

# **Born sustainable:**

## **Promoted by the ecosystem for sustainable entrepreneurship**

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### **Abstract**

**Purpose.** – The institutions and resource endowments for entrepreneurial engagement with sustainability in a country are forming the ‘ecosystem for sustainable entrepreneurship’. The ecosystem for sustainable entrepreneurship is a context for businesses in their pursuit of sustainability. Little is known, however, about the effect of the ecosystem upon business pursuits of sustainability. The issue is whether the ecosystem is promoting businesses that are born sustainable, in that they from inception are pursuing sustainability.

**Research design.** – The ecosystems for sustainable entrepreneurship in 47 countries with a large representative sample of starting and operating businesses, were surveyed in 2021 by the Global Entrepreneurship Monitor. Hypotheses about effect of an ecosystem on business engagement with sustainability are tested by hierarchical linear modeling.

**Findings.** – Elaboration of ecosystems for sustainable entrepreneurship is found to promote sustainability pursuits in newborn businesses more than in older businesses.

**Contribution.** – The finding contributes to evidence-based theorizing of the nexus between entrepreneurial ecosystems and business pursuits of sustainability.

**Keywords.** Entrepreneurship; startups; sustainability; ecosystem; national; global.

### **Highlights**

- Institutions and resource endowments supporting pursuits of sustainability in a country form a national ecosystem for sustainable entrepreneurship.
- National ecosystems for sustainable entrepreneurship are elaborated in varying degrees around the world.
- Newborn businesses pursue sustainability more than older businesses.
- Additionally, elaboration of the ecosystem for sustainable entrepreneurship boosts sustainability pursuits in newborn businesses more than in older businesses.

# 1 Introduction

The institutions and resource endowments for business engagement with sustainability in a country form a ‘national ecosystem for sustainable entrepreneurship’. The ecosystem for sustainable entrepreneurship is a context for businesses in their pursuit of sustainability. However, the effect of the system upon business pursuits of sustainability is largely unknown (Hoogendoorn et al., 2019; Kraus et al., 2017; Perez, 2021).

A considerable stream of research focuses on entrepreneurial ecosystems, conceived as systems of institutions and resource endowments supporting entrepreneurship in an area (Wurth et al., 2022). The conceptualization of an entrepreneurial ecosystem, however, largely ignores sustainable entrepreneurship (Siffert and Guimarães, 2020). Therefore it seems worthwhile to focus on the ecosystem for sustainable entrepreneurship as a distinct ecosystem.

These considerations frame our research questions, *what is the effect of being a newborn business, rather than an older business, upon engagement with sustainability, and what is the impact of the ecosystem for sustainable entrepreneurship upon engagement with sustainability in newborn businesses?*

To address these questions, we analyze surveys of ecosystems and businesses. The national ecosystems for sustainable entrepreneurship in 47 countries with a large representative sample of starting and operating businesses, were surveyed in 2021 by the Global Entrepreneurship Monitor.

Analyses find that newborn businesses, more than older businesses, engage with sustainability, and that elaboration of national ecosystems for sustainable entrepreneurship boosts sustainability pursuits in newborn businesses more than in older businesses.

These findings contribute to evidence-based theorizing of the nexus between entrepreneurial ecosystems and business pursuits of sustainability.

## 2 Literature review

Our study is positioned at the nexus of the literature on entrepreneurial ecosystems and the literature on sustainability engagement by businesses. This positioning warrants brief reviews of the two literatures.

### 2.1 The literature on entrepreneurial ecosystems

The currently most influential conceptualization of an entrepreneurial ecosystem is by Stam and colleagues (Leendertse et al., 2022; Stam and Spigel, 2018). An ecosystem is conceptualized as a system of interrelated components in form of institutions and resource endowments that jointly channel, enable, and constrain enterprising (Spigel, 2022; Stam, 2015).

The institutions comprise formal regulatory institutions, entrepreneurial culture, and networks. The resource endowments comprise physical infrastructure, demand entrepreneurial production, intermediaries facilitating entrepreneurial work, talented people for staffing endeavors,

knowledge enhancing production, leadership promoting enterprising, and financing of endeavors (Stam and van de Ven, 2021). These components of institutions and endowments form a system that expectedly promotes enterprising (Bosma et al., 2018).

The ecosystem may affect entrepreneurial endeavors rather directly. Elaboration of the ecosystem may promote entrepreneurial performance rather directly in that the support provided in the elaborate system will increase the performance (Feld and Hathaway, 2020). Such direct effects are found by Stam (Stam and van de Ven, 2021) and Leendertse (Leendertse et al., 2022). However, the ecosystem may also affect entrepreneurial endeavoring in other ways. Notably, when we conceive of enterprising as utilization of resources, we can conceive of the ecosystem as influencing the utilization of resources (Nicotra et al., 2018). That is, the ecosystem will facilitate or dampen the effects of resources on outputs. This conception leads us to think of the ecosystem effect, not as a direct effect, but as a moderating effect, moderating the impact of resources on outputs (e.g., Autio et al., 2014; Schøtt and Wickstrøm, 2014).

## **2.2 The literature on sustainability engagement by businesses**

*“The social responsibility of business is to increase its profits”* (Friedman, 1970). This quote, promulgated by the prominent Nobel laureate Milton Friedman, expresses the value underpinning capitalism. This value is contested. *“We are ... dependent on companies’ efforts and willingness to find sustainable solutions. But ... the primary purpose of a corporation is, after all, to produce economic profit. Not to save the world. Claims that there is no contradiction between these two conflicting goals ring ... false”* (Thunberg et al., 2020, p.133). This quote, promulgated by one of the world’s most prominent activists, Greta Thunberg, expresses the value underpinning activism for sustainable development to save the world. The movement for sustainability has not shaken capitalism, but it is pressuring societies, governments and businesses to engage with sustainability issues (Schönherr et al., 2017).

Businesses differ in their engagement with sustainability (Figge and Helm, 2012; Tiba et al., 2018). Some adopt a strategy for sustainability, whereas others do not. Some practice sustainability, while others do not. Some businesses profess to elaborate a strategy for sustainable development, but do not implement or couple it with practice—they are ‘*greenwashing*’. Entrepreneurs who value enhancing their own wealth, aligned with Milton Friedman, may be pressured to profess a strategy for sustainability, but may be reluctant to implement it in practice. Strategy and practice are likely to be coupled loosely rather than tightly (Weick 1976; Orton and Weick, 1990; Schøtt and Wickstrøm, 2008). Some businesses adopt a strategy, and couple it with practice—they ‘*walk the talk*’. Entrepreneurs who value making a difference in the world, aligned with Greta Thunberg, are more likely to develop a strategy for sustainability and to implement their strategy in practice (Hockerts, 2015; Sarango-Lalangui et al., 2005; York et al., 2016).

The global movement for sustainable development has led to the UN adoption of Sustainable Development Goals (UNCTAD, 2019). National authorities, notably governments, are engaging with these goals (Sachs et al., 2021; Schramade, 2017). Governments and business leaders and associations are more or less supporting pursuits of sustainable development, specifically in businesses (Agarwal et al., 2017). Notably, the *Harmonious Entrepreneurship Society* is founded on and dedicated to the promotion of entrepreneurial training and enterprising for sustainable development (Harmonious Entrepreneurship Society, 2023). Most cultures have an expectation that people and businesses pursue sustainable development, and many societies are requiring the adoption of sustainability efforts. Post-materialist culture appears especially favorable for sustainable development (Hechavarría et al., 2016; Rosati and Faria, 2019a, 2019b).

Pursuits of sustainability differ widely around the world (Hechavarría et al., 2016). Business endeavors, including the pursuit of sustainability, are embedded in national eco-systems that regulate, constrain, enable, and support their endeavors. A study of business pursuits in Colombia and Egypt found considerable differences (Liu et al., 2021). Notably, while businesses in both countries reported substantial strategies and practices, the endeavors were more elaborate in Colombia than in Egypt, and the coupling between strategy and practice was substantial in both countries, but tighter in Colombia than in Egypt (ibid.). This comparison calls for contextualizing business pursuits of sustainability.

### **3 Theoretical perspective and hypotheses**

The above review provides a basis for developing a theoretical perspective and hypotheses about born sustainable businesses as embedded in ecosystems for sustainable entrepreneurship.

#### **3.1 The born sustainable business**

A business may engage with sustainability to some degree, in that it may have some awareness of issues of environmental, social, and economic sustainability, some strategies for sustainability, and some practices for sustainability (Fischer et al., 2020).

The concern with sustainability is new and increasing in society, as a new expectation and even more or less a requirement to practice sustainability. At the time when today's old businesses were founded, there was little concern with sustainability, so sustainability issues hardly entered into awareness and strategy in these businesses. An old business is thus expected to change, to adopt strategies for sustainability and to implement the strategies in practices for sustainability. But an old business has sunk costs and has inertia that entail difficulty changing and adopting new strategies and practices. Conversely, a startup can easier, when considering strategies and designing practices, include issues of sustainability. Newborn businesses, compared to older businesses, thus have greater dynamic

capability, that enables them to engage more with sustainability. This line of argument thus leads us to specify our first hypothesis,

*Hypothesis 1. Newborn businesses, compared to older businesses, engage more with sustainability.*

### 3.2 The national ecosystem for sustainable entrepreneurship

A business, and especially a startup, operates in a context. When we focus on engagement with sustainability, we should consider the context that expectedly influences engagement with sustainability. Concretely, therefore, we consider the institutions and resources that we may expect to influence strategy and practice of sustainability in businesses.

The institutions and resource endowments for business pursuits of strategies and practices of sustainability in a country form a system that appropriately is termed the ‘national ecosystem for sustainable entrepreneurship’. We consider this system as comprised of five interrelated components:

- arrangements for social sustainability,
- arrangements for economic sustainability,
- arrangements for environmental sustainability,
- participation of society, and
- participation of government.

Ecosystems are often theorized to not exert direct influence on outputs of action, but to facilitate an action such as an actor’s utilization of resources for producing outputs. That is, the ecosystem is theorized to moderate the effect of resources on outputs.

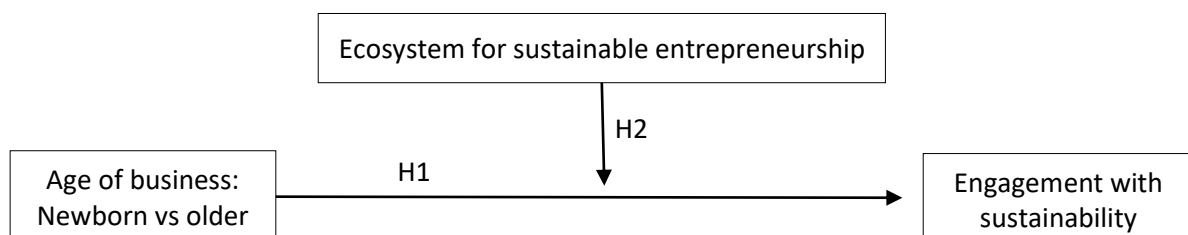
Taking this theoretical consideration further, we thus argue that the ecosystem facilitates utilization of the dynamic capability in a newborn business for engagement with sustainability.

These considerations thus lead us to hypothesize,

*Hypothesis 2. The ecosystem for sustainable entrepreneurship moderates the effect of being newborn upon engagement with sustainability. Specifically, the ecosystem enhances engagement with sustainability in newborn businesses more than in older businesses.*

**Figure 1.**

**Hypothesized effects.**



## **4 Methodology**

For analyzing business endeavors in the context of national ecosystems, we consider the ‘population’ of societies and the ‘population’ of businesses nested in the societies. The national ecosystems for sustainable entrepreneurship in 47 countries were surveyed in 2021, along with a survey of a huge and representative sample of businesses, for the Global Entrepreneurship Monitor, GEM (Global Entrepreneurship Monitor, 2022). GEM is scheduled to make the full survey freely available to the public in 2024 on its website [www.gemconsortium.org](http://www.gemconsortium.org).

### **4.1 Sampling**

GEM uses two-stage sampling (Bosma, 2013). First countries are sampled, essentially by self-selection when a national team is formed for conducting the two surveys in their country. In 2021, GEM surveyed entrepreneurs in 47 countries, Arab Emirates, Belarus, Brazil, Canada, Chile, Colombia, Croatia, Cyprus, Dominican Republic, Egypt, Finland, France, Germany, Greece, Guatemala, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Kazakhstan, Korea, Latvia, Luxemburg, Morocco, Netherlands, Norway, Oman, Panama, Poland, Qatar, Romania, Russia, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Sudan, Turkey, United Kingdom, United States, and Uruguay. This sample of countries, with its diversity of regions, economies, and cultures, is fairly representative of the societies around the world.

Second, in each of the countries, adults were randomly sampled, reporting whether they were entrepreneurs owning and managing a starting or operating business. This sample of entrepreneurs reported on their businesses, notably engagement with sustainability. This first presentation of our study reports results based on 10,419 businesses analyzed up to 1 February 2023; by mid-February 2023 we will have an update of the results from the full sample of about 30,000 businesses (Global Entrepreneurship Monitor, 2022).

### **4.2 Measurements**

The national ecosystem for sustainable entrepreneurship in each country is measured in the GEM survey of experts in each country. Pursuits of sustainability in a business and organizational characteristics of the business are measured in the GEM survey of entrepreneurs reporting on their businesses (Global Entrepreneurship Monitor, 2022, 2023).

#### **4.2.1 The ecosystem for sustainable entrepreneurship**

The ecosystem for sustainable entrepreneurship is conceptualized as comprising five components, as discussed in section 2 on theoretical background, and listed in Table 1.

Each component is indicated by asking each expert to rate truthfulness versus falseness of each of a few statements in the questionnaire, listed in Table 1.

Table 1.

Components of the ecosystem, and statements for indicating the component.

<b>Component</b>	<b>Questionnaire item</b>
Arrangements for social sustainability	<i>New and growing firms increasingly prioritize their social contribution rather than solely focusing on profit and wealth creation</i>
	<i>New and growing firms integrate social responsibility principles into their business operations</i>
	<i>Investors are particularly interested in funding new firms that focus on social responsibility</i>
Arrangements for economic sustainability	<i>Firms see paying taxes as part of their social responsibility</i>
	<i>Investors and stakeholders are satisfied with the economic performance of companies they have invested in</i>
	<i>New and growing firms founded by members of minority groups have the same economic opportunities as other new firms</i>
Arrangements for environmental sustainability	<i>Most new and growing firms implement environmentally-conscious practices when producing products or supplying services</i>
	<i>Most new and growing firms prioritize energy efficiency practices in their operations</i>
	<i>Most new and growing firms see environmental problems as a potential opportunity</i>
Participation of society	<i>Sustainability practices are seen as very important within the national culture</i>
	<i>There are prominent examples of entrepreneurial activities related to Sustainable Development Goals (SDGs) within the business sector</i>
Participation of government	<i>The national government has specific regulations that support sustainability-focused startups</i>
	<i>The national government supports sustainability-focused firms through grants, special rights and/or tax cuts</i>

Truthfulness versus falsity of each statement was rated on an 11-point Likert scale, going from 0 to 10, with 5 as the neutral, neither true nor false. Within each component, the correlations among statements were high, above .7 on average. The component can therefore be measured by the reflective index formed by averaging the standardized variables for the component. The correlations among the five indexes for the components are correlated rather highly, all above .65, so the ecosystem can be measured by the reflective index formed by averaging the five standardized components. The standardized measure of the ecosystem is an independent variable in modeling the effect of the ecosystem (Table 6).

#### 4.2.2 Sustainability engagement

Engagement with sustainability in a business was measured in the GEM survey of entrepreneurs by posing six questions,

- *Are you aware of the 17 United Nations Sustainable Development Goals – the 2030 agenda for sustainable development – published in 2015?*

- *When making decisions about the future of your business, you always consider social implications such as access to education, health, safety, inclusive work, housing, transportation, quality of life at work, etc.*
- *When making decisions about the future of your business, you always consider environmental implications such as preservation of green areas, reduction of the emission of pollutants and toxic gases, selective garbage collection, conscious consumption of water, electricity and fuels, etc.*
- *You prioritize the social and/or environmental impact of your business above profitability or growth.*
- *Have you taken any steps to minimize the environmental impact of your business over the past year? This could include energy saving measures, measures to reduce carbon emissions or introducing more efficient machinery, take care of the solid waste generated, use of recyclable material, use of alternative means of transportation, such as cycling, walking, collective rides, public transportation, etc.*
- *Have you taken any steps to maximize the social impact of your business over the past year? This could include creating posts for young unemployed and other groups with limited access to the labor market; including social enterprises into your supply chain; ensuring a diverse workforce; prioritize companies and/or suppliers that take actions that respect human rights and the environment, when buying a product or service; fight against any form of child or slave labor; invest or support projects or social organizations that develop the community and include less favored groups.*

The six variables are positively correlated so we combine them by standardizing each variable and then averaging the six for an index of engagement with sustainability. The standardized measure of sustainability engagement is used to ascertain differences (Table 5) and is the dependent variable in our analysis (Table 6).

These indicators of sustainability have been used in several recent analyses (Ismail et al., 2022; Liu et al., 2021).

#### **4.2.3 Newborn**

Age of business is here considered dichotomously, as newborn contrasted older. The GEM survey, conducted around June 2021, asked the owner for the year in which the owners began receiving compensation from the business. If the business began compensating owners in 2021 (or not yet), it is considered newborn. If the business began compensating owners earlier, it is considered older. For multivariate analysis, older is coded 0, and newborn is coded 1.

#### **4.2.4 Control variables**



The multivariate analysis should control for conditions that may be related to business age and to engagement with sustainability. The GEM survey enables us to control for (Bosma, 2013),

- motive of accumulating wealth, measured on Likert scale 1 to 5.
- motive of earning a living, as jobs are difficult to get, measured on Likert scale 1 to 5.
- motive of continuing a family tradition of running businesses, measured on Likert scale 1 to 5.
- motive of wanting to make a difference in the world, measured on Likert scale 1 to 5.
- sector, measured as four categories, extractive sector, transformative sector, business service sector, consumer-oriented sector.
- owners of the business, the number of owners, logged to reduce skewness.
- employees of the business, the number of employees, logged to reduce skewness.
- gender of the entrepreneur, recorded as male (coded 0) or female (coded 1).
- age of the entrepreneur, the number of years of age of the entrepreneur.
- education of the entrepreneur, as years of schooling.
- self-efficacy, the entrepreneur's confidence in own ability to run a business, on Likert scale 1 to 5.
- risk-willingness, lack of fear of failure, on Likert scale 1 to 5 for increasing risk-willingness.
- opportunity assessment, viewing good opportunity, on Likert scale 1 to 5.
- networking, acquainted with starters, on scale 0 to 3.

At the macro-level, we also control for national GDP per capita, logged to reduce skewness (coded from the World Bank).

### **4.3 Techniques for analyzing the data**

Businesses are nested within a country or an ecosystem, so our data from a two-level hierarchy. Our hypotheses concern effects within the micro-level and from the macro-level to the micro-level. To test these effects, we use two-level hierarchical linear modeling. This is similar to linear regression but takes into account that the data are at two levels (Snijders and Boskar, 2012).

## **5 Results**

Here we first describe the background of the businesses, and then ascertain sustainability engagement of newborn and older businesses.

### **5.1 Background of the businesses**

The background of the businesses is briefly described by their organizational characteristics, Table 2.

Table 2.

Characteristics of the businesses.

Age: Newborn vs older	Percent of business that are newborn	42%
Motive: Make a difference	Scale 1 to 5; mean (SD)	2.9 (1.5)
Motive: Accumulate wealth	Scale 1 to 5; mean (SD)	3.3 (1.5)
Motive: Family tradition	Scale 1 to 5; mean (SD)	2.5 (1.6)
Motive: Earn a living	Scale 1 to 5; mean (SD)	3.8 (1.4)
Sector: Extracting	Percent of businesses that are extracting	6%
Sector: Transforming	Percent of businesses that are transforming	22%
Sector: Business services	Percent of businesses that are business services	22%
Sector: Consumer-oriented	Percent of businesses that are consumer-oriented	50%
Owners of business	Owners; mean (SD)	1.8 (2.0)
Employees	Employees; mean (SD)	6.3 (27.1)
Gender: Female	Percent of owners who are female	42%
Age of entrepreneur	Years; mean (SD)	41.2 (12.2)
Education of entrepreneur	Years; mean (SD)	13.8 (5.7)
Self-efficacy	Scale 1 to 5; mean (SD)	4.1 (1.2)
Risk-willingness	Scale 1 to 5; mean (SD)	3.3 (1.5)
Opportunity assessment	Scale 1 to 5; mean (SD)	3.3 (1.4)
Networking	Scale 0 to 3; mean (SD)	1.4 (1.1)
Income	Scale 1 to 3; mean (SD)	2.2 (.8)
Household	Persons living together; mean (SD)	3.7 (2.0)

The businesses are described further by correlations among variables, Table 3. Correlations are mostly rather weak, so no problem of multicollinearity is expected in the multivariate analysis.

Table 3.

Correlations among variables of interest and with control variables.

	Ecosystem	Sustainability pursuit	Newborn
Ecosystem			
Sustainability pursuit	.00		
Newborn (vs older)	.03 ***	.04 ***	
Motive: Making a difference in world	.08 ***	.31 ***	.16 ***
Motive: Accumulating wealth	-.08 ***	.07 ***	.12 ***
Motive: Family tradition	.06 ***	.15 ***	-.02 **
Motive: Earning a living, as jobs scarce	-.12 ***	.06 ***	-.03 ***
Sector: Extraction	-.06 ***	.03 ***	-.04 ***
Sector: Transformation	-.04 ***	.01 *	-.05 ***
Sector: Business services	.06 ***	-.04 ***	-.04 ***
Sector: Consumer-oriented	.02 **	.01 †	.10 ***
Owners	.04 ***	.06 ***	.10 ***
Employees	.03 ***	.07 ***	-.38 ***

Gender: Female	-.03 ***	.01	.05 ***
Age of entrepreneur	.05 ***	-.02 ***	-.25 ***
Education of entrepreneur	.14 ***	.01	.04 ***
Self-efficacy	.00	.10 ***	.04 ***
Opportunity assessment	.11 ***	.12 ***	.12 ***
Risk-willingness	-.04 ***	.00	-.01
Networking	.01	.16 ***	.14 ***
Income	.04 ***	.01	-.07 ***
Household	-.07 ***	.06 ***	.01
GDP per capita	.47 ***	-.06 ***	-.07 ***

† p<.10 \* p<.05 \*\* p<.01 \*\*\* p<.001

## 5.2 Interrelated components of the ecosystem for sustainable entrepreneurship

The systemic character of the typical ecosystem for sustainable entrepreneurship is indicated by the interdependence among the components. The interdependence is indicated by the correlations among the components, Table 4.

The correlations are all rather strong, between .65 and .86. This indicates that the typical ecosystem is a rather cohesive system

Table 4.

Correlations among components.

	Social sustainability	Economic sustainability	Environmental sustainability	Societal participation	Government participation
Social sustainability					
Economic sustainability	.76 ***				
Environmental sustainability	.83 ***	.86 ***			
Societal participation	.85 ***	.77 ***	.84 ***		
Governmental participation	.65 ***	.79 ***	.73 ***	.74 ***	

† p<.10 \* p<.05 \*\* p<.01 \*\*\* p<.001

## 5.3 Sustainability pursuits in newborn and older businesses

The difference between newborn and older businesses in their engagement with sustainability is shown in Table 5. Sustainability is pursued more extensively in newborn business than in older business, and their difference is substantial, .09 standard deviations.

Table 5.

Sustainability pursuits in newborn businesses and in older businesses.

	Newborn businesses	Older businesses	Difference
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Sustainability pursuit, mean of the standardized measure	.05	-.04	.09 ***
	14,184	19,527	

† p<.10    \* p<.05    \*\* p<.01    \*\*\* p<.001    in t-test of the difference between the two means.

#### 5.4 Effects on sustainability pursuits

Effects on sustainability engagement are appropriately tested in a multivariate linear model, Table 6.

Hypothesis 1 posits that newborn businesses, compared to older businesses, engage more with sustainability, also when other conditions are constant. Hypothesis 1 is tested in the first model in Table 6. The positive coefficient supports Hypothesis 1, sustainability pursuit is more extensive among newborn businesses than among older businesses, also when other conditions are controlled for.

Hypothesis 2 asserts that the ecosystem for sustainable entrepreneurship moderates the effect of being newborn upon engagement with sustainability; specifically, the ecosystem enhances engagement with sustainability in newborn businesses more than in older businesses. Hypothesis 2 is tested in the last model in Table 6, as the interaction between newborn and ecosystem. The positive coefficient supports Hypothesis 2. That is, the ecosystem boosts the sustainability pursuits of newborn businesses more than of the older businesses.

Table 6.

Sustainability pursuit, effected by being newborn and by ecosystem for sustainable entrepreneurship.

	Main effects	Interaction included
Newborn (contrasted older businesses)	.085 *** H1	.063 ***
Ecosystem for sustainable entrepreneurship	-.011	-.043
Newborn * Ecosystem		.077 *** H2
Motive: Make a difference	.220 ***	.220 ***
Motive: Accumulate wealth	-.014 †	-.014 †
Motive: Family tradition	.055 ***	.055 ***
Motive: Earn a living	.027 ***	.027 ***
Sector: Extracting	.122 ***	.122 ***
Sector: Transforming	.023	.023
Sector: Business services	-.057 ***	-.056 ***
Owners of business	.023 ***	.023 ***
Employees	.121 ***	.121 ***
Gender: Female	.019	.020
Age of entrepreneur	.035 ***	.035 ***
Education of entrepreneur	.034 ***	.034 ***
Self-efficacy	.052 ***	.052 ***
Risk-willingness	-.005	-.004

Opportunity assessment	.043 ***	.042 ***
Networking	.059 ***	.058 ***
Income	-.020 **	-.020 **
Household	.015 †	.014 †
GDP per capita	-.052	-.054
Intercept	-.035	-.026
Country	Yes	Yes

Hierarchical linear model, with random effect of Country.

For sector, the reference is the consumer-oriented sector, that each other sector is compared to.

The dependent variable is standardized.

The national-level independent variables are standardized.

The numerical individual-level variables are standardized and centered within country.

The dichotomous independent variables are 0 and 1 dummies.

† p<.10    \* p<.05    \*\* p<.01    \*\*\* p<.001

In short, being newborn, in contrast to being older, entails more extensive pursuit of sustainability, and this positive effect is enhanced where the ecosystem for entrepreneurial entrepreneurship is elaborate.

## 6 Discussion

The analyses address the questions, *what is the effect of being a newborn business, rather than an older business, upon engagement with sustainability, and what is the impact of the ecosystem for sustainable entrepreneurship upon engagement with sustainability in newborn businesses?* Here we discuss the findings, their contribution, relevance for policy and practice, and limitations, and we suggest further research.

### 6.1 Findings

Analyses find that newborn businesses, more than older businesses, engage with sustainability, and that elaboration of national ecosystems for sustainable entrepreneurship boosts sustainability pursuits in newborn businesses more than in older businesses.

### 6.2 Contribution

These findings contribute to evidence-based theorizing of the nexus between entrepreneurial ecosystems and business pursuits of sustainability.

### 6.3 Relevance for policy and practice

Our finding that the national ecosystem for sustainable entrepreneurship does indeed promote business pursuits of sustainability suggests that authorities such as governments can promote business

engagement by elaborating a strong ecosystem. This is likely to complement legal requirements for sustainability engagement.

#### **6.4 Limitations**

A significant limitation is that when focusing on ‘born sustainable’ businesses, our analysis ignored other endeavors that are prominent at start, such as digitalization in ‘born digital’ businesses and internationalization in ‘born global’ businesses.

A second limitation is that engagement with sustainability has been considered in the aggregate as comprising both strategy and practice with both environmental and social sustainability, without distinguishing between strategy and practice, and without distinguishing between environmental and social sustainability. Analogously, a third limitation is that the national ecosystem for sustainable entrepreneurship has been considered an entity in itself, as a system comprising several components, without analyzing the components.

#### **6.5 Future research**

The limitations suggest further research. First, ‘born sustainable’ is expectedly coupled with other startup phenomena such as ‘born digital’ and ‘born global’ (Wang and Schøtt, 2020; Bujac and Schøtt, 2021). Second, insights can expectedly be obtained by analyzing the various components of the ecosystem for sustainable entrepreneurship, and examining their distinct impacts on sustainability pursuits. Third, further insights may also be achieved by maintaining distinctions between strategy and practice and between social and environmental sustainability, and investigating how each of these is influenced by the ecosystem for sustainable entrepreneurship.

### **7 Conclusions**

Sustainability is pursued in newborn businesses more than in older businesses, with an additional boost around the world by the national ecosystems for sustainable entrepreneurship.

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