive to motivating creative work. This suggests that both academic economists and professional managers have gone off in the wrong direction, particularly during the 1990s, with the use of stock options and other forms of equity compensation to motivate creative workers. A great deal more research is needed on the intrinsic factors that motivate creative workers and, even more importantly, on the characteristics and factors associated with organizations and workplaces that can best motivate and enhance creative work.

Turning now to larger macrosocietal questions. The past several decades have seen a dramatic shift in the underlying nature of advanced capitalist economies, from a traditional industrial-organizational system based on large factories and large corporate office towers, and premised on economies of scale and the extraction of physical labor, to newer, emergent systems based on knowledge, intellectual labor, and human creativity. Understanding the underlying dynamics of the system, the social structures on which it rests, the kinds of workplace transformations it is setting in motion, and its effects on community as well as city form, structure, and function is a tremendous opportunity for research. In The Rise of the Creative Class I try to identify some of these underlying changes and the structural transformations they have set in motion as workplaces, lifestyles, and communities all
begin to adapt and evolve in light of these deep economic and social shifts. That work is my best first pass, but there is much, much more to do.

A final and critically important avenue for research is to begin to get a handle on the downsides, tensions, and contradictions of this new Creative Age—and there are many. One that I am exploring with my team is rising inequality. Our preliminary investigations suggest that inequality is increasing at both the inter-regional and intra-regional scales. At the inter-regional level, increased inequality appears to be a consequence of what we have come to call the “new great migration” as creative-class people relocate to roughly a dozen key creative regions nationwide. Other preliminary research, for example, by Robert Cushing at the University of Texas, suggests that Austin is importing high-skill creative-class people and exporting lower-skill individuals. The same pattern appears to hold for other creative centers. Inequality is also on the rise within regions. Preliminary research I have conducted with Kevin Stolarick indicates that inequality is highest in creative centers such as San Francisco and Austin. Then there is the question of the relationship between knowledge-based, creative capitalism and new types of workplace injury. At the turn of the century, during the explosion of industrial capitalism, there was great incidence and, later, great concern over physical injuries in the workplace. Eventually, after much examination and policy debate, there emerged mechanisms like OSHA to reduce physical injury in the workplace. In the Creative Age, when the mind itself becomes the mode of production, so to speak, the nature of workplace injury has changed to what I term “mental injury.” Sociologists and social psychologists have much to offer in identifying the factors associated with the increasing incidence of anxiety disorder, depression, substance abuse, and other forms of mental injury, and their relationship to creative work. I often make an analogy to Charlie Chaplin’s *Modern Times*: The creative-class worker racing frantically to keep up with e-mails, telephone calls, and other aspects of information overload resembles Chaplin’s assembly-line worker frantically trying to keep up with the assembly line—but the creative-class worker has to do this on a 24/7, around-the-clock-basis. A great deal of research needs to be done on the incidence of mental injury and its relationship to new ways of working.

It will take a great deal more research to get a better handle on these underlying transformations and the economic and social shifts they have set in motion. I welcome the opportunity to contribute to this evolving understanding and to engage in a constructive dialogue with my colleagues across the social sciences, as we endeavor to better understand the rapidly changing social world in which we live.

Notes

1 Sometimes, I think Putnam’s social capital world bears a bit of similarity to the world of Sinclair Lewis’s *Babbitt*—a conformist world where clubs and voluntary organizations were less the product of civic-mindedness and more about getting ahead and securing status. Writes Lewis:

Of a decent man in Zenith it was required that he should belong to one, or preferably two or three, of the numerous lodges and prosperity-boosting lunch-clubs; to the Rotarians, the Kiwanis, or the Boosters; to the Oddfellows, Moose, masons Red Men, Woodmen, Owls, Eagles, Maccabees, Knights of Pythias, Knights of Columbus, and other secret orders characterized by a high degree of heartiness, sound morals and reverence to the Constitution. (Lewis, 1922)

2 The high-tech leaders are San Francisco, Boston, Seattle, Los Angeles, and Washington, DC; the innovation leaders are Rochester, San Francisco, Austin, Boston, and the Research Triangle.
References

The Entrepreneurial Propensity of Women

Nan Langowitz
Maria Minniti

Entrepreneurship is becoming an increasingly important source of employment for women across many countries. The level of female involvement in entrepreneurial activity, however, is still significantly lower than that of men. We take a behavioral economics approach and, using a large sample of individuals in 17 countries, we investigate what variables influence the entrepreneurial propensity of women and whether those variables have a significant correlation with differences across genders. In addition to demographic and economic variables, we include a number of perceptual variables. Our results show that subjective perceptual variables have a crucial influence on the entrepreneurial propensity of women and account for much of the difference in entrepreneurial activity between the sexes. Specifically, we find that women tend to perceive themselves and the entrepreneurial environment in a less favorable light than men across all countries in our sample and regardless of entrepreneurial motivation. Our results suggest that perceptual variables may be significant universal factors influencing entrepreneurial behavior.

Introduction

The last few decades have seen a proliferation of studies concerned with women’s entry in the labor force, pay differential across genders, work–family issues, and gender disparities in the workplace (e.g., see Goldin, 1990). Relatively less attention has been paid to women’s propensity toward entrepreneurship, although recent studies have found that the rate at which women are forming businesses has increased significantly (Center for Women’s Business Research, 2004). In spite of this increase, important differences still exist in the levels of new firm creation across genders, and studies have shown that the number of women involved in starting a business is significantly and systematically lower than that of men (Delmar & Davidsson, 2000; Minniti, Arenius, & Langowitz, 2005).

It is widely recognized that women play an important role in the growth process of a country (Minniti et al., 2005). There is also broad agreement that new business creation is a fundamental component of the growth process (Acs, Arenius, Hay, & Minniti, 2005). If women are important for growth and entrepreneurship is important for growth, it is particularly important that we understand what factors mobilize or prevent women from starting new businesses. Failure to understand these factors may result in the underutilization of women’s human capital and, as a result, in the perpetuation of lower living standards and in the implementation of costly and ineffective policies. But what factors influence the entrepreneurial propensity of women? Are those factors universal or country/

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context specific? And are those factors associated with the observed differences in entrepreneurial behavior across genders?

Existing research has shown the importance of sociodemographic factors such as age, income, work status, and education in explaining entrepreneurial behavior and some of the related gender differences. However, no clear understanding exists of the generality of such causes and of whether these differences result exclusively from country-specific factors or are, instead, rooted at least in part in universal phenomena. Within this context, we take a behavioral economics approach (Simon, 1955) that allows us to combine the rigor of economic analysis with insight provided by recent development in psychology, and study the interaction between sociodemographic and perceptual variables across a broad range of country contexts and on a large scale.

In this article, we use individual-level survey data collected in 2001 for the Global Entrepreneurship Monitor (GEM) Project. Data consist of a stratified representative sample of at least 2,000 individuals per country in 17 countries. Our dependent variables consider whether individuals are involved in starting a new business and the reasons why they chose to do so. Our independent variables include sociodemographic characteristics and perceptual variables. Using binary choice multivariate probit models, we test for the relative importance of these variables on women’s decisions and try to see which, if any, of these variables explain gender differences with regard to the creation of new businesses. Although studies of gender differences with respect to entrepreneurial behavior already exist, because of the size and scope of our sample, our work adds new breadth to this important research question. More importantly, most existing studies use data on established businesses. As a result, they are affected by survival bias. Our data, instead, are remarkably well suited for the study of entrepreneurial propensity since they are collected at the time the respondent is in the process of starting a business. They are, therefore, free from both survival and hindsight biases.

Our contribution to the literature is threefold. First, we contribute to our understanding of what factors influence women’s propensity to start businesses. Second, thanks to the size of our data set, we are able to establish whether such factors are universal, i.e., cross country, and whether they account for a large portion of gender differences with respect to entrepreneurial behavior. Third, we provide an original contribution to recent developments in behavioral economics by providing a test of the importance of subjective perceptions that, due to the lack of data, is usually confined to experimental settings. Overall, our results suggest the existence of factors whose influence transcends the traditional explanations of differences in behavior across gender based on cultural or social norms. Everything else being the same, women appear to perceive themselves and their business environment in a less positive light than men. We show these differences to be consistent and systematic across all countries in our sample.

Theoretical Overview and Hypotheses Development

In neoclassical economic theory, it is assumed that decision makers, given their knowledge of probabilities, alternatives, and outcomes, can calculate which alternative yields the greatest personal utility. To complement this view, behavioral economics is a combination of psychology and economics that investigates what happens when decision makers display limitations and complications and are, as a result, not necessarily able to select their best options. In other words, behavioral economics uses rational choice models that take into account the cognitive limitations of both knowledge and learning ability. Furthermore, behavioral economics show that less than perfect alternatives may
nonetheless appeal to individuals in the market and thereby may influence the economy. Indeed, bounded rationality, a central theme in behavioral economics, is concerned with the ways in which the actual (as opposed to strictly rational) decision-making process influences the decisions that are eventually reached (Kahnemann, Slovic, & Tversky, 1982; Simon, 1955). Research in behavioral economics has adopted specific methodological approaches that complement traditional statistical and econometric tests. For example, experiments are often used in behavioral economics, while survey data have become more commonly used in economic studies about individuals’ actual decision-making processes. Because of its nature, entrepreneurship lends itself well to a behavioral economics approach. Thus, we take this approach and combine sociodemographic variables with subjective perceptual variables to investigate which factors are more strongly linked to the entrepreneurial propensity of women.

Starting a new business is a complex decision, and scholars in several disciplines have focused on a variety of factors potentially contributing to an individual’s propensity to start a business (Gartner, 1985). Several studies have shown that the decision to start a business is far more complex for females than males and that women tend to be more sensitive than men to a variety of nonmonetary issues (Bird & Brush, 2002; Burke, FitzRoy, & Nolan, 2002). Brush (1990, 1992), however, observed that self-employed men and women differ very little with respect to demographic and psychological skills, while more pronounced differences seem to exist in business goals and management styles.

Arenius and Minniti (2005) propose grouping factors influencing entrepreneurial decisions into three main groups: sociodemographic factors, perceptual variables, and contextual factors. We follow the same logic. With respect to sociodemographic characteristics, Evans and Jovanovic (1989) and Smallbone and Welter (2001), among others, have shown entrepreneurial decisions to be positively related to individuals’ incomes since the availability of income weakens financial constraints. Along similar lines, Carter and Rosa (1998) and Carter, Williams, and Reynolds (1997) have discussed specifically the role of financial constraints for women entrepreneurs. Blanchflower and Oswald (1998) and Taylor (1996) have shown the importance of work status, and general agreement exists that employed individuals are more likely to start new businesses. This has been shown to apply to both men and women across countries (Acs et al., 2005; Minniti et al., 2005). Coate and Tennyson (1992) and Levesque and Minniti (2006) have shown the existence of an inverted U-shaped relationship between age and involvement in starting a new business. For both men and women, the most entrepreneurially active period has been shown to be between 25 and 34 years of age and declining thereafter (Reynolds, Bygrave, & Hay, 2003). Finally, no clear evidence has yet been found on the relationship between education and entrepreneurship (Blanchflower, 2004), although basic literacy seems to be a requirement for starting a new business for both men and women (Reynolds et al., 2003). Some evidence also exists in some developed countries that women entrepreneurs attain a higher education level than their male counterparts and that their overall level of education is significantly higher than in other occupations (Cowling & Taylor, 2001).

On the basis of this literature, we suggest:

**Hypothesis 1:** Across all countries in our sample, age, income, employment status, and education are all significant in determining women’s propensity to start new businesses.

Sociodemographic characteristics have also been analyzed by looking at human and social capital. Davidsson and Honig (2003) have shown that social capital is a robust predictor for the likelihood of starting a business and for advancing successfully through
the start-up process. Greene (2000) has analyzed self-employed women by looking at their human and social capital, and has provided similar evidence. In this area, of particular relevance are studies on the influence of formal and informal networks (Aldrich, 1999; Aldrich & Martinez, 2001), as well as works on the importance of role models (Wagner & Sternberg, 2004; Walstad & Kourilsky, 1998) for entrepreneurial decisions. Langowitz, Sharpe, and Godwyn (2006) have found networks and role models to be particularly appreciated by women involved in various stages of the entrepreneurial process. Thus, we suggest:

**Hypothesis 2:** Across all countries in our sample, knowing other entrepreneurs is positively correlated to women’s propensity to start new businesses.

Our intent to develop a behavioral economics test of entrepreneurial propensity among women puts, necessarily, particular emphasis on factors that influence people’s subjective perceptions. In fact, perceptual variables have often been included in studies of new business creation (Gatewood, Shaver, & Gartner, 1995), and there is general agreement that opportunity perceptions, risk tolerance, and self-confidence are all highly correlated to the decision to start a new business (Arenius & Minniti, 2005; Koellinger, Minniti, & Schade, 2005). An increasing number of scholars agree that opportunity recognition represents the most distinctive and fundamental entrepreneurial behavior (Eckhardt & Shane, 2003; Shane & Venkataraman, 2000). In fact, entrepreneurs are individuals who are more likely than others to be “alert” to the identification and exploitation of profit opportunities (Kirzner, 1973, 1979). Thus, we suggest:

**Hypothesis 3:** Across all countries in our sample, alertness to existing opportunities is positively correlated to women’s propensity to start new businesses.

Entrepreneurs have also been shown to be individuals able to deal with risky situations. In this context, there is some evidence supporting the idea that women have low risk tolerance when making financial decisions (Jianakoplos & Bernasek, 1998). Also, when asked about their attitudes, women report a lower propensity toward risk than men (Johnson & Powell, 1994) and appear to be more risk averse than men when gambling (Levin, Snyder, & Chapman, 1988). Wagner (2004) has found that fear of failure is indeed an important determinant of the difference in rate of new business creation between men and women. The idea that women have low risk tolerance has also been used to explain alleged low growth rates in female-owned companies (Johnson & Powell, 1994). Thus, we suggest:

**Hypothesis 4:** Across all countries in our sample, fear of failure is negatively correlated to women’s propensity to start new businesses.

Last, the role of self-confidence on entrepreneurial decisions has also been extensively studied. New business formation is a complex and demanding task requiring personal perseverance. Markman, Balkin, and Baron (2002) and Markman, Baron, and Balkin (2005) have shown that entrepreneurs and nonentrepreneurs differ on such attributes, and that entrepreneurs score significantly higher on self-confidence. Also, Boyd and Vozikis (1994) have shown that individual self-confidence, defined as individuals’ belief in their capability to perform a task, influences the development of both entrepreneurial intentions and actions or behaviors. Confidence in one’s own skills, knowledge, and ability to start a new business increases entrepreneurial alertness and, therefore, leads to the creation of more new businesses (Verheul, Uhlman, & Thurik, 2003). Thus, we suggest:
Hypothesis 5: Across all countries in our sample, the subjective belief of having adequate skills and knowledge is positively correlated to women’s propensity to start new businesses.

Because of our behavioral approach, we take the possibility of heuristic and biased decision-making processes seriously. Within this context, we hypothesize that people may start new ventures to pursue a perceived opportunity (real or imagined), or because they have no better employment alternatives and expect, on average, to find differences in the relative importance of variables between these two groups. The first group may be described as opportunity entrepreneurs, the second group as necessity entrepreneurs (Acs et al., 2005; Reynolds et al., 2003). Their motivations differ, so it may be expected that the variables influencing their decision making may also differ. For example, in many developing countries, where unemployment protection is low or nonexisting, individuals may be forced into starting a business by an inadequate labor market. This is particularly true for women who tend to be poorer, less educated, and often, for cultural reasons, have reduced access to established channels of employment. The reasons behind the choice of those women are very different from those motivating individuals who choose to start businesses in order to exploit an opportunity in spite of having access to alternative income-producing activities. Fear of failure may not be very important to them. In other words, we hypothesize that the main correlates of entrepreneurial behavior may change depending on the reasons that cause women to start a new business (necessity versus opportunity). Thus, we suggest:

Hypothesis 6: Across all countries in our sample, the relative importance of sociodemographic and/or perceptual variables to the entrepreneurial propensity of women is contingent on entrepreneurial motivation.

In addition to establishing which variables correlate to the entrepreneurial propensity of women, we want to establish whether these variables also exhibit a significant correlation with differences across genders. For example, Minniti and Nardon (forthcoming) use a nonparametric approach based on a novel form of equalized bootstrapping and 2002 GEM data for 37 countries to show that, although work status and education have some minor gender-specific impact, the relationships between the likelihood of starting a business and age, household income, work status, and education do not depend on gender as previously believed. They do find, however, evidence that perceptual variables account for some of the gender differences in entrepreneurial behavior. In other words, in addition to establishing the influence of a set of factors on the entrepreneurial behavior of women, we now wish to establish whether the influence of these factors differs across genders thereby contributing to our understanding of different entrepreneurial prevalence rates between men and women. Thus, we suggest:

Hypothesis 7: Across all countries in our sample, sociodemographic variables explain a significant portion of the differences in the propensity to start a business across genders.

Hypothesis 8: Across all countries in our sample, knowing other entrepreneurs explains a significant portion of the differences in the propensity to start a business across genders.

And

Hypothesis 9: Across all countries in our sample, perceptual variables explain a significant portion of the differences in the propensity to start a business across genders.
Finally, it is reasonable to hypothesize that if the factors more significantly correlated to entrepreneurial propensity are sensitive to motivation, then part of the observed differences in entrepreneurial propensity across genders may be explained by differences in motivation and in the relative importance of its covariates. Thus:

**Hypothesis 10:** Across all countries in our sample, difference in the relative entrepreneurial propensity of men and women is contingent upon differences in entrepreneurial motivations.

**Data and Method**

Our hypotheses aim at investigating what variables influence the entrepreneurial propensity of women and whether these variables have a significant and systematic relation with differences across genders. We are also interested in the universality of those relationships, which requires the use of a large number of highly comparable observations. These observations should also be available for several countries with different characteristics so as to be representative of a variety of macroeconomic contexts. The data set provided by the GEM project is exceptionally well suited for this purpose. The GEM project provides data that allow estimates of the prevalence rates of entrepreneurial propensity in various countries.\(^1\) Data used in this article were collected during spring 2001. For our purposes, complete data were available for 17 countries.\(^2\) In each country, a standardized survey was administered to a representative sample of at least 2,000 adults (18–64 years old) yielding a final cross-country total of 24,131 individuals for whom complete data were available for our purposes.\(^3\)

To measure entrepreneurial propensity, we identified individuals in the process of starting a business (*nascent entrepreneurs*). Survey respondents were asked whether at the time of the interview, they were alone or with others, trying to start a business, including any self-employment or the sale of goods or services to others. Respondents who answered affirmatively were then asked if, over the 12 months preceding the interview, they had done anything to help start a business (such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, etc.), and whether they would personally own all, part, or none of this business. These additional questions were used to separate those who were truly committed to a new venture from those thinking about but not yet committed to it, and to separate managers from entrepreneurs. Only respondents who answered “yes” to the first follow-up question and “all” or “part” to the second follow-up question were coded as nascent entrepreneurs. Thus, in this article, a nascent entrepreneur is defined as an individual who is in the process of starting a business, has committed resources to it, and expects to own at least part of it. In addition, individuals classified as nascent entrepreneurs were asked whether they engaged in the new venture to take advantage of a business opportunity (opportunity

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1. More details about the GEM project may be found at http://www.gemconsortium.org.
2. Countries included in our sample were Argentina, Canada, Denmark, Finland, Germany, Hungary, India, Israel, Japan, New Zealand, Poland, Portugal, Russia, Singapore, South Korea, Sweden, and the United States. The countries included in our sample spanned a variety of cultural, religious, and social backgrounds. This was very desirable for our study. In fact, our purpose was not to discuss differences across countries but, instead, to point out similarities of behavior across gender in spite of contextual differences. As mentioned earlier in the article, we are interested in universal traits of entrepreneurial behavior.
3. Details about the procedures used to collect and harmonize GEM data can be found in Reynolds, Bosma, and Autio (2005).
nascent entrepreneurs) or because they had no better employment choices (necessity nascent entrepreneurs). More than 95% of the respondents were successfully classified into one of these two categories. The Appendix provides further details about the survey questions and all dependent variables used in the article.

On average, in our sample, nearly twice as many men as women were involved in starting a business, 1.7 men for every woman, and the differences across genders were statistically significant overall and for each individual country. Our study consisted in presenting a set of alternative models estimating the likelihood of an individual being a nascent entrepreneur (suboamw) given a set of his or her characteristics. Independent variables included country of residence (name of country), age (age), educational attainment (gemeduc), work status (workstatus), household income (gemhhinc), and whether the respondent knew other entrepreneurs at the time of the interview (knowent). In models wherein men and women were considered together (pooled sample), the dummy gender is also included.

In addition, the models include a set of perceptual variables capturing subjective, and therefore possibly biased, evaluations of the respondents about themselves and their entrepreneurial environment. Suskill describes the subjective assessment of one’s own skills, knowledge, and ability with respect to starting a new business. Opport describes a personal assessment of the existence of opportunities. Finally, fearfail describes the extent to which fear of failing affects the behavior of a person with respect to starting a business. Detailed definitions for all independent variables used in the analysis are also provided in the Appendix.

Finally, Jack and Anderson (2002) and deBruin and Dupuis (1999), among others, have shown that new firm creation is not merely an economic process but is embedded in a specific environment. Also, Chell and Baines (2000) have shown that entrepreneurial decisions differ because of effects of the environment in which they are taken. Thurik, Uhlancer, and Wennekers (2002) have provided a detailed analysis of aggregate conditions influencing nascent entrepreneurship and argued that technology, level of economic development, culture, and institutions all influence the demand for entrepreneurship by creating opportunities available for start-ups. Unfortunately, mainly because of the lack of data, relatively little work exists that allows researchers to correct for the specific influence of macroeconomic factors on the characteristics and motivations of women involved in starting new businesses. Because of the size of our data set, we were able to control for country effects by introducing country dummies. It should be noticed that our argument does not deny the existence of country (context) effects and is, in fact, complementary to it. Our argument is perfectly consistent with the idea that country effects exist. We contribute to that literature by showing that country effects are not the entire story and that some behavioral heuristics and biases exist and are important independently from context, although their intensity and direction may be influenced by country-specific institutions.

Because of the type of data in our sample and the nature of our hypotheses, we chose to use econometric techniques and, specifically, probit models. Similar to regression analysis, probit models extend the principles of generalized linear models to better treat the case of dichotomous and polytomous dependent variables. In fact, probit models are extensions of the standard log-linear model and allow the study of a mixture of categorical and continuous independent variables with respect to a categorical dependent variable. The probit technique is also the most parsimonious model capable of yielding estimates not significantly different from the saturated model that fully but trivially accounts for the distribution of available data. Probit models are, as a result, very useful in the study of yes/no dependent variables, as is the case in this article.
Table 1

Correlation Table

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Suboanv</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2 Age</td>
<td>37.63</td>
<td>-0.041***</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Gender</td>
<td>1.6</td>
<td>-0.070***</td>
<td>0.019***</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4 Workstatus</td>
<td>2.13</td>
<td>0.050***</td>
<td>-0.030***</td>
<td>-0.199***</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5 Gemeduc</td>
<td>3.28</td>
<td>0.005</td>
<td>-0.079***</td>
<td>0.010</td>
<td>0.060***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Gemhhinc</td>
<td>2.10</td>
<td>-0.029***</td>
<td>0.002</td>
<td>0.040***</td>
<td>-0.050***</td>
<td>0.300***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Opport</td>
<td>0.34</td>
<td>0.143***</td>
<td>-0.041***</td>
<td>-0.088***</td>
<td>0.079***</td>
<td>0.005</td>
<td>-0.059***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Suskill</td>
<td>0.38</td>
<td>0.199***</td>
<td>0.029***</td>
<td>-0.176***</td>
<td>0.143***</td>
<td>0.027***</td>
<td>-0.082***</td>
<td>0.222***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Fearfail</td>
<td>0.37</td>
<td>-0.061***</td>
<td>-0.016***</td>
<td>0.049***</td>
<td>0.001</td>
<td>-0.021***</td>
<td>0.062***</td>
<td>-0.041***</td>
<td>-0.109***</td>
<td></td>
</tr>
<tr>
<td>10 Kownent</td>
<td>0.31</td>
<td>0.149***</td>
<td>-0.112***</td>
<td>-0.131***</td>
<td>0.100***</td>
<td>0.015***</td>
<td>0.079***</td>
<td>0.237***</td>
<td>0.245***</td>
<td>-0.015***</td>
</tr>
</tbody>
</table>

Technically, probit methods differ from standard regressions because they substitute the standard OLS estimation with a maximum likelihood estimation of a link function for the dependent variable. The use of probit is also desirable since the reported coefficients can be read as the change in probability when the dummy variables change from 0 to 1 and, therefore, the results are easy to interpret. In our tables, e.g., dF/dx indicates a discrete change of the dummy variable from 0 to 1. We tested seven probit models. All co-variables in all models were dummies. Testing several models, i.e., running separate regressions for various specifications of our argument, also allowed us to assess the reliability of our results by internal replication.

In each model, we controlled for country of origin (name of country—reference category: United States), household income (gemhhinc—reference category: lowest 33%), age (age—reference category: 25–34 cohort), educational attainment (gemeduc—reference category: some secondary schooling), work status (workstatus), and for knowing other entrepreneurs (kownent). We also included perceptual variables by controlling for fearfail, suskill, and opprot.

Table 1 shows correlation coefficients across all variables in the article for the pooled sample (men plus women). Eight of the nine independent variables have a strong correlation (p < .001) with suboanv. Table 1 shows that entrepreneurial propensity is positively related to being male, being employed regardless of gender, knowing other entrepreneurs, and having positive perceptions of one’s own skills and existing opportunities, but it is negatively correlated with age and fear of failure. Table 1 also alerts us to the presence of collinearity among the independent variables, although the introduction of several interaction terms in our probit analyses did not increase the fit of any of the models.

Using probit models, we tested all our hypotheses simultaneously rather than sequentially. This had the advantage of avoiding ad hoc assumptions about causality and sequence of relationships among variables that, given the cross-country nature of our data, we could not test for.

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4. Although some quantitative differences exist, correlation matrixes corresponding to men only and women only show the same qualitative results and very similar levels of significance across all variables.
Results

Results of our analysis are presented in Tables 2–4. Table 2 shows three alternative models testing which factors are more significant with respect to women’s entrepreneurial propensity. Model 1 shows the results of a probit model in which all women in our sample are considered. Model 2 shows the results of a probit model in which only women who are involved in starting a business for opportunity reasons are considered. Model 3 shows the results of a probit model in which only women who are involved in starting a business for necessity reasons are considered. Table 3 complements Table 2 and shows the same results for men. Finally, Table 4 shows results for the pooled sample, in other words, for the case in which men and women are considered together. In particular, in Model 7, we replicated the previous models but added a dummy for gender (gender) in order to capture gender effects.

The analysis of Table 2 allows us to test our first six hypotheses. First, Table 2 shows that, in our sample, age, work status, income level, and education have no significant relationship to women’s propensity to start businesses. Overall, we find no support for hypothesis 1. In fact, in all three models, none of the considered variables shows a significant coefficient except in four specific cases when the sample is segregated by motivation. In Model 1, where all women are considered, the signs of all coefficients are consistent with existing theory, but none of them is significant. In Model 2, wherein women who are starting a business to pursue an opportunity are considered, having higher incomes and higher education levels (up to but not including graduate work) increases the likelihood of starting a business. Consistent with existing literature, this suggests that women with more financial resources and more education are equipped better than others to pursue unexploited opportunities. In Model 3, instead, where women who are starting a business out of necessity are considered, having a middle-range income decreases the chance of being involved in starting a business. This makes intuitive sense since it suggests that having access to higher income prevents women from having to start businesses out of necessity.

In all three models, some country-specific effects exist, although no country shows significant coefficients across all three models. This suggests that, in some cases, living in a particular country increases (or decreases) the likelihood that a woman will start a business by altering her motivations. The fact that this is true only for a very few countries, however, confirms our argument that the entrepreneurial propensity of women is not only contingent upon contextual factors but depends also on universal, and perhaps evolutionary, behaviors. As mentioned in the previous section, our argument is perfectly consistent with existing literature arguing that context matters. We recognize such importance but complement it with the existence of systematic behavioral heuristics and biases whose importance and intensity, in turn, may be influenced by context-specific institutions.

Second, Table 2 shows that, in all three models, the coefficients on knowent are positive and significant. This supports hypothesis 2 by suggesting that knowing other entrepreneurs is positively and significantly related to women’s propensity to start businesses regardless of motivation. Unfortunately, we do not have further information to verify a specific interpretation of this variable. The question referring to this variable simply asks respondents whether they know other entrepreneurs in the 24 months preceding the survey (see Table A1, Appendix). Therefore, it is most likely that knowent reflects the fact that knowing other entrepreneurs may influence the perception of entrepreneurial opportunities by providing social clues in the uncertain environment characterizing the creation of a new business. Connection to another entrepreneur may, however, also have an influence on a nascent entrepreneur’s self-perception of having sufficient skills for entrepreneurial
### Table 2

Probit Models on Women Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>dProbit for suboanw</th>
<th>Model 1—Women (all)</th>
<th>Model 2—Women (opportunity)</th>
<th>Model 3—Women (necessity)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df/dx</td>
<td>Z</td>
<td>df/dx</td>
<td>Z</td>
</tr>
<tr>
<td>Russia</td>
<td>-0.0175696*</td>
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<td>-0.0108167*</td>
<td>-3.15</td>
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<td>-3.08</td>
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</tr>
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<tr>
<td>Israel</td>
<td>-0.025013*</td>
<td>-3.19</td>
<td>-0.0120857*</td>
<td>-3.47</td>
</tr>
</tbody>
</table>

ENTREPRENEURSHIP THEORY AND PRACTICE
| Variable                        | Estimate | Std. Error | t-value | Pr(>|t|) | Benchmark                           |
|--------------------------------|----------|------------|---------|---------|-------------------------------------|
| Genhinc (middle 33%)           | -0.001894 | 0.66       | 0.0023462 | 1.02    | -0.0031658*                         | -1.96 |
| Genhinc (upper 33%)            | 0.0030435 | 0.91       | 0.0072688* | 2.68    | -0.0034482                         | -1.82 |
| Age 18–24                      | -0.0035389 | 0.93       | -0.003563 | -1.25   | -0.0005354                         | -24   |
| Age 35–44                      | 0.0042976  | 1.33       | 0.0012723 | 0.53    | 0.0019706                           | 1.01  |
| Age 45–54                      | 0.0045948  | 1.29       | 0.0010891 | 0.41    | 0.0008867                           | 0.41  |
| Age 55–64                      | -0.0045933 | 1.15       | -0.0054167 | -1.85   | -0.0012797                         | -5.5  |
| Gameduc (sec.degree)           | 0.0061951  | 1.79       | 0.0056024* | 1.97    | 0.0018547                           | 0.98  |
| Gameduc (postsec)              | 0.0039865  | 1.09       | 0.0073797* | 2.44    | -0.0032755                         | -1.63 |
| Gameduc (grad exp)             | -0.0029229 | 0.34       | 0.003139  | 0.43    | -0.005162                          | -1.01 |
| Workstatus                     | 0.0045957  | 1.71       | 0.0007093 | 0.36    | 0.0026784                           | 1.62  |
| Knowent (yes)                  | 0.0351551* | 2.4        | 0.0250031* | 3.2     | 0.009531*                           | 0.31  |
| Fearfail (yes)                 | -0.0186768* | 6.17       | -0.0099843* | -2.15   | -0.0064418*                        | -4.1  |
| Suskill (yes)                  | 0.0336624* | 2.95       | 0.0260321* | 2.48    | 0.0080034*                          | 3.1   |
| Oppor (yes)                    | 0.0266795* | 1.78       | 0.0215654* | 1.38    | 0.0056693*                          | 3.89  |

Model diagnostics

- Pseudo R²: 0.2964
- Log-likelihood: -1.935
- Observed percentage: 0.408347
- Predicted % (at x-bar): 0.222672

* Significant variables at the 95% confidence level or above.
Reference categories: United States, age 25–34, household income (lowest 33%), education (some secondary schooling).
Table 3

Probit Models on Men Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>dProbit for suboanw</th>
<th>Model 4—Men (all)</th>
<th>Model 5—Men (opportunity)</th>
<th>Model 6—Men (necessity)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$df/dx$</td>
<td>$Z$</td>
<td>$df/dx$</td>
<td>$Z$</td>
</tr>
<tr>
<td>Russia</td>
<td>-.0124964</td>
<td>1.22</td>
<td>-.0109742</td>
<td>-1.43</td>
</tr>
<tr>
<td>Hungary</td>
<td>.00631621*</td>
<td>4.57</td>
<td>.038032*</td>
<td>3.81</td>
</tr>
<tr>
<td>Denmark</td>
<td>-.2.70E-06</td>
<td>0</td>
<td>-.0001108</td>
<td>-0.01</td>
</tr>
<tr>
<td>Sweden</td>
<td>-.0148429</td>
<td>1.34</td>
<td>-.0062965</td>
<td>-0.75</td>
</tr>
<tr>
<td>Poland</td>
<td>.00603193*</td>
<td>4.01</td>
<td>.0130198</td>
<td>1.21</td>
</tr>
<tr>
<td>Germany</td>
<td>.00272481*</td>
<td>2.75</td>
<td>.0167769</td>
<td>2.22</td>
</tr>
<tr>
<td>Argentina</td>
<td>.1088965*</td>
<td>7.2</td>
<td>.0604057*</td>
<td>5.29</td>
</tr>
<tr>
<td>New Zealand</td>
<td>.0376428*</td>
<td>2.99</td>
<td>.0221888*</td>
<td>2.34</td>
</tr>
<tr>
<td>Singapore</td>
<td>.0182647</td>
<td>1.55</td>
<td>.0124365</td>
<td>1.38</td>
</tr>
<tr>
<td>Japan</td>
<td>-.0031548</td>
<td>-.21</td>
<td>-.0118651</td>
<td>-1.04</td>
</tr>
<tr>
<td>Korea</td>
<td>.0653911*</td>
<td>4.67</td>
<td>.0210363*</td>
<td>2.11</td>
</tr>
<tr>
<td>India</td>
<td>.05178*</td>
<td>4.49</td>
<td>.0027617</td>
<td>.36</td>
</tr>
<tr>
<td>Canada</td>
<td>.016504</td>
<td>1.49</td>
<td>.0012981</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Portugal</td>
<td>.0163912</td>
<td>1.1</td>
<td>.0184568</td>
<td>1.52</td>
</tr>
<tr>
<td>Finland</td>
<td>-0.008777</td>
<td>-0.78</td>
<td>-0.0076349</td>
<td>-0.9</td>
</tr>
<tr>
<td>Israel</td>
<td>-0.0428428*</td>
<td>-3.85</td>
<td>-0.019527*</td>
<td>-2.25</td>
</tr>
<tr>
<td>Gembhinc (middle 33%)</td>
<td>-0.0149815*</td>
<td>-3.03</td>
<td>-0.0023601</td>
<td>-0.57</td>
</tr>
<tr>
<td>Gembhinc (upper 33%)</td>
<td>-0.0145113*</td>
<td>-2.7</td>
<td>-0.0012065</td>
<td>-2.7</td>
</tr>
<tr>
<td>Age 18–24</td>
<td>-0.0026973</td>
<td>-0.42</td>
<td>-0.0022603</td>
<td>-0.45</td>
</tr>
<tr>
<td>Age 25–44</td>
<td>0.0059216</td>
<td>1.09</td>
<td>0.0029313</td>
<td>0.7</td>
</tr>
<tr>
<td>Age 45–54</td>
<td>0.0059559</td>
<td>1.02</td>
<td>-0.000563</td>
<td>-0.13</td>
</tr>
<tr>
<td>Age 55–64</td>
<td>-0.0089915</td>
<td>-1.34</td>
<td>-0.0065356</td>
<td>-1.25</td>
</tr>
<tr>
<td>Gemeduc (sec.degree)</td>
<td>0.0126071*</td>
<td>2.19</td>
<td>0.0154387*</td>
<td>3.13</td>
</tr>
<tr>
<td>Gemeduc (post.sec)</td>
<td>0.0186707*</td>
<td>3.11</td>
<td>0.0232473*</td>
<td>4.55</td>
</tr>
<tr>
<td>Gemeduc (grad.exp)</td>
<td>0.0184558</td>
<td>1.24</td>
<td>0.0206663</td>
<td>1.65</td>
</tr>
<tr>
<td>Workstatus</td>
<td>0.0093096</td>
<td>1.77</td>
<td>0.0102467*</td>
<td>2.51</td>
</tr>
<tr>
<td>Knwnt (yes)</td>
<td>0.0258090*</td>
<td>-0.99</td>
<td>0.0152770*</td>
<td>0.9</td>
</tr>
<tr>
<td>Fearfail (yes)</td>
<td>-0.0105769*</td>
<td>-3.96</td>
<td>-0.0074684*</td>
<td>-3.76</td>
</tr>
<tr>
<td>Susskill (yes)</td>
<td>0.0518762*</td>
<td>3.6</td>
<td>0.0463021*</td>
<td>1.38</td>
</tr>
<tr>
<td>Oppor (yes)</td>
<td>0.0460971*</td>
<td>2.01</td>
<td>0.0398450*</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Model diagnostics

- **Pseudo R²**: 0.2362
- Log-likelihood: -0.0332
- Observed percentage: 0.0757706
- Predicted % (at x-bar): 0.0533873

* Significant variables at the 95% confidence level or above.

Reference categories: United States, age 25–34, household income (lowest 33%), education (some secondary schooling).
Table 4

Probit Models for Pooled Sample (Men + Women)

<table>
<thead>
<tr>
<th>Variable</th>
<th>df/dx</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>-0.018324*</td>
<td>-3.55</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.0253199*</td>
<td>3.66</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0.0134577*</td>
<td>-2.31</td>
</tr>
<tr>
<td>Sweden</td>
<td>-0.0178733*</td>
<td>-3.24</td>
</tr>
<tr>
<td>Poland</td>
<td>0.0285185*</td>
<td>3.63</td>
</tr>
<tr>
<td>Germany</td>
<td>0.00735</td>
<td>1.47</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.0470657*</td>
<td>6.23</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0.0221275*</td>
<td>3.38</td>
</tr>
<tr>
<td>Singapore</td>
<td>0.0019034</td>
<td>0.31</td>
</tr>
<tr>
<td>Japan</td>
<td>-0.0086438</td>
<td>-1.1</td>
</tr>
<tr>
<td>Korea</td>
<td>0.0320614*</td>
<td>4.46</td>
</tr>
<tr>
<td>India</td>
<td>0.0207245*</td>
<td>3.45</td>
</tr>
<tr>
<td>Canada</td>
<td>0.0095515</td>
<td>1.58</td>
</tr>
<tr>
<td>Portugal</td>
<td>-0.0032184</td>
<td>-0.44</td>
</tr>
<tr>
<td>Finland</td>
<td>-0.0126718*</td>
<td>-2.21</td>
</tr>
<tr>
<td>Israel</td>
<td>-0.0351518*</td>
<td>-6.15</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.0125171*</td>
<td>-5.38</td>
</tr>
<tr>
<td>Gembhinc (middle 33%)</td>
<td>-0.0078877*</td>
<td>-2.87</td>
</tr>
<tr>
<td>Gembhinc (upper 33%)</td>
<td>-0.0047976</td>
<td>-1.57</td>
</tr>
<tr>
<td>Age 18–24</td>
<td>-0.0034292</td>
<td>-0.96</td>
</tr>
<tr>
<td>Age 35–44</td>
<td>0.0050723</td>
<td>1.65</td>
</tr>
<tr>
<td>Age 45–54</td>
<td>0.0055151</td>
<td>1.66</td>
</tr>
<tr>
<td>Age 55–64</td>
<td>-0.007013</td>
<td>-1.96</td>
</tr>
<tr>
<td>Gmededuc (second.degree)</td>
<td>0.0092765*</td>
<td>2.84</td>
</tr>
<tr>
<td>Gmededuc (postsec.degree)</td>
<td>0.0103717*</td>
<td>3.05</td>
</tr>
<tr>
<td>Gmededuc (grad.exp.)</td>
<td>0.0054754</td>
<td>0.65</td>
</tr>
<tr>
<td>Workstatus</td>
<td>0.0067188*</td>
<td>2.49</td>
</tr>
<tr>
<td>Knowent (yes)</td>
<td>0.0321137*</td>
<td>2.01</td>
</tr>
<tr>
<td>Fearfail (yes)</td>
<td>-0.0166947*</td>
<td>-7.08</td>
</tr>
<tr>
<td>Suskill (yes)</td>
<td>0.0522382*</td>
<td>4.17</td>
</tr>
<tr>
<td>Oppor (yes)</td>
<td>0.0378875*</td>
<td>0.74</td>
</tr>
</tbody>
</table>

success. Thus, it seems possible that knowing other entrepreneurs may have an indirect effect on perceptual variables.

Third, Table 2 shows that, in all three models, the coefficients on all three perceptual variables are always significant and their signs follow the hypothesized relationships. Thus, consistent with existing literature, we find strong evidence supporting hypotheses 3–5. Specifically, our results suggest that alertness to existing opportunities and the subjective self-assessment of having adequate skills and knowledge are both positively related to women’s propensity to start new businesses. Fear of failure, on the other hand, is negatively related to women’s entrepreneurial propensity.
Fourth, Table 2 shows that the relative importance of sociodemographic and/or perceptual variables for the entrepreneurial propensity of women is not contingent on entrepreneurial motivation. In fact, with very few minor exceptions for some sociodemographic variables, the signs and significance of the coefficients do not change across the three models. Only knowent and the three perceptual variables remain significant across all three models. Thus, we find no support for hypothesis 6.

The analysis of Table 3 allows us to test our hypotheses 7–9 regarding differences across gender. Table 3 replicates the analysis presented in Table 2 but considers men rather than women. Specifically, Model 4 shows the results of a probit model in which all men in our sample are considered. Model 5 shows the results of a probit model in which all men in our sample who are starting a business to pursue an opportunity are considered. Model 6 shows the results of a probit model in which all men in our sample who are starting a business out of necessity are considered. As in the case of women, some country effects are observable. However, unlike in the case of women, some country effects are significant across all three models. Specifically, everything else being the same, being an Argentinean, Hungarian, Korean, or New Zealander man increases the likelihood of being involved in starting a business regardless of entrepreneurial motivation. This is somewhat surprising since it contradicts the standard belief that women tend to be more sensitive than men to local conditions. It also suggests that for men, macroeconomic conditions may have a stronger influence than for women regardless of motivation. As in the case of women, the signs of all sociodemographic variables are consistent with existing theory but, in almost all cases, are not significant.

Again, similarly to women, knowing other entrepreneurs is significantly and positively correlated to the likelihood of being involved in starting a business regardless of entrepreneurial motivation. Furthermore, and again as in the case of women, the coefficients on all three perceptual variables are significant and follow the hypothesized relationships, except for the coefficient on fearfail in Model 6 wherein low tolerance for risk does not seem to reduce the entrepreneurial propensity of men motivated by necessity. Thus, comparing Tables 2 and 3, we find no evidence that sociodemographic variables play a significant role in explaining gender differences in entrepreneurial propensity, and therefore no support for hypothesis 7. On the other hand, the two tables do suggest that knowing other entrepreneurs and the three perceptual variables considered in our model explain, at least in part, gender differences in entrepreneurial propensity. In addition to the four variables being significant in all six models, we also find that their coefficients are systematically different between men and women. Thus, we find support for hypotheses 8 and 9.

Finally, comparing Tables 2 and 3 further suggests that differences in the relative entrepreneurial propensity of men and women are not contingent upon differences in entrepreneurial motivations. Thus, we find no support for hypothesis 10. In fact, comparing Models 2 and 4, wherein women and men involved in starting a business to pursue an opportunity are considered, our results show again that knowing other entrepreneurs and all perceptual variables are the most important factors for both genders when deciding whether to start a business. Comparing the two models also shows that both genders respond to a similar set of variables, although some differences exist with respect to work status (workstatus), which has an effect for men but not for women, and with respect to higher income, which has a positive effect for women, but not for men. Comparing Models 3 and 6, wherein women and men involved in starting a business out of necessity are considered, our results still show that perceptual variables still have a significant impact but, as expected, the effect is smaller than for opportunity-driven nascent entrepreneurs. In a necessity environment, subjective perceptions play less of a role since individuals have little or no choice. Also, as expected, for both genders, higher income
protects from the “necessity” to start a business, while education has no significant effect. Interestingly, fear of failure is not significant for men, but it is significant for women, perhaps to reflect the fact that men may be more risk tolerant than women with respect to losses. In an evolutionary perspective, women are traditionally caregivers for the family. Thus, putting the family’s resources in danger, especially in a situation of necessity, may increase their perception of risk.

The consistency of the variables’ signs and significance levels between Tables 2 and 3 raises the question whether differences in entrepreneurial propensity across genders do in fact exist. To address this issue, we present Table 4. Model 7 in Table 4 replicates the analysis presented in the previous models but considers the pooled sample of all men and women. In addition to the variables included in previous probit models, a dummy for gender (gender) is included to test for the significance of gender effects. Model 7 shows a negative and highly significant coefficient for the gender dummy variable (gender). This means that, given the variables included in our analysis, and given our sample, a gender effect does exist and is significant. Specifically, and consistently with empirical observations, Model 7 shows that being a woman significantly reduces the likelihood that a person will be involved in starting a business. From our previous results, we know that this is true across all countries in our sample, regardless of motivation, and is strongly linked to knowing other entrepreneurs and to perceptual variables.

Comparing all seven models confirms that perceptual variables have the strongest connection with the decision to start a business for both men and women, and that both genders respond to similar models. For both men and women, the ranking of the most important variables is identical. Moreover, for both men and women, the four most important variables are suskill, oppport, knowent, and fearfail. Thus, except for knowent, which has the third most important coefficient, perceptual variables exhibit the highest coefficients. In particular, the signs and magnitudes of the coefficients suggest that women tend to perceive themselves and their business environment in a less favorable light than men. For example, comparing Models 1 and 4, we find the coefficients on suskill to be highly significant and positive for both men and women. However, while the coefficient for men is a positive 0.058, the corresponding coefficient for women is only 0.033.

In general, about 75% of the variance remains unexplained. Although this is not an unusual result in empirical research, it is worth further discussion. First, it is most likely that our study does not include all relevant variables. In particular, given the data available, our consideration of country-specific effects is limited to the inclusion of dummy variables. This is far from satisfactory since we are not able to specify the nature of important cross-country differences. Second, perhaps the use of nonparametric techniques would complement nicely existing studies and add greater explanatory value to the study of entrepreneurial propensity. The latter issue has been partly addressed, among others, by Minniti (2004, 2005) and Minniti and Nardone (forthcoming) who have shown the existence of nonlinearities in the decision to start a new business.

Finally, it should be noted that we can only establish that suskill is the most important covariate used in our models and that perceptual variables are very important for

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5. Clearly, the relatively low R² does not mean that the unexplained variance is necessarily due to contextual factors but simply that our models fail to include all important variables. It should also be noted that, because of our inability to properly account for country-specific institutions, our results do not fully capture the importance of perceptual variables in entrepreneurial decisions. In other words, it is likely that our results would be much stronger had we been able to more fully describe contextual differences. As mentioned in the text, the existence of contextual differences is consistent with our argument and, in fact, makes it more compelling.
women’s (and men’s) decisions to start businesses. The lack of longitudinal data, unfortunately, prevents us from establishing unequivocally the causal direction of the tested relationships. However, Koellinger et al. (2005) found evidence that the importance of perceptual variables in entrepreneurial decisions is higher for nascent entrepreneurs than for experienced entrepreneurs. In addition, Gatewood, Shaver, Powers, and Gartner (2002) have shown the existence of a causal relationship between internal factors and women’s decisions to start a business. Those results provide support for the argument that a causal relationship indeed exists between perceptual variables and starting a new business, and that it is stronger for women than men.

**Discussion and Conclusion**

Overall, our results support the hypotheses that perceiving the existence of opportunities, self-confidence in one’s own entrepreneurial skills, and knowing other entrepreneurs are crucial characteristics of women (and men) who are involved in starting a business. Our results also show that this is true across a variety of macroeconomic contexts and regardless of motivation. These findings, in turn, lend support to a behavioral economics approach to the study of entrepreneurial behavior in which subjective (and possibly biased) perceptions are taken into account at least as much as objective and measurable factors such as age, income, education, and work status. This is consistent, among others, with Lefkowitz (1994), who has shown that men and women react similarly to the work environment when one controls for spurious effects caused by systematic differences in types of job and job payments. Knowledge of other entrepreneurs is also shown to have a significant impact. Unfortunately, however, we are not able to distinguish whether this reflects the importance of role models (Wagner & Sternberg, 2004; Walstad & Kourilsky, 1998), the existence of networks (Aldrich, 1999; Aldrich & Martinez, 2001), or, more simply, the fact that knowing other entrepreneurs, independently from the strength and type of connection, reduces the ambiguity related to starting a new business and, as a result, encourages entrepreneurship (Minniti, 2004, 2005).

Attitudes toward entrepreneurship (or anything else for that matter) reflect, to a large extent, subjective perceptions rather than objective conditions. Our results show that a strong positive and significant correlation exists between self-confidence, opportunity perception, and the likelihood of starting a new business. In fact, the perception of having sufficient skills is a dominant variable that seems to have an effect independent of institutional settings, culture, and overall level of entrepreneurial activity. Consistent with some of our initial hypotheses, our results also suggest that perceptions explain an important portion of the difference in entrepreneurial propensity across genders since men tend to perceive themselves in a more optimistic light and, as a result, have stronger incentives to start new businesses. Although other possibilities exist, we believe these systematic perceptual differences may be the result of greater role incongruity for women (Eagly & Johannesen-Schmidt, 2001) perhaps in combination with the observed tendency toward overconfidence exhibited by male entrepreneurs (Koellinger et al., 2005). In fact, individual perceptions may differ from actual abilities and risk levels and are likely to be biased. There exists some evidence that distortions in perceptions are common among individuals in general, and among entrepreneurs in particular (Busenitz & Barney, 1997;

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6. We tested Model 7 for each of the 17 countries separately. In 14 of them, suskill emerged as the single best predictor of the likelihood of starting a new business. For three countries (Japan, South Korea, and New Zealand), work status and opprot emerged as the most important variables. In all three cases, however, the perception of having sufficient skills had the second highest coefficient in the regressions.
Cooper, Woo, & Dunkelberg, 1988). On the other hand, individuals may view their own perceived entrepreneurial ability as a signal of potential success, and, as a result, be more receptive to entrepreneurial opportunities.

It is important to point out that our study does not support the argument that women entrepreneurs are borne rather than made. Quite to the contrary, our study complements the view that given proper incentives and making positive assessments, any woman (or man) may be willing to start a business. In fact, the specific perceptual factors that we have shown to be important for women's decisions to start new businesses are, at least in part, the long-term outcomes of institutional settings. That is, they emerge from specific contextual circumstances. Unlike standard arguments based on contextual analyses, however, our article shows that not everything is explained by context and that, perhaps, some behaviors are the result of perceptions forged over time by evolutionary circumstances.

Our study lends itself to several extensions. First, our findings call for a formal test of expectancy theory. Expectancy theory suggests that individuals' belief that they can perform the task (start a new business) and their belief about the consequences or outcomes influences whether or not they undertake the task to begin with. In fact, our results suggest that if women feel they have the skills and knowledge to engage in entrepreneurship, and believe that their abilities will lead to success, they will be more likely to start their own businesses. Self-perception can have a specific influence on behavior (Eagly & Johannesen-Schmidt, 2001), and stereotypical expectations for gender and organizational roles have been shown to be assimilated into individuals’ perceptions and behavior (Eagly & Carli, 2003; von Hippel, Sekaquaptewa, & Vargas, 1995). Indeed, women entrepreneurs work in environments in which gender stereotypes have been found to exist (Baron, Markman, & Hirza, 2001). Thus, the influence of perceptions on entrepreneurial behavior would follow suit. This literature provides further evidence of our claim that there are two separate though related sets of factors that influence entrepreneurial behavior, namely, contextual factors and universal perceptual factors and heuristics.

Second, the current treatment of institutional variables is limited to correcting for country effects through the introduction of dummy variables. This is far from satisfactory. A desirable addition would be the inclusion of data on government policies and programs. Some of these programs have a general focus and are designed primarily to foster the economic development of a specific region. The purpose of such programs is to increase the level of entrepreneurial activity and, as a consequence, to promote local economic development. Other programs, however, are designed specifically to foster entrepreneurship by women (Godwyn, Langowitz, & Sharpe, 2005). Some of them aim at promoting equality or focus on improving the financial conditions of women. The introduction of such data may turn out to be very powerful in explaining the differences in entrepreneurial activity between men and women across various country contexts.

Finally, with respect to the old standing debate on whether or not women tend to be less risk tolerant than men, our results suggest that although risk tolerance plays some role in gender differences, the main difference is in the way in which men and women perceive themselves and their environment. Noticeably, perceptions and risk tolerance are both characteristics of the individual. They cannot be easily changed by exogenous actions such as, e.g., government intervention. Thus, our results have significant policy implications. While policy can alter an individual's incentives, the cultural factors that mold perceptions and risk profiles depend on the specific history of the place. They are path dependent and, as a result, only change slowly over time. Harper (1998) argues explicitly that the nature of political and economic institutions influences individuals' perceptions. Along similar lines, Baumol (1990) argues that institutional arrangements affect the quantity and type of entrepreneurial efforts. This is particularly important for women.
since perceptions of themselves and their environment play a greater role in their behavior. Thus, to alter the way in which individuals think about themselves and their role in society may require very localized and specific interventions.

This study contributes to our understanding of the reasons and mechanisms behind the asymmetric behavior of men and women with respect to new business creation. At a time when governments all over the world are looking at entrepreneurship as a way to increase the wealth and well-being of their countries, we believe this issue to be a particularly important one. This study highlights a new frontier for government policy, namely, the possibility that programs aimed at improving perceptions of aspiring women entrepreneurs may lead to higher rates of business start-up. In addition to providing valuable information about how to increase the incidence of business start-ups, the entrepreneurial behavior of women has been shown to matter significantly for issues related to social equity. Unfortunately, our data did not allow the pursuit of this line of inquiry. The nature of the GEM data set does not directly allow investigation of this issue. It would be helpful to know, on a cross-country basis, whether social equity creates an environment for improved perceptions by women, and thus may be an important determinant of women’s entrepreneurial behavior. Rather than speculate on this important topic, we leave this matter to future investigations. It is to be hoped that study in the area will develop soon, since a better understanding of the contribution of perceptions to women’s new business creation decision making will allow the design of more satisfactory programs aimed at increasing their involvement in the market place and their contribution to the economy as a whole.

Appendix—Data Description

Dependent Variables

Nascent Entrepreneurs
In the GEM (2001) adult population survey, all respondents were asked:

1. Are you, alone or with others, currently trying to start a new business, including any type of self-employment (yes, no, don’t know, refuse)?
2. Are you, alone or with others, trying to start a new business or a new venture with your employer—an effort that is part of your normal work (yes, no, don’t know, refuse)?

Respondents who answered “yes” to item 1 or 2 were then asked:

3. You mentioned that you are trying to start a new business. Over the past twelve months have you done anything to help start this new business, such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, or any other activity that would help launch a business (yes, no, don’t know, refuse)?
4. Will you personally own all, part, or none of this business (all, part, none, don’t know, refuse)?

The respondents were coded as “nascent entrepreneurs” (suboanw) if, in addition to 1 or 2, they answered “yes” and “all” or “part” to items 3 and 4, respectively.

Necessity versus Opportunity Entrepreneurs
In order to determine why they engaged in the creation of new ventures, all respondents coded as nascent entrepreneurs were asked:
5. Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work (take advantage of business opportunity, no better choices for work, other)?

Most respondents (~95%) could be classified into one of these two categories, those seeking to take advantage of a business opportunity and those who were forced into the effort because they could not find better employment.

**Independent Variables**

All independent variables used in the analysis are described in Table A1. All items were part of the GEM survey and were asked to each respondent, independently from their involvement in entrepreneurial activity.

**Table A1**

**Definitions of Independent Variables**

<table>
<thead>
<tr>
<th>Variable and corresponding survey question</th>
<th>Possible values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>Male</td>
</tr>
<tr>
<td>Respondents were asked to provide their gender.</td>
<td>Female</td>
</tr>
<tr>
<td>2. Age</td>
<td>18-24 years old</td>
</tr>
<tr>
<td>Respondents were asked to provide their year of birth.</td>
<td>24-34 years old</td>
</tr>
<tr>
<td></td>
<td>35-44 years old</td>
</tr>
<tr>
<td></td>
<td>45-54 years old</td>
</tr>
<tr>
<td></td>
<td>55-64 years old</td>
</tr>
<tr>
<td></td>
<td>Full/full or part time</td>
</tr>
<tr>
<td></td>
<td>Part time only</td>
</tr>
<tr>
<td></td>
<td>Retired/disabled</td>
</tr>
<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Not working: other</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
</tr>
<tr>
<td>3. Workstatus</td>
<td>Lowest 33%</td>
</tr>
<tr>
<td>Respondents were asked to provide their occupational status at the time of the survey.</td>
<td>Middle 33%</td>
</tr>
<tr>
<td>Answers where then consolidated and respondents classified as either working (full or part-time) or not working.</td>
<td>Upper 33%</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
</tr>
<tr>
<td></td>
<td>Some secondary school</td>
</tr>
<tr>
<td></td>
<td>Secondary degree</td>
</tr>
<tr>
<td></td>
<td>Post secondary degree</td>
</tr>
<tr>
<td></td>
<td>Grad exp</td>
</tr>
<tr>
<td></td>
<td>No education</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td>4. Income</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondents were asked to provide information about their household income. Data were then classified into three groups given the income distribution of the country of origin.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td>5. Education</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondents were asked whether fear of failure would prevent them from starting a new business.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td>7. Knowledge</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondents were asked whether they knew someone personally who had started a business in the 24 months preceding the survey.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td>8. Opportunity</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondents were asked if they believed that, in the 6 months following the survey, good business opportunities would exist in the area where they lived.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
<tr>
<td>9. Skill</td>
<td>Yes</td>
</tr>
<tr>
<td>Respondents were asked whether they believed to have the knowledge, skill and experience required to start a new business.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Refused</td>
</tr>
</tbody>
</table>
REFERENCES


May, 2007

361


May, 2007


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