HASKAYNE
SCHOOL OF BUSINESS

Unleashing the hidden GEM(s)

Presentation for the THECIS Fellows

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UNIVERSITY OF CALGARY
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Why am I here... giving this talk?

- Deputy Leader, Global Entrepreneurship Monitor, GEM Canada Team
- Conduct all the analysis for the GEM Canada and regional reports, except those in Québec
- Conducted GEM studies at national, regional, provincial, and institution levels
- Serve on the committee advising on the content of the APS
- Working on multiple academic papers using GEM data and supplemental questions (**opportunities**)

1. Gain an understanding of the background on the Global Entrepreneurship Monitor (GEM) methodology

2. Elevating GEM data and analysis

3. Appreciate and counter the critiques of GEM data

4. Accessing data and influencing the questions

5. Open Discussion

1. GEM Methodology

- GEM mandate

- Definition of entrepreneurship

- Conceptual framework

- Key indicators
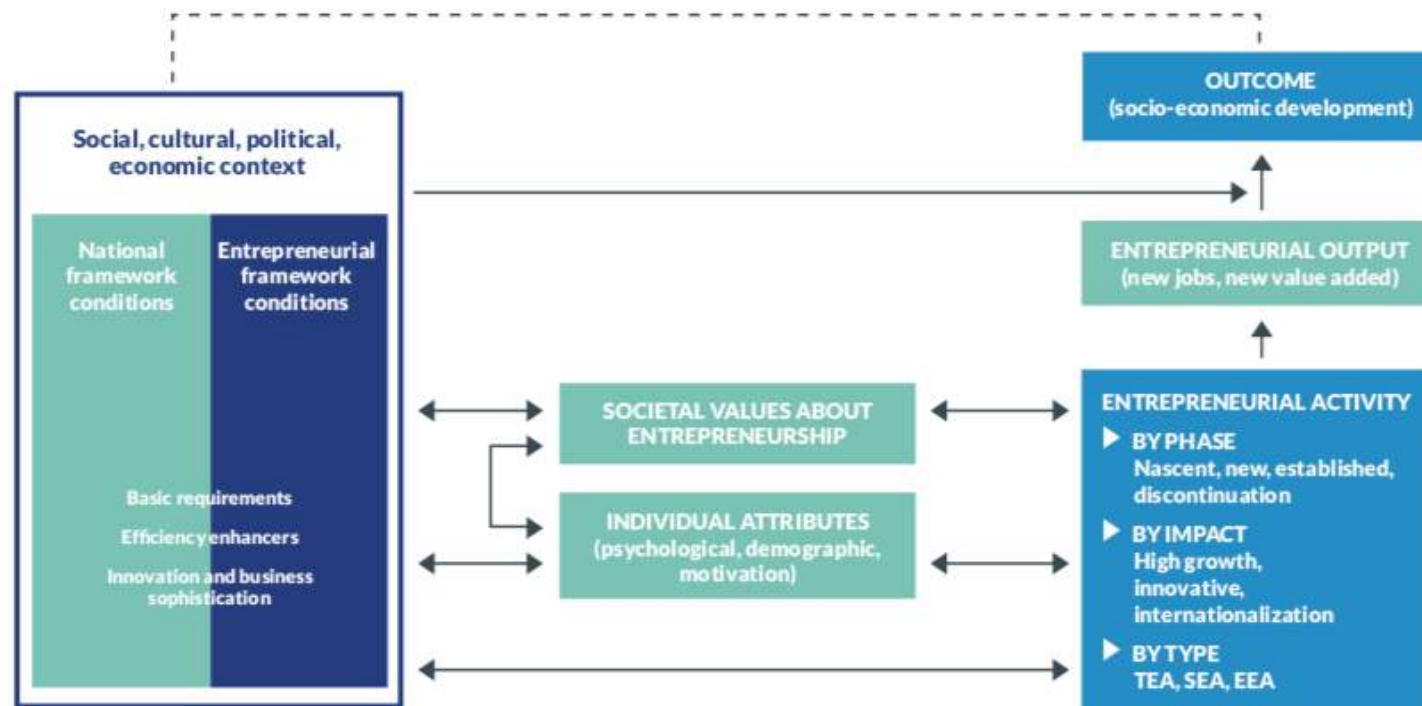
- Key definitions

GEM Mandate

- Estimate the prevalence of individuals involved in entrepreneurial activity at a single point in time,

- It is NOT following people who are setting up a business over several years and assessing those factors that lead to a successful firm creation.
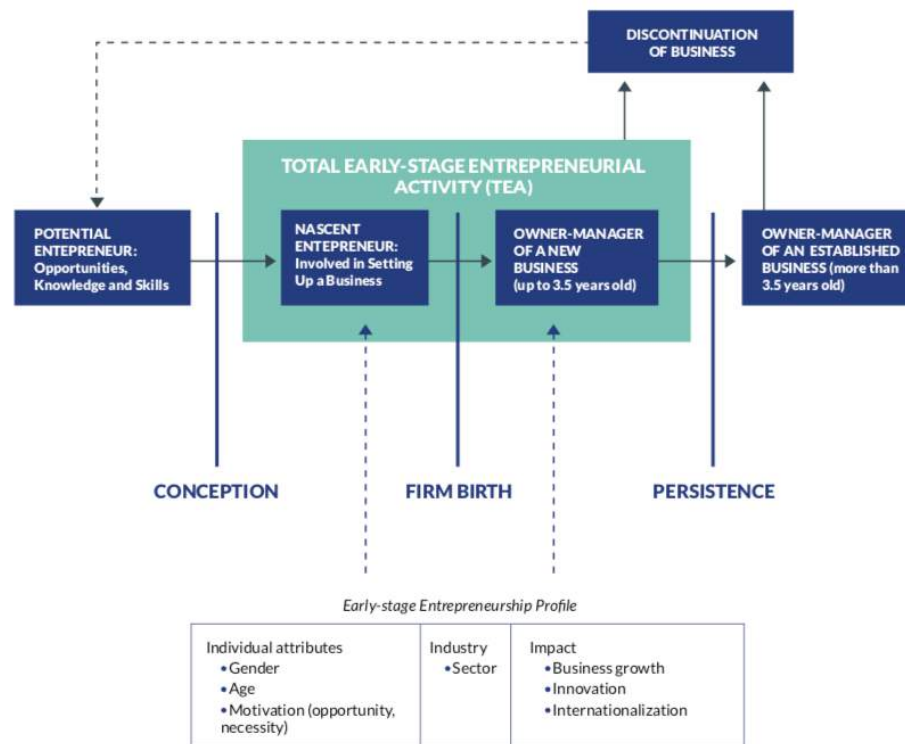
GEM Definition of Entrepreneurship

"Any attempt at new business or venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals or an established business."

- This is quite broad. Caution is needed when comparing findings with other reports or other data sources (e.g., OECD, StatsCan)
- Payment of any salaries and wages for more than three months to anybody, including the owners, defines the ''firm start event.''

GEM Conceptual Framework

GEM Entrepreneurship Indicators

Key GEM Definitions

- The nascent entrepreneurship rate, the percentage of the adult population who are currently engaged in setting up a business that has not paid salary, wages or other payments to owners for more than three months.

- The new business ownership rate, percentage of the adult population who are currently owner-managers of new businesses that have paid wages, salaries or any other payments to owners for more than three months but not more than 42 months.

- The combination of these two (counting each individual only once) yields an overall indicator, TEA, the total early stage activity, or entrepreneurship rate (covers 3.5 years).

2. Elevating GEM data and analysis

- Data Structure
- Core Themes in Questionnaire
- Data Quality
- Weightings
- Elevating the Analysis Beyond GEM Reports

Data Structure

- Adult Population Survey (APS)
  - Individual level dataset
  - National level dataset

- National Expert Survey (NES)

Adult Population Survey (APS)

- 2000 base respondents (general + entrepreneurs)
- Oversampling (e.g., > 7500 Western Canada in 2019)
- Custom modules prior years and new ones each year
  - e.g., social entrepreneurship, family business, intrapreneurship, gig economy, artificial intelligence
- Oversampling by region, province, city, university
- Core themes from conceptual framework (next slide)
- 483 variables in 2022 APS dataset (learning curve)
- Raw, calculated, coded, duplicate data variables
- GEM Global does not throw anything away so data file gets bloated

Core Themes in Questionnaire

- **BLOCK 0: INTRODUCTION: entire sample**
  - Know, opport, skill, fear failure, easy start, media, status, good career, social
- **BLOCK 1: nascent entrepreneurs + special topic**
  - # owners, wages, type, industry, export, innovation, employees, aspirations, motives, SDG
- **BLOCK 2: owner-managers + special topic**
  - # owners, wages, type, industry, export, innovation, employees, aspirations, motives, SDG
- **BLOCK 3: potential and discontinuing**
  - Discontinue, exits, reasons
- **BLOCK 4: informal investors**
  - Angel, amount $, recipient, relationship
- **BLOCK 5: extra questions (e.g., GEM Canada team)**
- **BLOCK 6: required demographics**
  - Gender, age, occupation, hh size, hh income, edu
- **BLOCK 7: vendor provided variables**
 - Strata, date, contact, callbacks

National Expert Survey (NES)

- 36 experts across ecosystem pillars   (*Delphi-like technique*)
    - Sufficiency of **financing** for entrepreneurs
    - Easy of access to **financing** for entrepreneurs
    - **Government** concrete policies, priorities and support
    - **Government** policies, bureaucracy, taxes
    - **Government** programs
    - Entrepreneurial level of **education**
    - **R&D** level of transference
    - Professional and **commercial infrastructure** access
    - General **physical infrastructure** and service access
    - **Internal market** dynamics (e.g., consolidation)
    - **Internal market** burdens (e.g., interprovincial trade)
    - Cultural, social norms and **society support**

- National (e.g., NES), regional (e.g., PES), or site specific (e.g., UCalgary)

- Total score and component scores

- 711 variables in dataset (Likert re-scaling)

- Macro level indicators

NES Aggregate Scores
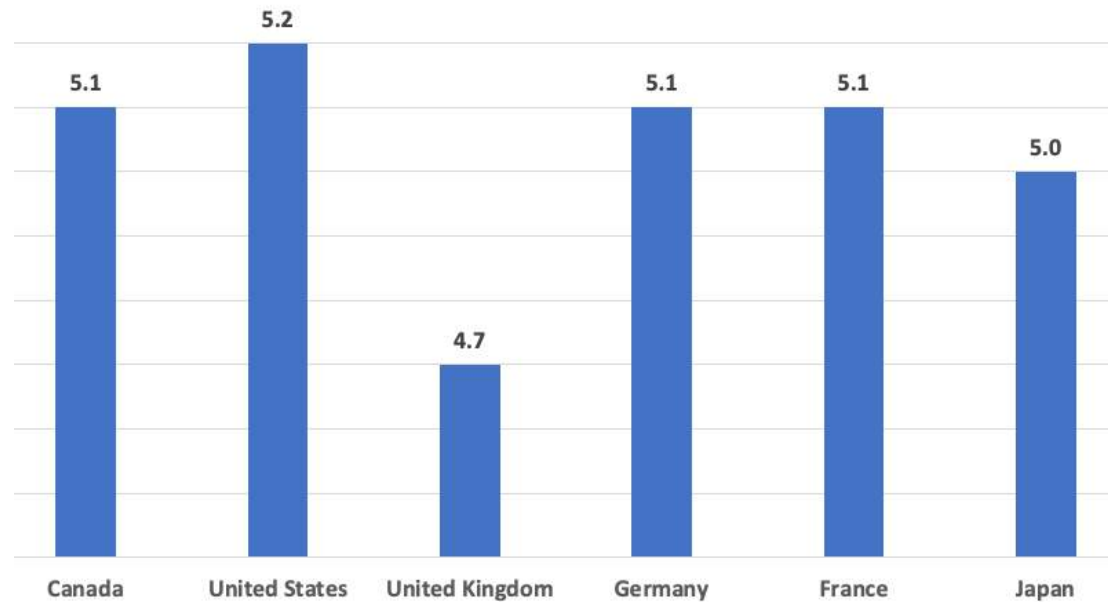
NES Component Scores
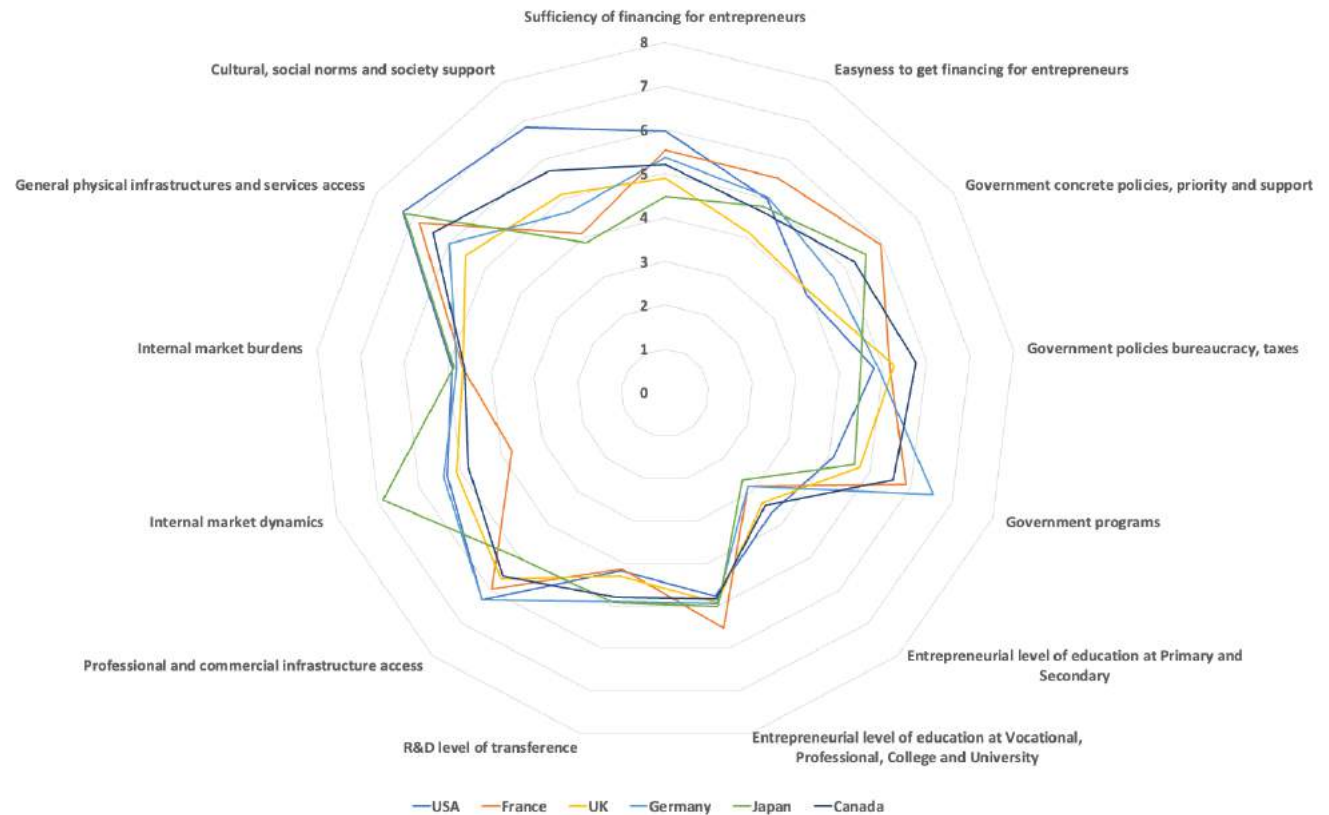
The data is of high quality (for the most part)

- Industry is manually coded based upon open ended response
(I tried to fix this in 2023. Still need to demonstrate my approach is better)

- Gender remains binary (not adopted by GEM Global yet)

- Missing data is usually not an issue for the **core** questions but be prepared to defend questions you add if not already validated (e.g., using an existing scale)

- Plenty of skip logic (e.g., ensure your data was collected!)

Understanding the *weighting* debate

- National level analysis weights are included in dataset (used for GEM reports)

- Regional level weights need to be calculated (determine as part of your analysis plan)

- Some debate as to whether weights should be included for certain analysis

Elevating the Analysis Beyond GEM Reports

- Data quality verification (not provided in GEM reports)
- Robustness checks and *post hoc* analysis (e.g., alternate explanations)
- Paying for supplemental questions to augment the GEM questions for a specific research study is often needed
- Combining GEM data with other data sets (e.g., StatsCan)
- Leverage multiple years (not longitudinal)
- Leverage multiple countries (core questions)
- Address the critiques of GEM data directly (next)

3. Countering Critiques

- What are the critiques?
- How to counter them or at least mitigate concerns

Advantages	Disadvantages
Consistent questions over time	Not longitudinal
Annual survey representative sample	Content validity for developing versus developed countries
Multiple >50 countries participating	Reliance on binary responses (psychometrics)
Individual perspective (not firm level) micro level data with multilevel analysis	Entrepreneurship as a rare event
Broad perspective on entrepreneurship types and including early stage (life cycle)	Small samples of entrepreneurs and relatively small amount of information collected on each venture
Includes full range of "employment" data	*Many poor quality* studies using GEM data that reviewers and AEs can point towards!

GEM Data Reliability and Validity

- The "sky is not falling" nearly as much as many reviewers and some AE's would claim and we need to push back on their false claims
- Reliability has been demonstrated through the replication of the data collection during the same time-period by multiple countries and results were not statistically significantly different
- Comparison of results from the same country from year to year also show high correlations (e.g., > 80%, $p < .000$)
- Comparable CI for GEM results with official national results (albeit with some comparability challenges)

Reynolds et al., 2005)

4. Gaining Access to GEM Data and Questions

- Data is typically embargoed for three years for the national teams (*somewhat of a moving target*)

- Collaborate with a national team member

- Questions can be added ($) or proposed to be included in the core

Stakeholders

- **GEM Global** (gemconsortium.org)
  - Own the global rights, coordination fees, quality checks, board led
- **National Teams** (e.g. GEM Canada)
  - Led by The Centre for Innovation Studies (thecis.ca) in Canada
  - THECiS pays the coordination fees to GEM global and data collection fees to vendors, owns the data and facilitates the report writing by GEM Canada team members
- **Research Firm** (vendor)
  - Collects the data based upon the survey approved by GEM Canada Team
  - Works with GEM Global on quality checks and calculates weights

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GEM Global Entrepreneurship Monitor

GEM Timeline for the 2023 research cycle

Data collection is shifting more toward online and away from landlines and cell phones due to cost, fatigue, and changing technology adoption levels

The GEM data collection process follows a similar cycle every year, although the dates and deadlines do vary slightly

Data Collected by Teams

Data Processed by GEM

Teams Check Data

Global Report Produced

DEADLINE: Coordination Fee – FEBRUARY 6th

DEADLINE: APS and NES Data – JULY 14th

DEADLINE: NES Proposals – APRIL 7th

Annual Meeting and Launch of Global Report

DEADLINE: APS Proposals – MAY 12th

| Jan | Feb | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb |

Request For Proposal Package and Administrative Documentation Sent to Teams – JANUARY 16th

Final APS and NES Results – OCTOBER 13th

2nd APS Results – SEPTEMBER 29th

1st APS Results – SEPTEMBER 1st

APS = Adult Population Survey
NES = National Expert Survey

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- **https://www.gemconsortium.org/research-papers**

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5. Discussion

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THANK YOU!