INNOVATION BY SMALL BUSINESSES DURING COVID-19

Prepared by Dr. Ray Bowman

Based on *Who innovates during a crisis? Evidence from small businesses in the COVID-19 pandemic*

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Who innovates during a crisis? Evidence from small businesses in the COVID-19 pandemic

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THEORIES OF INNOVATION

- **Schumpeter's Mark I Theory of Innovation:** Schumpeter's first theory is about how **individual entrepreneurs with great ideas (Think Creative Destruction)** can spark economic growth. According to this theory, these entrepreneurs shake things up by introducing new things or ways of doing things that replace the old. This process of shaking things up and creating something new helps the economy to grow.

- **Schumpeter's Mark II Theory of Innovation:** Schumpeter's second theory is about **how large companies, rather than individual people, are the main source of new ideas**. In this theory, creating new things becomes a regular task, and it's less about shaking things up. Teams within these companies are always on the lookout for chances to innovate.

- **John Bloom's "Trapped Factors" theory of innovation:** "trapped factors" are resources or abilities that a company or economy can't easily use for other purposes because of **certain restrictions or inefficiencies**. In terms of innovation, this might refer to situations where **current resources or abilities are "stuck**" and can't be effectively used to create new things.

STUDY OVERVIEW

Surveyed 22,000+ small businesses in California about innovation activities during the first few months of the COVID-19 pandemic in 2020

- It focused specifically on the initial pandemic period to examine rapid innovation responses to an unanticipated crisis.
- The survey measured multiple types of product innovations (e.g. new products, new features, new delivery processes) and process innovations (e.g. social distancing adaptations, training, automation).
- It analyzed how innovation rates varied systemically by firm age, size, and capabilities (e.g. prior e-commerce and telework experience).
- This provides unique empirical evidence on how small businesses innovated during the initial uncertainty and rapid changes of the COVID-19 crisis.

KEY RESULT 1

- **70% of the surveyed businesses implemented some type of innovation in response to COVID-19.**
- This innovation rate is much higher compared to normal pre-pandemic times. Surveys of innovation in **normal times find rates of 25-35%** over a 3-year period.
- The most common COVID-19 innovation was **changing processes to enable social distancing** (41% of firms). This includes things like **curbside pickup, delivery, appoint-only interactions.**
- Another very common innovation was changing **product delivery methods** (33% of firms), like shifting to e-commerce or virtual services.
- The high rate of innovation, especially in areas like social distancing and delivery, suggests much **necessity-driven innovation to adapt to the crisis.**

KEY RESULT 2

- **Younger firms, especially startups** and those less than 5 years old, were **significantly more likely to innovate** compared to older firms. This was most pronounced for **product innovations.**
- For instance, startups had **13 percentage points higher innovation rates** than 16+ year old firms.
- This aligns with the **Schumpeter Mark I** theory that newer, entrepreneurial firms tend to be more agile innovators.
- The **greater agility and lack of inertia allowed younger** firms to more quickly pivot products, services, and business models to changed conditions.
- **This relationship held** even after controlling for industry, number of employees, revenue shock, and other factors.

KEY RESULT 3

- **Larger firms**, measured by number of employees, **were more likely to innovate** processes compared to solo entrepreneurs.
- This may be partly **explained by larger firms having more "trapped factors"** when demand decreased. These include specialized equipment, skilled employees, complex organizational processes.
- **Larger firms face higher costs and inability to eliminate trapped factors** overnight. But those unused resources could be redirected to process innovations.
- For instance, larger firms innovated more in **training workers, automation, delivery processes - redeploying resources from lower demand areas.**
- This supports the **"trapped factors"** model of innovation during demand downturns.

KEY RESULT 4

- Firms with some **prior experience in e-commerce** or **telework** before the pandemic built on those capabilities most during the crisis.
- For instance, firms with experience in e-commerce before COVID-19 had 35% **higher likelihood of expanding it compared** non e-commerce firms.
- This shows how businesses **leveraged existing capabilities** made valuable by the pandemic context.
- However, firms with **no prior experience**, and those **already fully expanded** on the capabilities, innovated less in those specific areas.
- **An intermediate level of relevance** appears optimal for capability building.

KEY RESULT 5

- The results overall show **necessity drove a high amount of creative adaptation and innovation**, especially among younger firms, larger firms, and those with some prior relevant experience.
- Faced with sudden changes, these firms **tapped their available resources** to innovatively develop new products, processes, and business models.
- **Innovation was a widespread** response across the size distribution, beyond just high-tech sectors.
- This **highlights the adaptive and dynamic nature of businesses during crisis conditions**.

IMPLICATION 1

- Governments and development organizations should promote innovation support programs, particularly during crises.
- These programs can provide funding, technical assistance, and trainings.
- For example, subsidies for R&D spending, accelerators and incubators, and digital skills programs.
- This enables small businesses to engage in innovation and adaptation during periods of sudden change.
- It allows them to modify processes, redeploy unused resources, and adjust to shocks.

IMPLICATION 2

- **Investing in complementary digital capabilities** can enable innovation when in-person interactions are restricted.
- For instance, **governments can provide shared e-commerce platforms**, virtual collaboration tools, and **digital payment systems.**
- These assets allowed businesses to shift online and **innovate delivery processes** during lockdowns.
- Digital infrastructure may have positive spillovers for innovation and resilience during crises.

IMPLICATION 3

- Innovation policy could aim to incentivize redirection of unused **"trapped factors"** towards productive uses.
- For example, tax incentives or grants for businesses that **repurpose excess equipment** or **upskill idle workers.**
- **Avoids wastage of assets and capacity** during demand downturns associated with crises.
- Puts **resources toward innovation** and adaptation rather than leaving them idle.

IMPLICATION 4

- Promoting **crisis adaptation strategies can improve** business resilience and innovation.
- This includes **continuity planning, scenario analysis, trainings**, providing information.
- Helps firms **forecast different crisis scenarios**, and prepare responses in advance.
- **Enables faster innovation and adaptation** when a crisis hits, using available resources.
- Overall, increases capacity to innovate through uncertain periods.

COUNTY POLICY MAKERS

- **Provide innovation supports like funding and training accessible** to young businesses during crises. They show greater agility but have less resources.

- Invest in **shared digital infrastructure for e-commerce, online delivery, virtual collaboration**. Enables innovation when in-person interactions restricted.

- **Incentivize productive redirection of unused resources during downturns**. Grants or tax breaks to repurpose excess equipment or workers.

- **Promote business continuity planning, trainings, and informational resources on crisis adaptation**. Builds capacity to innovate through uncertainty.

SMALL BUSINESS OWNERS

- **Cultivate crisis-relevant capabilities** you can expand on during downturns. E-commerce, virtual work, digitization.
- **Cross-train employees and build organizational flexibility**. Allows redeploying resources quickly when conditions change.
- **Evaluate innovations that streamline processes**, tap unused assets, or access new opportunities. Constraints can spark creativity.
- **Plan for crisis scenarios through exercises like cash flow forecasts**. Provides confidence to proactively innovate when adversity hits.
- **Tap local innovation supports**, digital access programs, and communities to complement limited resources.
- **Share lessons and cooperate with other businesses**. Crises often require collaborative adaptation.

EDC INNOVATION IN SUPPORT

- **Offer comprehensive advisory services**, assessing vulnerabilities, and crafting contingency plans.
- Assist in planning **exercises to test disaster preparedness** and operational flexibility.
- **Guide innovation to maintain capacity**, repurpose unused resources during downturns, and develop new revenue streams.
- **Promote shared learning** on post-disaster business pivots and industry adaptations.
- Create detailed **guides on continuity planning, cash management, accessing aid, and digital resilience tools.**
- Provide **technical support for digitization and automation** to enhance business resilience.
- **Connect businesses to funding programs**, encourage cooperative innovation, and support new business approaches.
- Assist in **protecting intellectual property** for crisis-driven innovations.
- **Deliver training on frugal innovation**, minimum viable products development, and resilience strategies.

EDC INNOVATION IN SUPPORT

Innovation in Local Government Support:

- Recommend interventions like innovation vouchers, incubators, and resilience tech clusters.
- Provide insights from businesses to inform economic relief and recovery policies after disasters and downturns.
- Share trends, challenges, and needs identified through advisory services and feedback mechanisms.
- Highlight opportunities for partnerships to support businesses with contingency planning, adaptation, and resilience.
- Encourage cross-departmental collaboration for unified crisis response and recovery efforts.

Innovation in State Agency Support:

- Inform research, assessments, and policy development on crises to include small business considerations.
- Provide feedback mechanisms to capture small business needs and experiences for inclusive policy making.
- Advise on flexible policies to account for regional impacts and business variation across different crises.
- Encourage resilient infrastructure investments that enable localized innovation and provide crisis response platforms.

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