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# Foundations of opportunity conviction: A configurational analysis of the COVID-19 recovery

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ABSTRACT

We examine the concept of opportunity conviction as a key indicator of the resilience of countries' entrepreneurial ecosystems during crises. For entrepreneurship, opportunity conviction constitutes a joint-threshold outcome: it materializes only when opportunity visibility (the presence of credible signals of near-term demand and cash-flow potential) is sufficiently high, and deterrent risk (the perceived downside given institutional stability, available buffers, and hazard control) is sufficiently low. Using data from the Global Entrepreneurship Monitor (GEM) and applying fuzzy-set Qualitative Comparative Analysis (fsQCA), we identify how configurations of foundational contextual factors combine with policy measures to foster high opportunity conviction in 2021. Five configurations demonstrate the alternative recipes of contextual and policy conditions that achieve opportunity conviction in times of crisis. Theoretical and practitioner implications are discussed.

## Introduction

The COVID-19 pandemic caused major economic and social shockwaves and greatly reduced entrepreneurial activity worldwide. Lockdowns, supply-chain breakdowns, and rapidly shifting consumer behaviors created an environment of uncertainty that had a chilling impact on most economic activity, including entrepreneurship (Storr et al., 2022). The Global Entrepreneurship Monitor (2022) documents significant drops in several entrepreneurial phenomena globally as an effect of the pandemic in 2020. We focus on 2021, a pivotal year when countries began to recover from the economic disruptions caused by the COVID-19 pandemic.

The entrepreneurship literature examines entrepreneurial resilience as the capacity of entrepreneurs or firms to adapt and recover through adversity over time (e.g., Bullough & Renko, 2013; Castelló-Sirvent et al., 2024; Liu & Harms, 2025). We contribute to that literature by analyzing an adjacent construct in the aftermath of the pandemic. Opportunity conviction, as put forth here, is a contemporaneous, country-level indicator: the share of adults who both perceive opportunities and report that fear of failure would not stop them after a shock. While it is not a longitudinal measure of bounce-back, it is a leading barometer of population-wide readiness to act under heightened uncertainty. As such, it complements resilience research by linking this macro sentiment to national configurations of contextual conditions and policy injections aimed at increasing opportunity perception and decreasing deterrent risk.

This makes opportunity conviction conjunctural rather than additive. It arises when two criteria are simultaneously satisfied: (a) *opportunity visibility*, meaning credible near-to-medium-term demand and cash-flow prospects, and (b) lower *deterrent risk*, meaning a tolerable downside given environmental predictability, wealth-based buffers, and hazard control. This does not mean that both must be optimized. Conjunctural here means the presence of both conditions, not perfection in both; one condition may be dominant in a given case. Therefore, risk may be especially low in high-stability, high-income, highly vaccinated settings, while demand may be particularly obvious in fast-growing settings. But neither side can be bindingly closed. This joint-threshold view requires a configurational approach, in which different

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combinations of structural foundations, cyclical conditions, and policy levers create alternative pathways. Specifically, we aim to identify which combinations of contextual conditions and policy interventions were associated with high opportunity conviction in the 2021 recovery phase of the pandemic.

Fuzzy-set Qualitative Comparative Analysis (fsQCA) was employed to analyze Global Entrepreneurship Monitor (GEM) country-level data. This configurational approach allows for the identification of multiple pathways to high opportunity conviction, highlighting the context-dependent nature of entrepreneurial ecosystems (Nikou et al., 2024). The solution covers 78 % of the outcome and shows that high vaccination rates frequently appear in successful configurations, while government stimulus does not appear to be helpful. Primarily, findings indicate that both aspects of opportunity conviction (opportunity visibility and low deterrent risk) play a role in each configuration. The upshot is that some configurations rely more on opportunity visibility, while others rely on reducing deterrent risk. Finally, strong underlying economic, institutional, and cultural conditions are primary, with policy interventions operating as reinforcers.

Our study broadens and deepens entrepreneurial resilience research in a few ways. First, it shifts the analysis to the country level, complementing existing resilience work that has focused on micro- and meso-level adaptation mechanisms (e.g., Bullough & Renko, 2013; Castelló-Sirvent et al., 2024; Purnomo et al., 2021). It introduces opportunity conviction as a cognitive–emotional proxy for an ecosystem's adaptive capacity and thereby links entrepreneurial perceptions and fear of failure to resilience during systemic shocks. It also introduces a configurational approach to country-level entrepreneurial and economic resilience models. Most prior resilience work has relied on linear models and net effects (e.g., Bullough & Renko, 2013; Renko et al., 2021). Finally, we contribute to the broader debate on the role of government policy for systemic resilience during major crises. Findings show that neither across-the-board dramatic intervention nor minimal state involvement is universally optimal.

## Theory and propositions

### *Opportunity conviction*

Opportunity conviction is rooted in entrepreneurial cognition theory, which explores how individuals interpret environmental stimuli and recognize entrepreneurial possibilities (Mitchell et al., 2004; Shane & Venkataraman, 2000). As discussed above, the construct combines opportunity perception with fear of failure.

As a critical first step in the entrepreneurial process, opportunity perception is influenced by both individual traits and contextual factors (e.g., Ardichvili, Cardozo & Ray, 2003). Opportunity perception is particularly challenging during crises. Volatility in the broader socio-economic environment both creates and erases new possibilities (Cucino et al., 2024).

Fear of failure has been examined from both economic and psychology perspectives (Cacciotti & Hayton, 2015) and represents an impediment to starting a business (Morgan & Sisak, 2016). The economics-based view posits that perceptions of failure hinder the likelihood of choosing entrepreneurship as a career (Arenius & Minniti, 2005). During crises, uncertainty makes it difficult for entrepreneurs to assess whether they possess the capabilities to navigate the marketplace effectively. Similarly, in the psychological view, fear of failure shapes individuals' perception of whether stimuli in the environment are sources of opportunity or threat. It is therefore heavily influenced by norms that may frame failure as a source of shame (e.g., Vaillant & Lafuente, 2007).

Although opportunity conviction is cognitive, it arises when an individual is satisfied that two external criteria are met. The first is opportunity visibility, defined as the extent to which entrepreneurs can perceive credible signals of near- to medium-term demand and cash-flow potential. The second is low deterrent risk, defined as the perception that the downside costs of entrepreneurial action are tolerable, given the predictability of institutions, the presence of buffers such as wealth and safety nets, and the degree of hazard control. Thus, opportunity conviction is best understood as a joint-threshold construct that materializes when the two constraints are simultaneously satisfied.

This two-gate model means that opportunity conviction does not emerge from "more is always better" across all conditions. Instead, entrepreneurs act when both gates are *sufficiently* open: there must be *enough evident upside,* and the *downside risk must be low enough* to make action reasonable. Importantly, these thresholds need not be symmetric. In some contexts, the risk constraint may be so relaxed that only modest opportunity signals are required; in others, the demand side may be so strong that entrepreneurs proceed despite thinner buffers in the event of a downswing. The framework therefore explains why configurations weighted toward structural conditions (e.g., stability, income, vaccination) and those weighted toward cyclical signals (e.g., growth) can both yield high conviction.

**Proposition 1**. *Entrepreneurial opportunity conviction is conjunctural in nature: it arises only when opportunity visibility (credible near-term demand) and low deterrent risk (manageable downside given stability, buffers, and hazard control) are simultaneously present. Configurations that heighten one condition while failing to clear the threshold on the other will not generate high levels of opportunity conviction.*

**Proposition 2**. *High opportunity conviction can emerge through two distinct anchoring routes. A structural-anchor pathway clears the deterrent-risk threshold by combining institutional stability, buffers, and hazard control, even if demand signals are only moderate. By contrast, a growth-anchor pathway clears the opportunity-visibility threshold by generating strong, credible demand cues, even under conditions of moderate risk*.

### *Foundational contextual conditions*

We can further categorize the causes of opportunity conviction into two sets of conditions: contextual foundations and policy injections. We now turn to the four contextual conditions that form the basis of our model.

#### *Uncertainty avoidance*

Uncertainty avoidance both undermines opportunity visibility (by narrowing perceptions of credible demand) and simultaneously raises deterrent risk (by amplifying the perceived downside of entrepreneurial failure). Because "uncertainty-avoiding cultures shun ambiguous situations" (Hofstede, 2001: 148), high uncertainty avoidance steers would-be founders away from new-venture entry, when ambiguity spikes in a crisis. As a cultural dimension, uncertainty avoidance tends to amplify the adverse effect of fear of failure on entrepreneurial intentions (Wennberg, Pathak & Autio, 2013) by negatively impacting individuals' risk-taking attitudes. Additionally, individuals in high uncertainty avoidance cultures perceive the risks associated with entrepreneurship as disproportionately high (Kreiser et al., 2010). During the pandemic, challenges such as health risks, rapidly changing regulations, supply-chain disruptions, fluctuating consumer demand, and limited access to financing (Brown & Rocha, 2020) heightened the perceived risks associated with business ownership. In times of crisis, a cultural predisposition to avoid uncertainty, combined with societal stigmatization of failure, lowers the likelihood of opportunity perception (Mueller & Thomas, 2001) and increases fear of failure. Thus, high uncertainty avoidance is a headwind in crises.

*Political stability*

Political stability primarily serves to reduce deterrent risk in our model. Stable institutional environments decrease the uncertainty associated with reading market signals and increase the likelihood of returns, which are central to entrepreneurial opportunity recognition (Shane & Venkataraman, 2000; Aidis, Estrin & Mickiewicz, 2008). During crises, political stability can assure entrepreneurs that the institutional framework for value creation and appropriation will persist despite external shocks. Similarly, trust in stable institutions legitimizes government actions and creates expectations of consistent policy enforcement, reducing perceived financial risks (Muringani, Fitjar & Rodríguez-Pose, 2024). Under these regimes, entrepreneurs expect that reliable resources, infrastructure, and regulations are in place to manage adverse shocks. Empirical evidence shows that higher political stability speeds recovery, by reducing uncertainty (Gao & Liu, 2023). In stable political regimes, entrepreneurs do not worry that the opportunities they are recognizing are fool's gold.

*GDP growth*

GDP growth increases opportunity visibility by signaling expanding markets and rising demand, but it has little direct effect on lowering deterrent risk. In response to GDP growth, entrepreneurs perceive higher rewards in starting or expanding ventures, as improving economic conditions reduce the likelihood of business failure (Bosma, Wennekers & Amorós, 2012). As incomes rise, markets expand and increase the scope of economic opportunity for new firms and exchange. This, in turn, enhances access to credit and investment (Beck, Levine & Loayza, 2000). Economic growth is also often accompanied by institutional improvements like streamlined regulations and supportive policies (Minniti, 2008). This increases the likelihood that entrepreneurial activity and attitudes will resiliently "snap back" to pre-crisis levels.

*GDP per capita*

GDP per capita generally raises opportunity conviction by both increasing opportunity visibility (through broader consumer demand) and lowering deterrent risk (by providing buffers and institutional strength). Yet this effect is nonlinear: in low-income countries, incremental gains in GDP per capita can substantially expand opportunity sets, whereas in high-income countries, additional income has diminishing marginal returns.

In wealthier countries, robust social safety nets and economic support mechanisms reduce fear of failure for potential entrepreneurs. Strong institutions foster opportunity-driven entrepreneurship by supporting innovation and business creation (Aparicio, Urbano & Audretsch, 2016; Boudreaux & Nikolaev, 2019). Furthermore, higher GDP per capita provides a form of economic safety net, both through stronger public welfare systems and greater personal financial reserves, reducing the existential cost of failure (Smith & Lanivich, 2023). Government programs that encourage and protect entrepreneurship, coupled with broader economic freedom, also enable individuals to pursue ventures with less personal risk (Dutta & Sobel, 2021). At very high-income levels, however, accumulated wealth and comprehensive safety nets can reduce the necessity of entrepreneurial action in times of crisis: the opportunity set does not shrink, but additional opportunity entrepreneurial gains become relatively less compelling where most basic needs and many wants are already secured.

Conversely, in lower-income countries, entrepreneurship is often driven by increased incentives, as individuals seek to secure their livelihoods in the absence of economic munificence and adequate support systems (Muñoz-Mora et al., 2022). In these contexts, the marginal utility of additional income (gains from entrepreneurship) is much higher (cf. Layard et al., 2008) Making the pursuit of available opportunities more attractive even when buffers and institutions are weaker.

*Policy interventions*

The COVID-19 pandemic exposed two contrasting views on the role of government policy in crises. One school of thought, rooted in classical-liberal economics, suggests that mandated lockdowns offered only limited additional benefits, while imposing significant economic disruption. This would indicate that voluntary behavioral adjustments and a country's underlying institutional conditions can play a larger role in shaping outcomes than policy interventions (Herby, Jonung & Hanke, 2025). In contrast, work grounded in public-goods and collective action theory emphasizes that emergencies like pandemics create coordination failures that require decisive state intervention. The belief here is that economic activity needs confidence in the state of public health. This view emphasizes that early and stringent public health measures can reduce mortality and create the institutional stability necessary for recovery (Correia, Luck & Verner, 2022).

Perhaps these clashing perspectives suggest that the right response is context specific. That is, in some contexts, the configuration of strong underlying conditions may allow lighter-touch policies to sustain entrepreneurial resilience, while in others, robust policy interventions are necessary to compensate for institutional weaknesses or high uncertainty avoidance. A configurational approach can test to see whether the two approaches can each produce high levels of opportunity conviction. The potential impacts of three popular policies during the pandemic are discussed below.

*Vaccination rates*

If the public-goods school of thought is correct, it is likely that higher vaccination rates reduce deterrent risk by limiting health hazards and restoring safe conditions for exchange. This is because contextual uncertainty and ambiguity significantly contribute to fear of failure (Cacciotti et al., 2020). In fact, a good deal of evidence supports the idea that high vaccination rates signify effective public health management: fostering safety, stability, and higher economic activity (Deb, Furceri, Ostry & Tawk, 2022; Tito & Sexton, 2022). Bizjak et al. (2024, p. 1) found that "A 10-percent increase in vaccination rates results in a 4-percent to 6-percent increase in customer visits" for US businesses. Globally, higher vaccination rates were linked to reduced workplace restrictions, increased working hours, and an average addition of one full-time equivalent job for every 14 vaccinated individuals in 2021 (ILO Monitor, 2021). Reducing external threats fosters an optimistic and resilient mindset, increasing the likelihood of acting on opportunities (Cacciotti & Hayton, 2015). Thus, high vaccination rates may reduce perceived risks by creating predictability, enabling individuals to focus on entrepreneurial activities without health concerns.

*Policy stringency*

Not surprisingly, the two schools of thought (classical liberal economics and public goods) have opposing viewpoints on the potential impact of policy stringency. Policy stringency may reduce opportunity visibility by directly suppressing demand through restrictions (classical liberal). However, others argue it can also contribute to lower deterrent risk, since hazard containment can stabilize expectations in otherwise volatile contexts (public goods).

On the one hand, stringent lockdowns characterized by business closures and mobility restrictions produced significant economic disruptions in many countries, leading to reduced revenues and increased uncertainty (Mandel & Veetil, 2020). The operational challenges posed by the lockdowns decreased opportunity visibility. Small business activity in the United States dropped by 22 % due to strict lockdown measures (Fairlie, 2020). Cowling, Brown and Rocha (2020) found that small and medium-sized firms experienced significant cash flow challenges during lockdowns. In addition, severe restrictions had a negative psychological impact (Li et al., 2022).

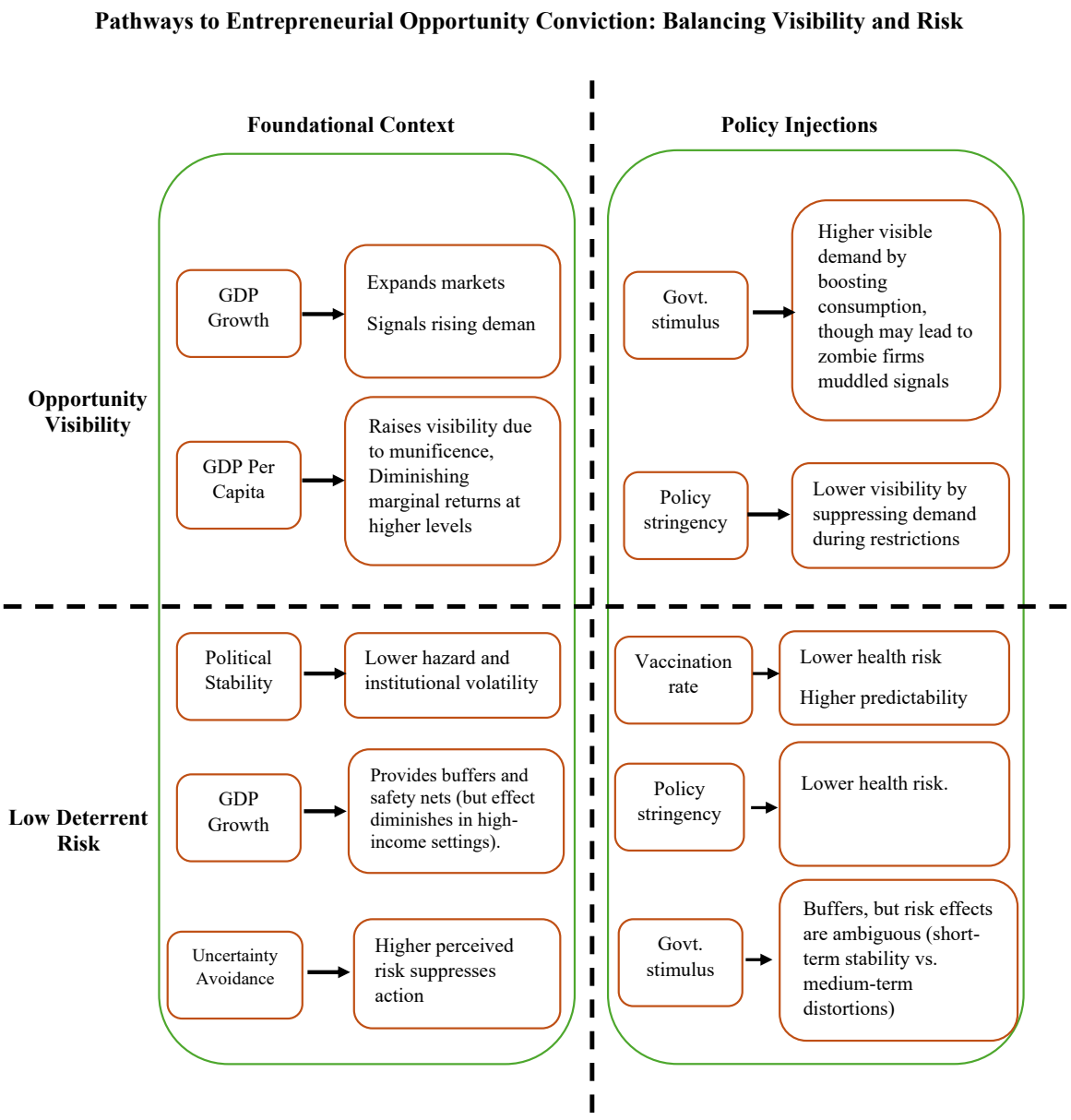


**Fig. 1.** Pathways to entrepreneurial opportunity conviction: balancing visibility and risk.

Conversely, strict lockdowns may have lowered deterrent risk via more confidence in public health when individuals view these measures as necessary and well-implemented. For instance, "in New Zealand, people reported increased trust in politicians and police" (Sibley et al., 2020, p. 626). This trust creates a supportive environment for entrepreneurship, reducing the perceived risks associated with entrepreneurial activities. In summary, policy stringency's main impact would initially seem to be largely negative on opportunity conviction due to reduced demand visibility, but lockdowns and the like also may have lowered deterrent risk.

*Government stimulus*

The effect of government stimulus on opportunity conviction seems largely positive due to an increase in opportunity visibility. However, it can also muddy opportunity visibility in some situations by distorting economic signals.

On the positive side, government stimulus stabilizes demand and market potential during crises. Generous support measures boosted household consumption in many economies during the pandemic, reassuring entrepreneurs about near-term viability (De Soyres, Santacreu & Young, 2023). In the United States, fiscal interventions coincided with a surge in new business applications and strong small-firm job creation (Van Nostrand, 2024). Recent evidence also points to fiscal transfers bolstering trust in government and the broader institutional environment (Chen, Hang & Wang, 2024). From this perspective, stimulus packages should increase opportunity conviction by supporting demand.

Yet, from a more *laissez-faire* or Austrian-school standpoint, stimulus can also undermine opportunity conviction via the misallocation of resources. Research shows that expansive packages risk sustaining low-productivity "zombie" firms, which can crowd out new entrants and slow the reallocation of resources to higher-value uses (OECD, 2017; Autor, 2022). In this view, stimulus may actually dampen opportunity conviction via its confusion of market signals.

**Table 1**
Data sources and measures for each condition.

| Condition | Source | Measure(s) |
|---|---|---|
| **Opportunity Conviction** | Global Entrepreneurship Monitor (2022) | Percentage of individuals who perceive entrepreneurial opportunities and do not express fear of failure. The latest pre-pandemic figure was used as a "gate" for excluding long run underperforming countries. The 2021 measure was used as the outcome for the main analysis. |
| **Vaccination Rate** | World Health Organization (2021) | Percentage of the population fully vaccinated against COVID-19 as of July 31, 2021. |
| **Policy Stringency** | Oxford Analytica (2021) | Composite stringency index measuring the strictness of government responses, including lockdowns and mobility restrictions. |
| **Government Stimulus** | International Monetary Fund (IMF, 2021a) Fiscal Monitor database | Total government stimulus measures (e.g., direct transfers, loans) as a percentage of GDP as of July 31, 2021. |
| **Political Stability** | World Bank (2021a) World Governance Indicators | Political Stability and Absence of Violence/Terrorism index, measuring perceptions of stability and safety in governance. |
| **Uncertainty Avoidance** | Hofstede Insights (n.d.) | National cultural score for uncertainty avoidance, reflecting societal tolerance for ambiguity and unpredictability. |
| **GDP Growth** | World Bank, 2021b | Annual percentage GDP growth in 2021, reflecting economic contraction or recovery during the pandemic. |
| **GDP Per Capita** | World Bank (2021c) | GDP per capita in constant 2015 international dollars for 2021, adjusted for purchasing power parity (PPP). |

**Table 2**
Descriptive statistics.

| Condition | Max. | 75th Percentile (full member-ship) | Median (crossover) | 25th Percentile (full non-member-ship) | Min. | Mean | SD |
|---|---|---|---|---|---|---|---|
| Pre-Pandemic Opportunity Conviction % | 48 | 40 | 32 | 24 | 6 | 32 | 0.098 |
| 2021 Opportunity Conviction % | 51 | 39 | 30 | 25 | 6 | 31 | 0.11 |
| Vaccination Rate | 76 | 64 | 57 | 41 | 10 | 51 | 18.0 |
| Policy Stringency Rating 2021 (Hale et al., 2021) | 74 | 57 | 49 | 40 | 19 | 49 | 11.8 |
| Government stimulus ( % GDP) | 46 | 17 | 10 | 5 | .6 | 14 | 11.7 |
| Political Stability (WGI Avg) | 1.3 | 0.69 | 0.38 | −0.44 | −1.71 | 0.16 | 0.76 |
| Uncertainty Avoidance (Hofstede) | 100 | 86 | 75 | 59 | 29 | 71.6 | 19.6 |
| GDP Growth Rate Average | 9.5 | 2.4 | 1.5 | 0.3 | −2.6 | 1.6 | 1.89 |
| GDP Per Capita in 2015 $ | 107,500 | 42,600 | 18,600 | 10,400 | 1000 | 29,300 | 25,500 |

*Policy intervention as contingent on context*

The foundational contextual conditions are the country's underlying entrepreneurial ecosystem (i.e., formal and informal institutions as well as economic conditions such as political stability, economic development, economic growth, and uncertainty avoidance). These contextual foundations create the background environment in which entrepreneurs perceive and evaluate opportunities. Policy interventions (i.e., policy stringency like lockdowns, government stimulus, and vaccination rates) are then injected more directly into the crisis moment.

Durable recovery depends on institutional fundamentals like predictable governance, latent demand, and cultural characteristics rather than short-run stimuli alone. These institutions are the fundamental drivers of long-run performance across countries (Hall & Jones, 1999; Acemoglu, Johnson & Robinson, 2005). In the pandemic setting, policies that help restore countries to baseline conditions may unlock both economic activity and compliance, illustrating that policy is most effective when it reinforces strong foundations (OECD, 2017; Deb et al., 2022). Indeed, evidence shows that income supports and other broad packages stabilized secondary declines but did not, on their own, restore contact-intensive activity while health risks remained elevated. Spending fell primarily because of infection risk, not lack of cash, so demand for in-person sectors recovered only as risk abated (Chetty et al., 2020). These interventions complement, rather than replace, the contextual foundations. In some cases, strong contextual anchors may be enough; in others, targeted policy measures may help offset weaknesses in the foundation. This concept of multiple viable pathways is equifinality (Misangyi et al., 2017; Meuer & Fiss, 2020). In short, policy levers work best on a solid foundation. Without that base, they rarely produce opportunity conviction.

**Proposition 3**. *Policy interventions do not by themselves generate high opportunity conviction. Their effect depends on the presence of a solid*

**Table 3**
Sufficiency Analysis Results for the Presence of Opportunity Conviction.

| Condition / Conf. | 1a | 1b | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Uncertainty Avoidance | ⊗ | ⊗ | | | |
| Political Stability | ● | | ● | ● | |
| GDP Growth | | ● | | | ● |
| GDP Per Capita | ● | ⊗ | ● | ● | ⊗ |
| Vaccination Rate | ● | ● | | ● | |
| Policy Stringency 2021 | | | ⊗ | | |
| Government stimulus | | | | ⊗ | ⊗ |
| **Raw Coverage** | 0.34 | 0.04 | 0.32 | 0.25 | 0.22 |
| **Unique Coverage** | 0.12 | 0.02 | 0.14 | 0.06 | 0.18 |
| **Consistency** | 0.88 | 1.00 | 0.86 | 0.95 | 0.85 |
| **Exemplar Country** | Norway | Brazil | Sweden | Qatar | Guate--mala |
| **Solution Coverage** | 0.78 | | | | |
| **Solution Consistency** | 0.88 | | | | |

*contextual foundation.*

Fig. 1 illustrates how the causal conditions contribute to opportunity visibility and/or low deterrent risk. It depicts the mechanisms whereby each causal condition maps to the outcome.

## Method

We used cross-national data collected mainly after the peak of the COVID-19 pandemic. Data from the GEM Adult Population Survey (APS) was used for the outcome opportunity conviction. To calculate opportunity conviction, we used two survey items. Respondents were first asked whether they perceived good opportunities to start a business in the next six months. Only those who answered "yes" received a follow-up question on whether fear of failure would prevent them from acting. For each country, we calculated the proportion of opportunity-perceivers who did *not* report fear of failure and then multiplied this figure by the overall share of the adult population who perceived opportunities. The resulting measure expressed the percentage of the adult population who both saw opportunities and did not fear failure. To operationalize the other causal conditions, we gathered data from multiple sources. We detail the data in Table 1.

Government stimulus was measured as the IMF's total fiscal and monetary stimulus as a share of GDP. Policy stringency came from the 2021 Oxford COVID-19 Government Response Tracker index. Vaccination rates (as of July 31, 2021) were retrieved from Our World in Data. Uncertainty avoidance was taken from Hofstede Insights (n.d.); for missing values, regional figures (e.g., Eastern Europe) were used. Political stability came from the World Bank's Worldwide Governance Indicators. GDP per capita (constant 2015 USD) and 2021 GDP growth were also from the World Bank. After merging sources, the analytic sample comprised 42 countries with complete data. Cases with missing values on any condition were excluded. Descriptive statistics and calibration anchors are noted in Table 2.

We treated pre-pandemic opportunity conviction as a distal scope condition. This is consistent with QCA practice of defining scope conditions ex ante to focus on cases where the outcome is feasibly producible (Ragin, 2008). This gating approach follows best practice in QCA to focus attention on contexts where entrepreneurial dynamics were plausibly active (Ragin, 2008; Schneider & Wagemann, 2012). As the remote condition, we used pre-pandemic opportunity conviction.[1] To retain as many theoretically viable cases as possible while excluding contexts where high opportunity conviction is implausible, we included countries whose pre-pandemic opportunity conviction was at least one-half of the leading country's level. This relative viability threshold retained the top two-thirds of cases (28 of 42). Countries below that cut have very weak preexisting opportunity conviction, so the model's mechanisms (contextual anchors and injected policies) are unlikely to produce high opportunity conviction there, especially in crisis. This restriction reduced contradictory configurations by excluding cases that did not meet the conceptual domain of the resilience-related outcome. In Ragin's direct method, this corresponds to pre-pandemic opportunity conviction membership scores above 0.2 (28 of 42 economies), which were then retained for the second-step analysis.

Fuzzy set qualitative comparative analysis (fsQCA) (Ragin, 2007) was then employed on the reduced sample to investigate opportunity conviction in 2021. FsQCA is particularly suited for analyzing conjunctural causation and equifinality, which are central to this study. The direct calibration method was used to convert raw data into fuzzy set membership scores on a scale from 0 to 1 (Fiss, 2011). For all variables, the 75th percentile of the sample distribution was set as the threshold for full membership, the 25th percentile as the threshold for non-membership, and the median as the crossover point. This approach ensures comparability across variables and aligns with established guidelines for calibration (Ragin, 2007).

Consistency measures the degree to which causal conditions overlap with the outcome. For consistency and PRI thresholds, we adopted a conservative cutoff of 0.80 in line with common practice in recent high-impact QCA studies (e.g., Beynon et al., 2016; Fiss, 2011; Greckhamer et al., 2018). Frequency, which reflects the number of instances in which a given combination of conditions appears in the dataset, was set to 1. We could not raise the frequency threshold further without dropping >25 % of the total cases, which would have violated the norm in the literature (see Greckhamer et al., 2013).

We conducted both necessity and sufficiency analyses (cf. Fainshmidt et al., 2022). Necessity analysis identified whether any single condition is required for high opportunity conviction. Sufficiency analysis examined combinations of causal conditions that reliably produced the outcome.

## Results

### *Necessity analysis*

The necessity analysis indicated that no single condition, whether present or absent, was necessary for high levels of opportunity conviction in 2021. This finding reinforces the need to examine combinations of conditions rather than focusing on isolated factors, supporting Proposition 1.

### *Sufficiency analysis*

The sufficiency analysis identified five configurations of conditions sufficient for high opportunity conviction in 2021. The intermediate solution is presented, with the parsimonious solution overlaid to highlight core conditions. Results of the Sufficiency Analysis are in Table 3.

### *Solution coverage and consistency*

Together, the five configurations cover 78 % of cases with a solution consistency of 0.88. Each configuration represents a distinct route to sustaining opportunity conviction during the crisis.

### *Proposition evaluation*

#### *Proposition 1: Conjunctural causation due to opportunity visibility and low deterrent risk*

The results provide some support for Proposition 1, which argued that high opportunity conviction emerges only when both opportunity visibility and low deterrent risk conditions are satisfied. Across Configurations 1a through 3, no single condition was sufficient on its own; instead, conviction consistently appeared in conjunctures where visible upside was paired with tolerable downside risk. The edge case is Configuration 4, which does not have any clear risk-reducing mechanisms; however, note that the presence of multiple "doesn't matter" conditions suggests that deterrent risk was managed through varying mechanisms across the countries in this configuration, rather than through a single dominant stabilizer. The overall solution coverage of 0.78 and consistency of 0.88 further underscore that conjunctural causation, rather than additive effects, explains the emergence of opportunity conviction across cases.

#### *Proposition 2: Equifinality due to mechanism emphasis*

The results lend partial support to Proposition 2, which proposed that high opportunity conviction can emerge through either structural-anchor (risk-light) or growth-anchor (demand-clear) pathways.

[1] Remote conditions may *foster* the outcome by shaping the background in which proximate causes operate (Schneider & Wagemann, 2012). We therefore interpret pre-pandemic opportunity conviction as a *contextual gate* rather than a necessary condition.

Configurations 1a and 1b both emphasize deterrent risk reduction through political stability and vaccination, with GDP (level or growth) serving as the opportunity signal. Configurations 2 and 3 reflect more balanced pathways, where risk and opportunity are jointly satisfied. Political stability and vaccination lower deterrent risk, while GDP level and the absence of a distorting stimulus sustain credible demand. Configuration 4 provides the growth-anchor pathway, as opportunity conviction here appears to be driven by strong GDP growth.

*Proposition 3. Policy as injected amplifier*

The findings on Proposition 3 are more nuanced but also largely supported. Underlying contextual patterns seem to be more integral to results than a flood of intervening policies. Vaccination emerges as the most consistent amplifier, present in Configurations 1a, 1b, and 3, where it reinforced contextual anchors by reducing uncertainty. By contrast, policy stringency appears only in the negative space: Configuration 2 (exemplified by Sweden) suggests that conviction can be sustained in the absence of lockdowns, provided growth is strong. Government stimulus does not appear as a core contributor in any sufficient pathway and is instead peripheral or core absent. Configuration 4 (exemplified by Guatemala) demonstrates that conviction can arise even without any policy supports, so long as strong economic growth is in place. These patterns seem to indicate that policy can amplify favorable contexts but rarely generate conviction on its own.

Next, we discuss the complementarity observed within the five configurations by looking at exemplar countries from each. While the exemplar countries (e.g., Norway) we use below are useful illustrations, each configuration other than 1b (Brazil) is supported by three or more cases.[2]

*Configurations 1a & 1b: Deterrent risk reduction through vaccination*

Configuration 1 unfolds in two distinct but theoretically equivalent ways that each include high vaccination rates as a core condition. Norway entered the pandemic with strong fiscal reserves, high institutional quality, and a resilient social safety net. The IMF noted that Norway "weathered the health and economic crisis relatively well" due to early travel restrictions, sustained structural features such as high employment in remote-capable jobs, and monetary and fiscal flexibility (IMF, 2021b). The country swiftly rolled out vaccines: by mid-2022 over 80 % of the population received the first dose, and approximately 75 % had completed full vaccination. This combination of prior structural strength and high vaccination created a context of reduced risk and uncertainty, enabling entrepreneurs to perceive and pursue new opportunities even amid a global crisis. In Configuration 1a, opportunity visibility was preserved through high purchasing power and rapid reopening, while deterrent risk was kept low by political stability, fiscal wealth, and one of the fastest vaccination rollouts in Europe. This represents a structural-anchor route, where a strong institutional base ensures that entrepreneurs continue to see opportunities and perceive risk as manageable.

Brazil's 2020 recession was steep, but the country rebounded sharply, with real GDP growth estimated at 4.6 % according to the Investment Climate report (IDB, 2021). This growth generated consumption, demand, and optimism even as institutional responses lagged. Brazil also ramped up its vaccination campaign: starting in January 2021, the country administered millions of doses against substantial opposition, presumably preventing several hundred thousand deaths through December 2021. Here, strong growth cuts through institutional fragility, while vaccination added a crucial layer of credibility, reducing risk enough to support opportunity conviction. In both paths, vaccination serves as the injection that boosts the existing context to sustain entrepreneurial optimism. In Configuration 1b, rapid economic growth reopened opportunity visibility even in the presence of institutional weakness, while vaccination reduced deterrent risk to a tolerable level.

*Configuration 2: Growth with low stringency*

As an example for Configuration 2, Sweden charted a unique path during the pandemic. Sweden eschewed formal lockdowns and relied on voluntary social distancing and individual responsibility rather than mandates. School closures, mask mandates, and business shutdowns were mostly avoided, while the Public Health Agency managed the response under a science-driven, decentralized governance structure (Andersson & Jonung, 2024). This hands-off approach helped preserve a degree of normal economic activity. In response, Sweden's economy showed resilience: GDP recovered strongly in 2021 after 2020's dip, supported by demand in services and domestic consumption (European Commission, 2022). People trusted public institutions, and high income supplied demand. Low stringency functioned as an enabling absence, allowing entrepreneurs to perceive continuing opportunity in the downturn. Sweden's experience exemplifies how high institutional trust and economic resources can substitute for active policy boosts, preserving opportunity conviction by minimizing disruption. Overall, Configuration 2 showed how to maintain opportunity visibility (avoiding strict lockdowns and keeping market contact intact), while deterrent risk was reduced through stable governance.

*Configuration 3: Wealth and moderate intervention (Qatar path)*

Configuration 3 reflects an informative blend: high GDP per capita as a foundational anchor and minimal government stimulus, with vaccination and political stability playing supporting roles. Qatar is an example here. Qatar sits among the richest countries globally by GDP per capita, boasting one of the strongest institutional and fiscal positions in the Gulf region. Despite these strengths, Qatar's fiscal response to the pandemic was modest: the state's discretionary spending amounted to only about 0.4 % of GDP, far below levels seen in most advanced economies (World Bank 2021d).

At the same time, Qatar's rapid vaccination rollout played a critical role in reducing risk and restoring public confidence. Leading indicators in early 2021 already showed a robust recovery closely tied to vaccine deployment, and this undercut uncertainty without relying on big stimulus packages (PwC Qatar Economy Watch, 2021). Its ongoing institutional stability added a further layer of credibility that supported entrepreneurial conviction despite the absence of large fiscal interventions. Overall, in Configuration 3, opportunity visibility was supported by very high-income levels, while deterrent risk was kept low through political stability and rapid vaccination, even without large-scale fiscal intervention.

*Configuration 4: Growth-led pathways in resource-limited contexts*

Configuration 4 illustrates how countries with limited fiscal capacity can still sustain high opportunity conviction when economic growth provides the necessary momentum. Guatemala offers a vivid example. After a mild contraction in 2020, its economy expanded by roughly 4 % in 2021, buoyed by resilient remittance inflows and recovering domestic demand (Oxford Analytica, 2021). With low GDP per capita and weak social safety nets, Guatemala lacked the resources to mount large-scale stimulus programs. Instead, growth functioned as the primary anchor of entrepreneurial optimism. This is consistent with broader patterns in emerging economies like Egypt and Morocco, where limited state intervention and modest recovery nonetheless provided enough demand signals for entrepreneurs to perceive viable opportunities.

Importantly, the absence of stimulus may have been a strength rather than a weakness in such settings. In resource-constrained contexts, expansive packages often risk corruption, misallocation, or sustaining

[2] What matters more, analytically, is not the single example but the recurring combinations of contextual and policy conditions they embody.

low-productivity incumbents that crowd out new entrants. South Africa provides a foil: despite more generous fiscal policies, entrepreneurial dynamism lagged as government involvement may have muddied economic signals and reduced dynamism. Guatemala's trajectory underscores that in lower-income contexts, growth itself can substitute for institutional wealth or policy intervention, and heavy-handed stimulus might even backfire. In Configuration 4, opportunity visibility was reopened by strong growth and rising demand momentum, while deterrent risk was not binding (the "doesn't matter" conditions can be substitutes and deter risk in different ways). This growth-anchor route illustrates how economic expansion can sustain conviction in resource-constrained contexts.

*Robustness tests*

Five robustness tests were used to assess solution stability under varying thresholds. Tests 1 and 2 used looser criteria (consistency = 0.75 with PRI = 0.75; consistency = 0.80 with PRI = 0.70) and produced identical results. These tests reproduced all five main configurations while also yielding two additional configurations: one in subset relation with Configuration 4 and a second with European countries that are found in Configuration 2. The one notable thing about these configurations that diverges from the directionality implied by theory is that both contain the absence of vaccination (peripheral in one but core in the other). The reason for this finding is not intuitively obvious. Coverage with these relaxed thresholds actually decreases. By contrast, Tests 3–5 applied stricter criteria (consistency = 0.85 with PRI = 0.85; consistency = 0.85 with PRI = 0.80; and consistency = 0.85 with PRI = 0.75), and in every case, the solutions duplicated the main results exactly. Taken together, these additional analyses show that the five reported configurations are stable across rigorous threshold variations, while the peripheral pathways surface only under less rigorous standards and do not alter the substantive conclusions.

## Discussion

The results affirm the configurational logic at the heart of the three propositions. Opportunity conviction does not emerge from any single condition but from multiple distinct pathways that varied across contexts. Some countries sustain conviction through institutional strength and wealth, others through growth, and still others through permissive conditions that limited disruption. That all five sufficient configurations differ in composition yet converge on the same outcome underscores equifinality: entrepreneurial ecosystems adapt to crisis in varied but equally viable ways.

*Opportunity visibility vs low risk deterrence*

Taken together, the three propositions point to a distinctive pattern in how entrepreneurial ecosystems sustain conviction during crises. First, both opportunity visibility and tolerable risk must be considered in tandem when explaining how ecosystems adapt under systemic shock. Opportunity conviction arises only when both elements are accounted for. This theme aligns with Proposition 1 and also cognitive theories of entrepreneurship, where perceptions of both opportunity and threat must cross threshold levels before action follows. It also underscores that entrepreneurial ecosystems are not built on a single pillar but on interdependent structures that reinforce one another.

Second, different configurations achieve this balance in asymmetrical ways. In some contexts (Configuration 1a), structural stability (political order, wealth, institutional quality) lowers perceived risk sufficiently for opportunity signals to be acted upon. In others, dynamic growth (Configuration 4) amplifies visibility to the point that entrepreneurs are willing to proceed despite residual risks. This asymmetry supports Proposition 2 and highlights that ecosystems need not solve every problem at once; they can compensate for weaknesses in one dimension by amplifying another.

*Country-level resilience*

Another contribution is our framing of how opportunity conviction serves as a useful barometer for systemic resilience. When entrepreneurs perceive both credible demand and tolerable risk, it signals that the broader economic and institutional environment can sustain adaptive capacity under shock. Unlike firm-level measures of recovery, this construct reflects how systemic shocks reverberate through populations' willingness to perceive and act on opportunity.

As a corollary, it is important to understand that at the country level, resilience is a collective property that enables or constrains individual economic action (Eichengreen et al., 2024). Because firms are linked through input, output, credit, and demand networks, selective improvement is rare: when aggregate demand is weak, exchange is suppressed, or market dynamism falls, even resourceful founders have limited room to adapt. Visibility of opportunity and perceptions of deterrent risk are shaped by system-wide signals like consumer spending, supplier reliability, credit conditions, and credible policy. But they are also influenced by peers' actions that make demand more legible and reduce coordination risk. Country-level resilience thus sets the opportunity frontier within which entrepreneurial ecosystems can start to flourish again.

*Government stimulus?*

One particularly surprising result concerns government stimulus. Contrary to Keynesian logic[3] and some prior studies (De Soyres et al., 2023), the absence of stimulus appeared in two sufficient configurations for high opportunity conviction, while its presence did not appear. This suggests that in some settings, stimulus may cloud entrepreneurial judgment by propping up marginal firms or amplifying uncertainty about the true trajectory of demand. The result resonates more closely with Austrian economic perspectives (Douhan et al., 2007), which emphasize the distortive potential of intervention, and points to an underexplored dynamic requiring further investigation before firm conclusions can be drawn.

*Public health link*

Among policy levers, vaccination deserves special attention. It coincided with higher conviction in three of the five configurations, suggesting an underexplored link between public health management and entrepreneurial confidence. The mechanisms are intuitive: vaccines reduce perceived risk, normalize social and economic activity (Kirson et al., 2022), and signal government competence. Yet entrepreneurship research rarely treats public health as a central variable. Our findings suggest it should be, especially when crises raise uncertainty in ways that undermine entrepreneurial judgment.

*Lockdowns unhelpful?*

Lockdowns and restrictions illustrate the dual logic of policy. In theory, stringent measures can reassure by signaling decisive action, but in practice they often stifled business continuity and heightened uncertainty. This could be because people policed themselves and practiced social distance voluntarily to a large extent. Consistently, evidence shows the 2020 economic decline tracked perceived infection risk more than mandates, with voluntary pullbacks explaining much of the

[3] This is contextual and not necessarily an anti-Keynes "gottcha." Keynes targeted macro-indicators like aggregate demand, employment, etc., not "opportunity conviction." However, Austrian concerns with micro foundations, price signals, and misallocation do align more with this finding.

demand shock (Goolsbee & Syverson, 2021; Maloney & Taskin, 2020). At the same time, historical evidence, as well as our finding about vaccination rates, shows that health-first interventions do not necessarily depress recovery (Correia, Luck & Verner, 2022). Our solutions reconcile these views: policy stringency is not universally harmful, but it does reduce conviction (contingently) when coupled with stability, wealth, and credible public health management (Configuration 2).

*Policy implications recast*

As discussed earlier, the findings do support Proposition 3. Structural anchors such as GDP per capita, growth, and political stability provide the base on which policies like vaccination campaigns can operate effectively. This is aligned with prior studies, showing political stability and trust as determinants of crisis outcomes and economic performance (e.g., Gao & Liu, 2023; Muringani et al., 2024). In fact, our growth-anchored pathways (e.g., Configuration 4) suggest that when credible demand rebounds, conviction can recover even without heavy policy injections. This is consistent with studies linking macroeconomic growth to expanded opportunity perception (Stuetzer et al., 2014) and the broader resilience literature that emphasizes contextual capacity (Eichengreen et al., 2024). While countries reach high conviction through varied routes, the results show that intervention intensity was not decisive and that only vaccines consistently led to opportunity conviction. Policymakers therefore need context-specific mixes and should practice relative, but not total, restraint with respect to entrepreneurship.[4] Collectively, the propositions indicate that entrepreneurial conviction is an emergent outcome of workable blends of structure, growth, and policy.

*Generalizability to future crises*

Although our analysis is situated in the COVID-19 pandemic, the relevance of opportunity conviction is not limited to this case. In future crises, opportunity conviction should arise from the same joint-threshold dynamic: opportunities must be visible, and deterrent risks must be kept within tolerable bounds. Of course, in future crises, the concrete policy instruments that raise visibility or reduce deterrent risk will differ. Countries will not vaccinate against hurricanes! But the foundational contextual conditions and overall framework are robust. In sum, by conceptualizing opportunity conviction as opportunity visibility plus low deterrent risk and also as context plus policy, we show how ecosystems can preserve entrepreneurial readiness when confronted with uncertainty of many kinds.

*Limitations and avenues for future research*

This study has several limitations that open avenues for future research. First, our analysis is cross-sectional, capturing conditions in 2021, which prevents us from tracing how configurations support opportunity conviction over time. Future studies could employ longitudinal or event-sequence methods to examine how opportunity conviction shifts across crisis and recovery phases. Second, our construct of opportunity conviction, while innovative, is based on macro-level perceptions at a single point in time rather than observed behaviors over time. Third, despite the above robustness tests, our justification for consistency threshold choices, membership calibration anchors, and consistency/coverage cutoffs is necessarily concise and based on prior literature recommendations. However, alternative defensible settings can shift the truth table somewhat and perhaps lead to a slightly different solution. Finally, while our analysis treated cultural characteristics as country-level constants, future subnational research could examine how cultural variation *within* countries interacts with institutional and policy conditions to shape opportunity conviction.

[4] Policymakers had other priorities in the pandemic above opportunity conviction, namely public health and the fatality rate. We are not at all here suggesting that opportunity conviction should have taken precedent over these very serious life and death concerns.

## Conclusion

This paper reframes crisis-time entrepreneurship as a joint-threshold problem. We shift resilience work from micro, longitudinal "bounce-back" stories to an ecosystem-level readiness that is produced conjuncturally by raising credible demand signals (opportunity visibility) and by keeping deterrent risk tolerable. Results show that this occurs along both a structural-anchor route and a growth-anchor route. Responsive policy, in this view, complements but does not replace underlying economic, institutional, and cultural strength. Methodologically, we extend fsQCA in macro-entrepreneurship by (i) making the two-gate combination logic explicit and (ii) demonstrating stable, interpretable configurations that a net-effects model would obscure.

Although not easy, the requisite policy actions are clear: build predictable institutions first, then deploy the right targeted policies. In our 2021 configurations, vaccination was the only policy lever that consistently reinforced conviction; stringency and stimulus were contingent and often counterproductive. Framed this way, the opportunity-conviction lens offers a portable diagnostic for judging whether an ecosystem will let people see opportunities and act under future systemic shocks.

**While preparing for submission the authors used LLM tools for organizing and wordsmithing their own original thoughts and words. The authors originated and take full responsibility for the content of every sentence.**

## CRediT authorship contribution statement

**Adam W. Smith:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Amir Pezeshkan:** Writing – review & editing, Writing – original draft, Conceptualization.

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## *Further Reading*

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