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Leveraging entrepreneurial ecosystems as human resource systems: A theory of meta-organizational human resource management

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ABSTRACT

Entrepreneurs require human resources to establish and scale their ventures; however, constraints often prevent entrepreneurs from investing in formal human resource systems. How entrepreneurs overcome human resource challenges by leveraging their entrepreneurial ecosystems as informal inter-organizational talent management systems has been overlooked by scholars. We propose a model of entrepreneurial ecosystem human resource management, theorizing that ecosystem participants collectively perform the human resource management function for entrepreneurship communities. Drawing from economic rents theory, we explain how entrepreneurial ecosystems encourage a form of meta-organizational human resource management that allows ecosystem participants to coordinate talent acquisition, learning and development, performance management and rewards, and retention. Coordinated entrepreneurial ecosystems improve entrepreneurial performance by sourcing talent, onboarding selected members, enculturating ecosystem values, developing entrepreneurial skills, and retaining human resources, which in turn generates rents. We discuss how our theory catalyzes research at the HR and entrepreneurial ecosystems interface and reveals insights for practitioners.

1. Introduction

The ecosystem perspective in business research draws attention to how organizational activity is shaped by complex systems of interdependent actors (e.g., consumers, investors, government officials) and socio-economic forces (e.g., values, institutions, narratives) that extend beyond firm, industry, and sectoral boundaries (Dattée, Alexy, & Autio, 2018; Fuller, Jacobides, & Reeves, 2019; Ganco, Kapoor, & Lee, 2020; Jacobides, Cennamo, & Gawer, 2018; Shipilov & Gawer, 2020). The ecosystem lens has become prevalent in studies of entrepreneurship, with scholars acknowledging that entrepreneurial activity does not occur in a vacuum but is place-based, context-specific, and embedded in entrepreneurial ecosystems (EEs)—the interconnected actors and forces that support entrepreneurial activity within geographic areas (Acs, Stam, Audretsch, & O'Connor, 2017; Berger & Kuckertz, 2016; Bouncken & Kraus, 2021; Roundy, Bradshaw, & Brockman, 2018; Spigel, 2017a; Stam, 2015; Thompson, Purdy, & Ventresca, 2017). Research

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focusing on vibrant EEs in cities and regions with high levels of entrepreneurial activity, such as Silicon Valley, Bangalore, and Stockholm, has made strides in understanding ecosystem development (Cao & Shi, 2020; Goswami, Mitchell, & Bhagavatula, 2018; Roundy, 2019). However, despite human resources (HR) appearing in most lists of the key components of ecosystems (e.g., Feld, 2012; World Economic Forum, 2013; Vedula & Kim, 2019), how human resources are acquired, developed, and coordinated in EEs—and by EEs—is unclear and has received scant attention in the literature.

Exploring the role of human resource management in EEs addresses an unresolved theoretical and practical tension in entrepreneurship. Although studies find that human resources are central to entrepreneurship and that entrepreneurs with high performance HR systems have superior performance (i.e., achieve their goals, develop organizational capabilities, and create ventures that scale; Han, Kang, Oh, Kehoe, & Lepak, 2019; Kepes & Delery, 2006; Rauch & Hatak, 2016; Unger, Rauch, Frese, & Rosenbusch, 2011), early-stage entrepreneurs often cannot invest in formal, internal HR systems or outsource HR activities to professional employer organizations (cf. Klaas, 2003) because of resource constraints associated with the liabilities of “newness” (Stinchcombe, 1965) and “smallness” (Hannan & Freeman, 1984). Further complicating this challenge, new venture performance often depends on maintaining an organic and “lean” organizational structure that enables entrepreneurs to be nimble and pivot towards emerging opportunities (Grimes, 2018; McDonald & Gao, 2019). Despite the benefits of high performance HR systems for young ventures, implementing formalized HR systems can increase organizational rigidity and “damage the flexibility and adaptability of entrepreneurial firms” (Chadwick, Guthrie, & Xing, 2016; Kim, 2020, p. 6), which suggests that “formalization is not a desirable evolution of HR systems in small and emerging firms, and that instead these systems may stifle creativity” (Cardon & Stevens, 2004, p. 319). To understand how entrepreneurs navigate HR issues, Cardon and Stevens (2004, p. 319) suggest “looking at the informal as well as formal mechanisms through which very small and small firms manage their employees.”

An informal strategy that entrepreneurs use to overcome resource limitations and improve their performance is leveraging the resources in their local EEs (Neumeier, Santos, Caetano, & Kalbfleisch, 2019; Nicotra, Romano, Del Giudice, & Schillaci, 2018; Roundy & Bayer, 2019a; Spigel & Harrison, 2018). However, despite calls for more work at the HR and entrepreneurship interface (Barrett & Mayson, 2006; Hayton, 2005; Kim, 2020; Mayson & Barrett, 2014), research from both disciplines has not considered how entrepreneurs rely on their EEs to address their HR needs. HR scholars have not examined this issue, in part, because they have traditionally focused on intra-organizational levels of analysis (i.e., individual, group, and organization-level HR dynamics) (e.g., Arthur & Boyles, 2007; Markoulli, Lee, Byington, & Felps, 2017) and have only recently considered inter-organizational HR systems (e.g., Meijerink & Keegan, 2019; Van Fenema & Keers, 2018). Notably, Kim (2020) reviewed 124 empirical articles focused on the relationship between HR and entrepreneurial performance; none of the reviewed articles examined EEs or considered inter-organizational relationships. Likewise, the “people” aspect of EEs has received little attention from entrepreneurship scholars because they typically adopt a macro-orientation focused on EE performance (i.e., system-level characteristics such as ecosystem resilience; Cunningham & O'Reilly, 2018; Roundy, Brockman, & Bradshaw, 2017). Thus, the processes through which EEs influence HRM is a blind spot in entrepreneurship and HR research and a missed opportunity for exploring both the micro-foundations of EEs and how HRM systems manifest at the inter-organizational, ecosystem-level. A critical implication of this gap is that what is known about human resources in EEs is unsystematic, disorganized, and does not suggest clear practices that can be adopted by entrepreneurs.

To address the paucity of research exploring how EEs supplement HR practices in early-stage ventures and influence entrepreneurial performance, we synthesize and extend insights from entrepreneurship and HR studies to explain how EEs operate as meta-organizational HRM systems. Although HR research generally focuses on organizational issues, we begin by arguing why it is appropriate to conceptualize HR practices at the ecosystem-level. We introduce the concept of entrepreneurial ecosystem human resource management (*EE-HRM*), a system of shared HRM practices not tied to a specific EE participant but performed by the pooled influence of EE-HRM contributors (i.e., individuals who perform EE-HRM activities). We explain how EE-HRM emerges, differs from organizational HRM, and is a form of collective HRM. As we articulate, the ecosystem has shared responsibility for managing HR processes, and any EE participant can step into and out of EE-HRM activities. In developing our theory of how EE-HRM functions, we extend work from the strategic human capital literature on economic rents theory (Chadwick, 2017; Chadwick & Dabu, 2009; Chadwick & Flinchbaugh, 2021) to argue that EE-HRM coordinates HR activities (EE talent acquisition, learning and development, performance management and rewards, and retention) that improve entrepreneurial performance by generating economic rents.

Our theory makes multiple contributions to HR and entrepreneurship research and work at the intersection of the two disciplines. First, HR research has primarily focused on the triadic relationship between HR manager, line manager, and employee and on individuals or departments with formal HR roles and responsibilities (e.g., Harrington, Rayner, & Warren, 2012; Lepak, Liao, Chung, & Harden, 2006). However, our theory of EE-HRM draws attention to a fluid and dynamic type of informal HRM not based on traditional employment relationships, in which any capable stakeholder in an EE can participate. Second, our theory helps to push the boundaries of HR research beyond intra-organizational dynamics by identifying a new approach for sourcing and developing talent *inter-organizational*, which is especially pertinent to resource-strapped early-stage ventures. Although HRM research acknowledges that firms can be influenced by forces in their external environments (e.g., national cultures, industry structure; cf. Jackson, Schuler, & Jiang, 2014), we open new areas to explore HRM at the macro, inter-organizational levels and identify ways in which HRM drives not only *entrepreneurial performance* (i.e., the performance of an early-stage venture) but also *EE performance* (i.e., the community's ability to support entrepreneurship). Finally, as an emerging topic, EE research has received criticism for being “under-theorized and conceptually fragmented” and there have been calls to shift EE research from identifying ecosystem components to a process-focus that examines *how* resources are allocated in EEs (Cao & Shi, 2020, p. 1). Our theoretical model explicitly addresses these calls by identifying the processes by which EEs plan for, source, develop, reward, and retain human resources. In doing so, we identify a specific set of facilitating mechanisms linking EEs to entrepreneurial performance.

We structure the remainder of the paper as follows. In the next section, we review research on HR and entrepreneurship and devote

extended attention to the most pressing questions in the two literatures addressed by a theory of EE-HRM. We then examine the differences between organizational and meta-organizational HRM, explain why it is appropriate to examine EEs as HRM systems, and theorize about EE-HRM emergence. Next, we develop a model and propositions explaining the execution and coordination of HRM practices by EEs and how they influence entrepreneurial performance via rent generation. Finally, we discuss the contributions of our theory, identify boundary conditions, and elucidate a research agenda of testable propositions at the intersection of HRM and EEs.

2. Theoretical foundations

2.1. Inter-organizational HR: An emerging phenomenon

A comprehensive review of the HR field by Markoulli et al. (2017) based on over 12,000 articles found that most dealt with individual- or organization-level issues (or meso-combinations). Markoulli and colleagues did not highlight any articles focused on levels of analysis beyond the organization. However, scholars have begun to consider HR activities outside organizational boundaries and there is growing interest in understanding inter-organizational talent management (e.g., Martin-Rios, 2014).

Meijerink and Keegan (2019), for instance, argue that it is important to consider HRM practices in the ecosystem of “gig economy” organizations. Their theorizing is notable because it draws attention to how, in ecosystems, relationships can transcend the organization-employee dyad. They argue that “the gig economy eradicates a key touchstone of HRM research: the standard employment relationship between an employee and employer” (p. 214). Relatedly, Garavan, McCarthy, and Carbery (2019) propose an ecosystems perspective for international HR development (IHRD) that considers the interdependencies among actors in IHRD ecosystems.

Meijerink and Keegan (2019) and Garavan et al. (2019) push HRM’s boundaries outside organizations and urge scholars to consider non-employment-based, informal HR relationships. However, the platform and business ecosystems they consider differ from EEs, which are place-based, geographically bounded, and do not operate under a controlling organization (Iansiti & Levien, 2004). EEs are comprised of unique constellations of local actors and organizations who are focused on supporting entrepreneurial activities not confined to specific technologies, industries, or growth-trajectories (Roundy et al., 2018).

Adjacent to the small number of studies that are beginning to consider the HR function outside organizational boundaries, an emerging stream of intra-organizational research, contends that HR practices should be conceptualized as an “ecosystem” (Delery & Gupta, 2016; Delery & Roumpi, 2017). Snell and Morris (2021) claim that “to address the challenges of alignment in contemporary organizations, we need to frame HR as a more complex ecosystem” (p. 225). Baik, Kim, and Patel (2019) make similar arguments in conceptualizing organizations’ high performance work systems (HPWS) as “ecosystems.” Collectively, this work is shifting HR scholars’ attention towards an ecosystem perspective. However, the focus of published research on HR ecosystems has remained on intra-organizational systems, which operate at a different level of analysis, involve different actor types (e.g., HR managers), and are not the same concept as EEs.

2.2. Entrepreneurial ecosystems

EE research emerged as a response to criticisms that the systemic nature of entrepreneurship is under-developed and that it is unclear how entrepreneurs are influenced by their local contexts (Cavallo, Ghezzi, & Balocco, 2019; Welter, 2011). EE research differs from work examining related phenomena (e.g., clusters) in its focus on how the characteristics of cities and regions help to organize resources “around entrepreneurial opportunity, discovery and pursuit” (Cao & Shi, 2020, p. 7). Studying EEs renders a more holistic view of entrepreneurship than considering only entrepreneur- or venture-level characteristics.

The main focus of EE research has been creating lists of the key components of “successful” ecosystems that “enable entrepreneurs to identify untapped market niches and draw on the local resources, support, and financing to grow new ventures” (Spigel & Harrison, 2018, p. 152). Studies find that vibrant EEs—ecosystems with high levels of entrepreneurial activity—are composed of key actors, including entrepreneurs, investors, support organizations (e.g., accelerators), universities, and co-working spaces (Cohen, 2006; Spigel, 2017a). In vibrant EEs, ecosystem contributors work together to produce environments supportive of entrepreneurship.

Vibrant EEs are recognized as ripe environments for entrepreneurship; however, the specific mechanisms through which EE components influence entrepreneurship and entrepreneurs’ performance have been generally ignored (Cao & Shi, 2020; Cavallo et al., 2019). This is an important omission because studies find that it is not sufficient for an EE simply to have the “right” components; the components must be coordinated in processes that support entrepreneurship (Breznitz & Taylor, 2014). One source of this blind spot is that EE research often adopts a macro-orientation focused on studying system-level characteristics (e.g., Cunningham, Menter, & Wirsching, 2019; Roundy et al., 2018). The causal linkages between EE activities and entrepreneurs have received significantly less attention (Roundy & Bayer, 2019b; Spigel, 2017b). As a result, the mechanisms by which ecosystems influence entrepreneurial performance are unclear. Nonetheless, work at the HR and entrepreneurship interface suggests a specific set of activities through which EEs can influence entrepreneurship: HRM.

2.3. HRM and entrepreneurship

HR research typically focuses on intra-organizational studies of mature firms (Chadwick, Way, Kerr, & Thacker, 2012; Kim, 2020). Consequently, “HR practices for talent recruitment and management in SMEs [small and medium-sized enterprises] [...] have been considerably less researched” despite the importance of entrepreneurship-specific competencies for creating and scaling ventures

(Stokes et al., 2016: 2310–11; Unger et al., 2011). Entrepreneurs must also attract employees with unique skills and knowledge. As Spigel and Harrison (2018) summarized:

“startups require more than just skilled workers; these workers must also be able to work in the unique environment of high-growth ventures, which are often characterized by less structure but more onerous conditions of employment than similar jobs within larger companies.” (p. 156).

The centrality of HR issues to entrepreneurship has motivated calls for more research at the entrepreneurship and HR interface (Barrett & Mayson, 2006; Dabic, De-Urbina-Criado, & Romero-Martínez, 2011; Kim, 2020; Mayson & Barrett, 2014). This research finds that entrepreneurial ventures exhibit different characteristics than established firms, such as severe resource constraints and demands for organizational flexibility (Stokes et al., 2016; Xing, Liu, Boojihawon, & Tarba, 2020), which create unique HR issues (Bendickson, Muldoon, Liguori, & Midgett, 2017). For instance, a key difference between early-stage and established firms is that young firms must rely on more informal HR approaches (Mayson & Barrett, 2006, p. 447). Cardon and Stevens (2004) describe this dynamic:

“In small firms, where resources are likely to be scarce, there may be a very small number of formal HR departments or professionals, increased difficulty in recruiting and retaining employees due to lack of financial resources, and an increased reluctance to engage in costly or restrictive practices. In young firms, where experience is likely to be lacking, we may expect to see a reduced reliance on formalized training, difficulty recruiting due to lack of legitimacy, and more informal and potentially haphazard employee management systems.” (p. 297).

Entrepreneurs are often unable to establish a formal HR infrastructure and, even if they can, it could even be harmful to entrepreneurial performance (Su & Wang, 2018).

Extant research at the HR and entrepreneurship interface has focused on individual-level and venture-level HRM (e.g., Ko & Liu, 2017; Markman & Baron, 2003). Although this line of research has made strides in identifying the HRM challenges entrepreneurs face, work at the intersection of HR and entrepreneurship suffers from similar deficiencies as entrepreneurship research before the ecosystem turn: it adopts an individual-, group-, or venture-perspective and does not acknowledge that entrepreneurial and HRM activities are embedded in systems of place-dependent, extra-organizational forces.

Although published studies have not explicitly examined HR issues at the entrepreneurial ecosystem-level, EE research has pointed to the importance of HR and there is evidence that EEs are involved in HR issues. Spigel and Harrison (2018), for instance, do not explicitly mention *human* resources, but they do emphasize “the necessity of understanding the processes through which resources are created or attracted to an ecosystem and the processes by which entrepreneurs access these resources” (p. 163). Kline, Hao, Alderman, Kleckley, and Gray (2014) also identified the importance of human capital in EEs. Further, Cao and Shi (2020) acknowledge that universities, established firms, and new ventures may help to “channel” human resources to entrepreneurs. Thus, several EE studies signal the importance of an ecosystem’s human resources but scholars have not formulated a theory explaining how EEs operate as inter-organizational HRM systems.

2.3.1. HRM, rents, and entrepreneurial ventures

Rents theory (Chadwick, 2017; Chadwick & Dabu, 2009) provides a relevant theoretical foundation for understanding how EE-HRM influences entrepreneurs’ performance. Rents are the “economic profit [...] that accrue to a factor of production” (Chadwick, 2017: 501). Rents are linked to factors that increase the value created by human capital or decrease the costs of human capital (Chadwick, 2017: 502).

Two types of rents that have received extended scholarly attention because of their implications for firm performance are Ricardian and entrepreneurial rents (Alvarez, 2007; Keyhani, Levesque, & Madhok, 2015). *Ricardian rents* are tied to the scarcity of resources—“inelasticities in the supply of a valuable resource” (Chadwick, 2017: 501). For example, the increased demand for human capital in additive manufacturing means that entrepreneurs who have access to this capital can capture traditional Ricardian rents and experience higher performance relative to other entrepreneurs until the human capital becomes non-scarce. *Entrepreneurial rents* are based on actions that create value from discovering new opportunities or exploiting existing opportunities (Keyhani et al., 2015). Firms generate entrepreneurial rents by identifying opportunities, having the initiative to act, and creating innovative processes and technologies not available to other firms.

To date, rents theory has been used to explain how intra-organizational HRM activities influence firm heterogeneity and performance via rent generation (Keyhani et al., 2015). In the sections that follow, we clarify the uniqueness of *inter-organizational* EE-HRM and the theoretical and practical need for the EE-HRM concept, articulate how EE-HRM emerges, aggregates to the ecosystem, and influences entrepreneurial performance via rent generation.

3. The uniqueness of EE-HRM

An EE is a “meta-organization”—a “network of firms or individuals not bound by authority based on employment relationships, but characterized by a system-level goal” (Gulati, Puranam, & Tushman, 2012, p. 573). The goal of EEs is to be an environment supportive of entrepreneurs and, in doing so, to improve the local community (e.g., Roundy, 2019). As meta-organizations, EEs differ from traditional organizations in several ways with implications for the uniqueness of EE-HRM. Before theorizing how EEs influence talent management, we establish the concept of EE-HRM by describing its characteristics and distinctiveness from organizational HRM.

EE-HRM does not manifest as HRM activities within isolated organizations but in communities of individuals within cities or regions (Audretsch & Belitski, 2017). Community members are distributed throughout organizations across sectors and at varying

geographic distances within and across an ecosystem's boundaries. By contrast, in organizational HRM, HR functions are typically performed by individuals with formal HR roles, duties, and responsibilities. In entrepreneurial ventures, HR responsibilities might be performed on a somewhat informal basis (Cardon & Stevens, 2004; Mayson & Barrett, 2006); however, HRM research has primarily focused on activities that occur within organizations or in limited, formal inter-organizational relationships (e.g., the relationships between HR vendors and clients) (e.g., Markoulli et al., 2017).

With EE-HRM, HR functions are informally performed by independent and financially autonomous, boundary-spanning EE participants from a variety of professional backgrounds, organizations, industries, and sectors (e.g., entrepreneurs, incubator directors/employees, university members, investors, government officials). These individuals voluntarily contribute to EE-HRM based on self-selection rather than formal obligations and contracts (Autio & Levie, 2017). Thus, participation in EE-HRM is appreciably more flexible, fluid, and dynamic than participation in organizational HRM. Indeed, EE-HRM is an example of what can be termed collective HR management: the HR function is performed not by a focal organization's members but, in part, by a coordinated collective (e.g., a local entrepreneurship community). Any actor in the collective can participate in and contribute to EE-HRM.

Beyond the differences in intra- and inter-organizational levels, who performs HRM, and the (in)formality of their roles, the boundaries of organizational HRM and EE-HRM also differ. Although individuals enter and exit organizations with some fluidity, as a meta-organization, an EE's boundaries are substantially more porous and permeable (Gulati et al., 2012). EE boundaries are of two types: spatial (e.g., city- and regional-borders; distance from an ecosystem's epicenter) and socio-cultural (e.g., the span of an ecosystem's networks and culture) (cf. Walsh & Winsor, 2019). Individuals within an EE's geographic and socially constructed boundaries are considered "within" and "part of" the ecosystem.

Inside the boundaries of ecosystems and organizations, the ties among actors engaged in EE-HRM and organizational HRM are also different. With organizational HRM, ties are based on organizational membership and formal employment relationships. In contrast, with EE-HRM, actors are not connected by formal employment arrangements but by their geographic proximity and shared goals, activities, and EE culture (Donaldson, 2020; Roundy et al., 2018). For instance, EE participants often contribute to EE-HRM because of ties to the EE based on the common goal of creating successful businesses or improving the local community (Feld, 2012).

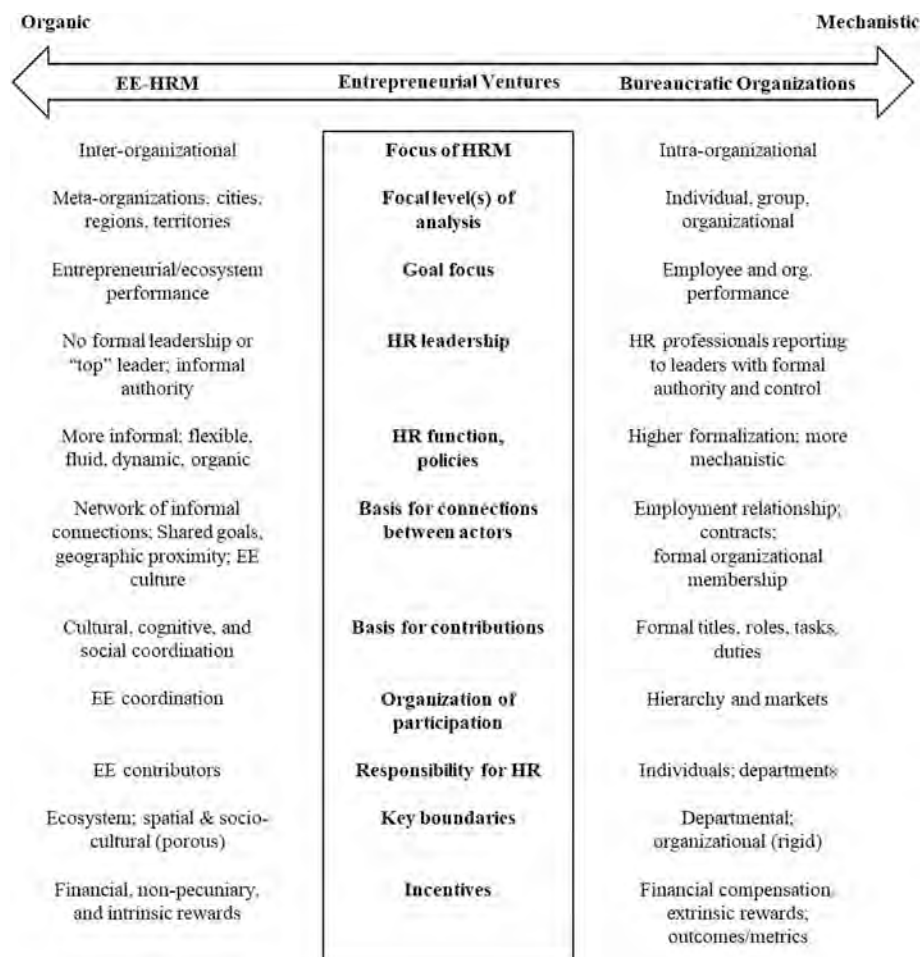


Fig. 1. A comparison of EE-HRM and organizational HRM.

Table 1
Entrepreneurial ecosystem human resource management (EE-HRM).

EE-HRM subsystems	Key activities by EE-HRM contributors	How does EE-HRM influence entrepreneurial performance via rent generation? (Meta-mechanisms and causal links)
EE Talent Acquisition	<ul style="list-style-type: none"> ■ Assessing existing EE talent ■ Recruiting new EE talent ■ Selecting EE talent 	<ul style="list-style-type: none"> ■ Navigates information asymmetries in local labor markets using deep smarts ■ Increases labor market access advantages and the exploitation of labor market inefficiencies ■ Identifies and attracts entrepreneurial talent to the EE that ventures struggle to reach <p><i>Collective Deep Smarts</i></p>
(1a) EE talent assessment	<ul style="list-style-type: none"> ■ Auditing the skills, specializations, and competencies of an EE's workforce. ■ Formally assessing an EE's talent needs (e.g., surveying ecosystem participants) ■ Informally assessing an EE's talent needs (e.g., based on ecosystem narratives and informal communications) 	<ul style="list-style-type: none"> ■ Provides region-steeped, collective expertise and holistic judgments of the labor pool which expedites workforce assessments ■ Facilitates the flow of community information about EE talent gaps (in terms of quantity and quality of human resources) and EE competencies ■ Enables labor market assessments that require fewer resources <p><i>Resource Preservation and Access</i></p>
(1b) EE talent recruitment	<ul style="list-style-type: none"> ■ Branding the EE and generating "local buzz" ■ Developing a positive ecosystem vibe ■ Constructing and communicating positive EE narratives ■ Leveraging positive media attention 	<ul style="list-style-type: none"> ■ Preserves recruiting resources; lowers search costs for valuable entrepreneurial human resources ■ Expands the quantity and quality of the ecosystem's talent pool ■ Conveys the EE's value proposition to prospective talent ■ Provides preferential access to an expanded segment of entrepreneurial human resources. <p><i>Entrepreneurial Human Capital</i></p>
(1c) EE talent selection	<ul style="list-style-type: none"> ■ Screening and evaluating prospective participants for their knowledge, skills, personality, and values ■ Matching talent to EE ventures ■ Creating and leveraging newly recruited participants' social ties to "place" ■ Encouraging recruits to participate in EE events to fortify ties ■ Integrating recruited participants in an EE's social network 	<ul style="list-style-type: none"> ■ Uses tacit knowledge to screen available talent to ensure "fit" with the EE ■ Evaluates and secures talent from outside the ecosystem's geographic footprint ■ Selects talent who will work well with entrepreneurs and who have (and will share) entrepreneurial knowledge, values, skills, and competencies ■ Solidifies network ties between new recruits and entrepreneurs and absorbs some of the costs of building networks <p><i>Community Knowledge Transfer</i></p>
EE Learning and Development	<ul style="list-style-type: none"> ■ Enculturating and onboarding EE participants ■ Imparting entrepreneurial knowledge through venture creation programs ■ Encouraging social learning and communication through EE events ■ Arranging mentor relationships ■ Encouraging the internalization of EE norms, values, and logics ■ Introducing EE participants to common entrepreneurship tools, heuristics, jargon and vocabularies 	<ul style="list-style-type: none"> ■ Aggregates and shares localized idiosyncratic knowledge ■ Transfers dynamic knowledge throughout the EE thereby helping entrepreneurs develop expertise and tacit knowledge ■ Improves entrepreneurs' venture development skills, formally and informally ■ Familiarizes entrepreneurs and startup employees with the culture of early-stage ventures ■ Promotes an entrepreneurial dominant logic ■ Improves entrepreneurs' ability to create value based on opportunities <p><i>Ecosystem Supporting Behaviors</i></p>
EE Performance Management and Rewards	<ul style="list-style-type: none"> ■ Encouraging prosocial behaviors and positive contributions to the EE ■ Sanctioning negative performance and policing violations of ecosystem norms ■ Recognizing, rewarding and publicizing entrepreneurs' successes with pecuniary and non-pecuniary benefits 	<ul style="list-style-type: none"> ■ Recognizes results as well as discretionary effort using valued pecuniary and non-pecuniary rewards ■ Motivates preferred entrepreneurial behaviors (e.g., using foresight in identifying opportunities, being innovative)

(continued on next page)

Table 1 (continued)

EE-HRM subsystems	Key activities by EE-HRM contributors	How does EE-HRM influence entrepreneurial performance via rent generation? (Meta-mechanisms and causal links)
EE Retention	<ul style="list-style-type: none"> ■ Promoting intrinsic motivators associated with entrepreneurial work ■ Strengthening successful participants' ties to the EE and region by increasing their ecosystem embeddedness 	<ul style="list-style-type: none"> ■ Sanctions negative behaviors that harm the EE (e.g., free riding) <p><i>Place-Based Switching Costs</i></p> <ul style="list-style-type: none"> ■ Strengthens ties to place by capitalizing on entrepreneurial passion and EE cohesion ■ Increases switching costs for those embedded in the EE ■ Increases idiosyncratic knowledge that yokes participants to the EE

Actors involved in organizational HRM and EE-HRM also have different motivating incentives. In bureaucratic organizations, employees in formal HR roles are incentivized primarily by financial compensation and the directives of managers with hierarchical control, which are typically tied to concrete outcomes and metrics. In entrepreneurial firms, individuals may engage in HRM without having formal titles and responsibilities, but they are still connected to a venture by an employment relationship and share in the venture's financial outcomes. EE participants can also receive financial benefits from their involvement in EEs (e.g., investment capital) but, because participants are not connected to an EE by formal employment relationships, EE-HRM contributors receive non-pecuniary benefits, such as access to social networks, knowledge, reputational benefits, legitimacy, and reciprocated prosocial behaviors (cf. Autio, Nambisan, Thomas, & Wright, 2018). Finally, both bureaucratic organizations and entrepreneurial ventures have some degree of formal policies that guide HRM activities; however, in ecosystems, EE-HRM is driven by informal monitoring of the community's norms, behavioral rules, and the trust of other EE participants (Feld, 2012; Muldoon, Bauman, & Lucy, 2018). Fig. 1 summarizes the differences between organizational HRM (in established firms and entrepreneurial ventures) and EE-HRM. The figure conveys the nuanced reality that HRM can be conceptualized on a continuum based on the formality of activities.

4. The emergence and formation of EE-HRM

Before examining the processes through which EE-HRM influences ecosystem participants, we examine two questions related to EE-HRM emergence and formation: why do EE participants engage in ecosystem-focused HR activities and how does EE-HRM manifest from individual EE participants? Addressing these questions elucidates what EE-HRM is and how it develops.

We have argued that EE-HRM is unique, in part, because EE-HRM contributors informally engage in an EE, not based on formal relationships. This begs the question: *why*, then, would a community member self-select to contribute to EE-HRM? To answer this question, we contend that EE-focused HR activities are enacted by ecosystem contributors primarily because of two mechanisms—self-interest and altruism (De Dreu & Nauta, 2009)—which occur simultaneously (cf. Van de Ven, Sapienza, & Villanueva, 2007), ideally in a balanced manner. Although there may be similar drivers underlying contributions to organizational HRM, these two forces manifest in different dynamics at the inter-organizational, community level.

First, EE-HRM contributors attract, develop, and manage entrepreneurial talent, in part, because, while it may not generate direct financial benefits, doing so aligns with self-interest and allows contributors to achieve personal and professional goals (Autio & Levie, 2017). For example, entrepreneurs benefit economically from HRM actions that deepen the pool of entrepreneurial talent and from the commercial development that occurs as ecosystems grow (Miles & Morrison, 2020). Entrepreneurs also benefit from reciprocal prosocial behaviors triggered by their helping behaviors (Bolino & Grant, 2016). Investors benefit from having more ventures to invest in (Spigel, 2020). Support organizations, such as incubators, benefit from attracting entrepreneurial talent and more potential clients, which supports their missions and funders' expectations of strengthening the ecosystem. Thus, while EE-HRM is voluntary, it aligns with EE participants' "enlightened self-interest" (Van de Ven et al., 2007).

EE participants also engage in EE-HRM for altruistic reasons and based on their desires to grow their regional economies and see other EE participants succeed. Altruism leads to prosocial behaviors (Bolino & Grant, 2016), such as making introductions and offering advice, which are voluntary actions intended to benefit other EE participants (Gilbert, Li, Velez-Calle, & Crews, 2019; Roundy, 2020b; Simpson & Willer, 2008). When EE contributors engage in altruistic, prosocial behaviors, including many of the HR activities described in the next section, they benefit other participants even though it "costs" contributors, directly or indirectly.

For EE-HRM to exist is not a matter of an isolated individual or venture engaging in HR activities; as described in the next section, EE participants across organizations must be coordinated in their ecosystem-focused HR activities. For instance, if an EE's culture is driven by a strong "community logic" (Zhao & Wry, 2016), which promotes values and behaviors associated with cooperation, collaboration, social benefits, and trust (Marquis, Lounsbury, & Greenwood, 2011; Thornton, Ocasio, & Lounsbury, 2012), the culture will encourage EE participants to engage in prosocial behaviors, such as EE-focused HR activities. The HR activities of individual EE participants aggregate to the ecosystem level by creating a shared role structure (Eva, Cox, Herman, & Lowe, 2019)—EE-HRM—which is a set of actions not tied to a specific EE participant but that is performed by the pooled influence of all EE participants who engage in the HRM role. Functioning in this way, the ecosystem has shared responsibility for HRM.

5. Towards a theory of EE-HRM

We propose that EE-HRM is a system of HR practices involving various subsystems—EE talent acquisition, learning and development, performance management and rewards, and retention—connected by EE coordination. The degree to which entrepreneurs leverage EE-HRM is a previously unidentified source of firm heterogeneity. We contend that entrepreneurs who use their ecosystems for EE-HRM experience improved performance. Each of the following sections focuses on a subsystem of EE-HRM and describes (1) how it functions and (2) how entrepreneurs who leverage it generate rents, which improve entrepreneurial performance (Chadwick & Dabu, 2009). We then explain how EE coordination influences the relationship between EE-HRM and rent generation. Table 1 summarizes the components of EE-HRM and the mechanisms explaining how they function and generate rents.

5.1. EE talent acquisition

Entrepreneurs face two organizational challenges in HRM acquisition that are tied to—and potentially solved by—their EEs. First, ecosystems may not contain all of the resources entrepreneurs need (Harima, Harima, & Freiling, 2020). Even highly developed and vibrant EEs must recruit resources, and particularly human capital, from outside the ecosystem's boundaries (Roundy & Bayer, 2019a). One implication is that the performance of early-stage entrepreneurs suffers if they cannot acquire the talent they need. Second, and compounding the first challenge, even if the human resources that entrepreneurs need exist in their EEs, resource constraints can prevent entrepreneurs from autonomously searching for and identifying the resources as sourcing even local talent is resource-intensive (Timms, 2020). For entrepreneurs who leverage their EEs, EE-HRM functions as an ecosystem-level talent acquisition mechanism that recruits talent to an EE from other regions and assists entrepreneurs in finding appropriate talent. EE-HRM talent acquisition consists of three sub-activities: *assessing* an ecosystem's talent needs and availability, *recruiting* talent, and *selecting* talent to address pressing needs.

5.1.1. EE talent assessment

During talent assessment, EE-HRM contributors continually assess the strengths and weaknesses of the workforce in their ecosystem, which reveals gaps or blind spots (Knowlton, Ozkazanc-Pan, Clark, & Motoyama, 2015) in a region's entrepreneurial talent pool and allows them to plan for workforce trends. For example, through EE assessment, EE-HRM contributors may realize that entrepreneurs in their community are struggling to scale a particular type of venture (e.g., rapid-growth technology firms) because the ecosystem lacks a specific form of local talent (e.g., employees with high-level computer science or B2B sales skills). In response, EE-HRM contributors take the steps to address organizational HR needs through workforce readiness assessments by seeking needed talent (Roundy, 2021). Ecosystem assessment aims to ensure that entrepreneurs have the human resources needed and that the EE does not experience talent gaps (Subrahmanya, 2019).

To plan for an EE's human capital needs, EE-HRM contributors initially assess the focus of an ecosystem. Although EEs are industry agnostic and can support entrepreneurship of any type (Roundy et al., 2018), except for the largest and most resource-endowed EEs, such as Silicon Valley, most ecosystems develop a focus based on a specific grouping of technologies, business models, or industries (e.g., logistics, 3D printing) (Spigel & Harrison, 2018). An ecosystem's focus is attributable to either deliberate investments by EE leaders (e.g., creating a startup accelerator focused on a specific technology) or a region's economic history (Spigel, 2017a). Understanding an ecosystem's aggregate competencies and specializations hones the focus of talent assessment and helps EE-HRM contributors identify participants who fit the values present in the EE and are most likely to improve the performance of the EE.

EE-HRM contributors perform talent assessment as an ongoing process through formal and informal methods. Formal assessment occurs when leaders, typically from support organizations, survey EE participants about their organizations' human capital needs. In contrast, informal HR assessment is tied to the organic communication of information through an EE's social networks (cf. Muldoon et al., 2018). For example, workforce issues often become encapsulated in ecosystem narratives that are spread among participants during informal interactions at EE events (Roundy, 2016). Such narratives, which initially refer to individual organizational issues but eventually aggregate to EE narratives, may become prevalent when there are significant human resource gaps in an EE (e.g., entrepreneurs bemoaning that, because of an EE limitation, certain venture types cannot be created in the ecosystem). As information related to gaps in EE talent spreads, EE-HRM contributors respond to workforce gaps by capturing the attention of prospective participants and actively recruiting talent to the EE.

5.1.2. EE talent recruitment

Throughout the lifecycle of an ecosystem, EE-HRM contributors recruit new entrepreneurs, investors, mentors, and individuals desiring to work for early-stage ventures. Prospective EE participants can be outside an ecosystem's geographic footprint or within the EE boundaries but not actively participating (e.g., Knowlton et al., 2015).

EE-HRM contributors engage in practices to recruit new ecosystem participants. To gain audiences' attention, EE-HRM contributors leverage an ecosystem's positive characteristics and use them to brand the ecosystem as a flourishing environment for entrepreneurship (Roundy, 2019a, b; Stangler & Bell-Masterson, 2015). EE-HRM contributors draw attention to evidence that the EE is vibrant. If EE-HRM contributors are successful in generating "local buzz" about their ecosystem (Godley, Morawetz, & Soga, 2019), through their own narrative efforts or through leveraging positive media stories, the EE is more likely to capture others' attention and receive consideration from prospective talent (Roundy & Bayer, 2019b).

5.1.3. EE talent selection

After gaining attention through recruiting efforts, EE-HRM contributors act as ambassadors for the ecosystem and select talent (Dedeheyir, Mäkinen, & Ortt, 2018; Motoyama, Fetsch, Jackson, & Wiens, 2016). EE-HRM contributors engage in general and targeted selection practices to source and match needed knowledge, skills, and abilities to an EE and its entrepreneurs. General practices focus on convincing participants to join an EE, which often requires physically relocating to the EE from another city (cf. Roundy, 2019). Targeted practices specifically match a prospective EE participant with a particular entrepreneur and venture. Both general and targeted selection strategies solidify ties between recruited participants and an EE's social network of current participants.

A specific EE-HRM activity that embeds prospective participants in an EE's network, and sets the stage for selecting talent, is inviting "candidates" to take part in EE events and programs. The programs offered by support organizations and other EE entities often involve participants visiting the ecosystem and being in residence (e.g., in accelerator programs; Hallen, Cohen, & Bingham, 2020). Other EE events, such as pitch competitions and informal meetings with entrepreneurs, are of shorter duration but still allow prospective participants to experience an EE, which creates social ties to existing participants and geographic ties to place. During these activities, EE-HRM contributors screen prospective recruits for their knowledge, skills, and values-fit and, specifically, for characteristics such as entrepreneurial passion, willingness to contribute to the EE, and the likelihood of behaving cooperatively (Nicotra et al., 2018).

During selection, EE-HRM contributors leverage network connections with prospective participants to "seal the deal." Such connections are especially strong if based on affinity ties and emotional connections to place (Roundy, 2019). For instance, if an EE is in a prospective participants' hometown there is the potential for "boomerang" migration whereby individuals forego "more economically rational work opportunities" to move back to their hometown because of family and other non-economic ties to place (Harrison, 2017). In summary, if EE-HRM participants are successful in assessing, recruiting, and selecting talent, targeted individuals outside a region will relocate to the EE and individuals within the region, who had not previously been involved in the EE, will become active participants, thus expanding the pool of qualified talent available to entrepreneurs.

5.1.4. EE-HRM talent acquisition and rent generation

As described, the talent acquisition function of EE-HRM helps entrepreneurs judiciously examine the talent strengths and weaknesses of their EE, identifies and attracts talent to the EE that entrepreneurs often struggle to reach, and evaluates talent who can easily onboard with entrepreneurs. Thus, EE-HRM assists entrepreneurs in navigating information asymmetries in labor markets, thereby increasing labor market access advantages and allowing entrepreneurs to exploit labor market inefficiencies. For entrepreneurs who leverage their ecosystems, EE-HRM ultimately influences their performance via rent generation, as summarized next, in each talent acquisition phase.

5.1.4.1. Assessment. Chadwick and Dabu (2009) theorize that "many human resource acquisition advantages stem from successfully navigating information asymmetries in labor markets" and that rents are tied to "more effectively identify[ing] unique and valuable human resources for acquisition" (p. 257). EE-HRM helps entrepreneurs identify and overcome talent gaps in their EE. Specifically, EE-HRM assists entrepreneurs who lack the organizational resources to assess workforce readiness, which allows them to plan for EE workforce trends and facilitates the flow of information about talent pool strengths and weaknesses. In this way, entrepreneurs who leverage their ecosystems for HRM benefit from gaining region-steeped expertise, which swiftly expedites their workforce assessments and holistic judgments of the labor pool by invoking the collective "deep smarts" (Leonard & Swap, 2005) of ecosystem contributors. Ultimately, EE-HRM helps entrepreneurs generate rents by allowing them to assess the labor market for entrepreneurial human capital more nimbly and by expending fewer resources than entrepreneurs who do not leverage their ecosystems for HRM.

5.1.4.2. Recruitment. Entrepreneurs who leverage their EE-HRM will have a rent-generating recruiting advantage. In recruitment, EE-HRM conveys entrepreneurs' and the EE's value proposition to prospective talent, thus providing a "compelling answer to the question, 'Why would a talented person want to work here?'" (Chambers, Foulon, Handfield-Jones, Hankin, & Michaels III, 1998, p. 50). If entrepreneurs use their EE-HRM system, they will preserve recruiting resources while still capturing prospective employees' and other resource providers' attention. Thus, EE-HRM helps entrepreneurs access unique and valuable entrepreneurial human resources and lowers the search costs for such talent relative to entrepreneurs without access to EE-HRM. EE-HRM also expands the quantity and quality of the ecosystem's talent pool in the region and provides entrepreneurs access to valuable talent outside the ecosystem.

5.1.4.3. Selection. EE-HRM contributors screen available talent to ensure fit with the EE using their tacit knowledge about the needs of entrepreneurs. By screening prospective EE participants, EE-HRM selects talent who will work well with entrepreneurs and who have (and will share) entrepreneurial knowledge, values, and skills. As a result, EE-HRM selected talent can be developed and mentored in the unique roles required by entrepreneurial firms (Chadwick & Dabu, 2009). EE-HRM connects entrepreneurs with workers "who have innovative personalities and needed entrepreneurial capital" (Chadwick & Dabu, 2009). During selection, EE-HRM solidifies network ties between new recruits and entrepreneurs and helps shoulder associated HR costs of building networks and creating social connections between entrepreneurs and entrepreneurial human capital.

In sum, EE-HRM helps entrepreneurs generate rents by being a source of "labor market access advantages" (Chadwick & Dabu, 2009: 258) that allows entrepreneurs to acquire human resources at a bargain (lower cost) relative to entrepreneurs who are not in EEs with robust EE-HRM activities or who do not leverage their EEs. Taken together, these arguments motivate the following proposition about the relationship between EE-HRM and rent generation.

Proposition 1. Entrepreneurs who leverage EE-HRM for talent acquisition are more likely to experience improved entrepreneurial performance via rent generation.

5.2. EE learning and development

After becoming part of an EE, new participants are acclimated to the ecosystem via social learning (e.g., mentoring, observation) and receive informal and formal training to effectively participate in and draw resources from the EE (Abecassis-Moedas, Sguera, & Ettlie, 2016). There are two types of new EE participants, internal “newcomers” (individuals already within a region but new to participating in its EE) and external newcomers from outside the region. Both newcomers and existing EE participants benefit from entrepreneurship-oriented knowledge and professional development. Specifically, through EE-HRM new EE participants receive training focused on (1) improving their entrepreneurial skills (i.e., entrepreneurship development) and (2) developing their knowledge of the EE (i.e., ecosystem development).

5.2.1. Developing general and specialized entrepreneurial skills

First, entrepreneurs, and especially new entrepreneurs, benefit from training focused on developing general entrepreneurial skills, such as honing their abilities to sell to early customers (cf. Gielnik, Uy, Funken, & Bischoff, 2017; Nunez & Musteen, 2020). General entrepreneurial talent is acquired and refined through various formal and informal learning and development approaches.

Formal training involves practices explicitly aimed at imparting entrepreneurial knowledge and skills, such as venture creation programs offered by support programs and internships at EE organizations. Formal training creates opportunities for new ecosystem participants to gain knowledge and skills related to the practices of finding customers, incorporating a business, obtaining licenses, and raising money, as well as specialized knowledge about how these practices will manifest in their ventures. For instance, venture development programs offered by incubators help entrepreneurs learn generalized knowledge (e.g., what a business model is) and generate knowledge specific to their ventures (e.g., refining specific business models; e.g., Miles et al., 2017).

Entrepreneurial knowledge is also developed through informal EE-HRM mechanisms, such as the vital social learning that occurs at ecosystem events, pitch competitions, EE “visioning” sessions, award ceremonies, and networking meet-ups (Konczal & Motoyama, 2013). EE-HRM contributors facilitate these types of casual yet intentional and meaningful interactions by encouraging ecosystem participants to attend EE events and by arranging informal mentoring relationships (Saunders, Gray, & Goregaokar, 2014).

5.2.2. Developing entrepreneurial ecosystem knowledge

In addition to knowledge about the entrepreneurship process and their ventures, newly recruited participants also gain knowledge about the EE. EE-specific knowledge allows participants to develop a cognitive schema for where resources are located and includes knowledge about who is part of the EE’s social networks, where to find information, and “who knows what” (Roundy, 2020b). By facilitating this learning, EE-HRM contributors assist in the “creation and spillover of knowledge on how to organize effectively and entrepreneurs combine [...] [this] knowledge with their specialist knowledge about a given technology or industry” (Cao & Shi, 2020, p. 6).

Gaining ecosystem knowledge consists of learning the culture of the ecosystem, which enables entrepreneurs to navigate the EE, be productive contributors, and, ultimately, to leverage the EE for resources (Donaldson, 2020; Roundy, 2020b). EE development is, thus, a form of enculturation, or “onboarding,” in which new participants internalize the culture of the ecosystem by observing and interacting with EE leaders and other participants and engaging in co-active vicarious learning (Myers, 2018; Pugh, Soetanto, Jack, & Hamilton, 2019). Enculturation occurs, for instance, when new participants attend EE networking events, pitch competitions, and venture development sessions. In these experiences, EE participants are exposed to the norms, values, and cultural rules that influence ecosystem interactions (Roundy, 2017; Walsh & Winsor, 2019). For example, EEs often contain implicit norms, such as “give to the ecosystems before taking,” “pay it forward,” “help other ecosystem participants,” and “take actions to build the community” (cf. Feld, 2012; Motoyama et al., 2016). Internalization of such norms is critical for facilitating resource exchange because EE participation is voluntary.

Talent development efforts also encourage EE participants to adopt common logics of action (or operating logics)—“formal and informal rules of action, interaction and interpretation that guide and constrain decision makers” (Thornton & Ocasio, 1999, p. 804). Two logics are especially critical: a community logic, focused on cooperation, trust, community-building, and collaboration (Marquis et al., 2011; Thornton et al., 2012), and an entrepreneurial logic, focused on innovation, the creation of new technologies and business models, the pursuit of opportunities despite resource scarcity, and tolerance for failure (Cunningham et al., 2019; Roundy, 2017). EE participants are exposed to these logics during ecosystem events, with the explicit goal of introducing them to common entrepreneurship tools, heuristics, concepts, and vocabularies (Keane, Cormican, & Sheahan, 2018; Roundy, 2017; Sadler-Smith & Burke-Smalley, 2015). Learning the culture of an ecosystem means that EE participants acquire a common language and approaches to entrepreneurship. The outcome is EE participants learning overlapping schemas about how to perform in and contribute to the EE.

5.2.3. EE-HRM learning and development and rent generation

EE-HRM facilitates the aggregation and sharing of localized knowledge and creates opportunities for the dynamic transfer of knowledge across EE members (Qian, 2018)—“community knowledge transfer.” Yet, training provided by an EE-HRM that conveys general entrepreneurship skills is less likely than specialized training to lead to rents because these skills are portable; as such, they can lead to efficiency gains but are unlikely to be sources of sustainable competitive advantage (Chadwick & Dabu, 2009). General training can, however, support Ricardian rents by familiarizing entrepreneurs and startup employees with the procedures and culture of early-

stage ventures and how to leverage EE resources, which helps them apply their human capital more effectively than entrepreneurs who do not utilize their EEs (Chadwick & Dabu, 2009).

Beyond generalized training, EEs also provide learning and development that is tailored to the specific needs of entrepreneurs. If entrepreneurs participate in these custom forms of learning and development (e.g., social learning through mentorship), they will not only gain codified, general knowledge about the entrepreneurship process but will refine their idiosyncratic understanding of how to scale their unique ventures. As such, EE-HRM training also supports non-traditional Ricardian rents by transferring dynamic knowledge throughout the EE thereby helping entrepreneurs develop expertise and tacit knowledge (Pugh et al., 2019).

To generate entrepreneurial rents based on human capital obtained from their ecosystems, EE-HRM training must improve entrepreneurs' abilities relative to their competitors to create value based on new opportunities or discover ways to exploit opportunities (Keyhani et al., 2015). EE-HRM can also generate entrepreneurial rents by improving entrepreneurs' ability to combine their localized knowledge with community knowledge in a way that leads to innovations (Chadwick & Dabu, 2009). Through transferring community knowledge, EE-HRM training promotes an entrepreneurial operating logic (Meyer & Heppard, 2000), helps entrepreneurs be the first to discover or create opportunities (e.g., by developing entrepreneurial alertness; Valliere, 2013), increases their initiative to act, and improves their ability to create innovative processes and technologies not available to entrepreneurs who do not leverage their EE. In sum, the learning and development from EE-HRM improve entrepreneurs' abilities to create value from opportunities by helping entrepreneurs learn codified entrepreneurship knowledge, venture-specific (tacit) knowledge, and localized knowledge about the EE.

Proposition 2. Entrepreneurs who leverage EE-HRM for learning and development are more likely to experience improved entrepreneurial performance via rent generation.

5.3. EE performance management and rewards

EE-HRM contributors help to manage the performance of ecosystem participants by recognizing, celebrating, and rewarding positive behaviors that support the ecosystem and informally sanctioning negative behaviors. Performance manifests at the individual/venture and ecosystem levels. First, specific ventures can achieve successes, such as securing external financing from high-profile investors or having large "exits" (e.g., lucrative acquisitions) (Wennberg, Wiklund, DeTienne, & Cardon, 2010). EE-HRM contributors publicize these high-profile, entrepreneurial successes through, for example, local media attention. Success is critical for creating compelling narratives about the EE (Spigel, 2017a). Positive behaviors are also evidenced in participants' actions in the ecosystem such as engaging in prosocial behaviors (Erina, Shatreovich, & Gaile-Sarkane, 2017; Roundy, 2020b). EE-HRM contributors encourage such behaviors by rewarding EE participants who make positive contributions with pecuniary and non-pecuniary benefits, including decision-making power, attention, access to opportunities, support, and funding (Cantner, Cunningham, Lehmann, & Menter, 2020). Such rewards are coveted by entrepreneurs and vital for ventures.

EE-HRM also involves managing EE participants' negative performance, including violations of acceptable behaviors. The sanctioning of negative behaviors is performed via "community policing." Information about "offenders" (i.e., EE participants free-riding or breaking the EE's norms) travels through the ecosystem's social network (cf. Kuratko, Fisher, Bloodgood, & Hornsby, 2017). As Feld (2012) describes, in the Boulder, Colorado EE: "If you contribute [to the ecosystem], you are rewarded often in unexpected ways. At the same time [...] [i]f you aren't sincere, constructive, and collaborative, the community behaves accordingly" (p. 7). In summary, EE-HRM contributors manage participant performance and rewards to ensure that the participants who are attracted to and developed by an EE contribute in constructive ways.

5.3.1. EE-HRM performance management, rewards, and rent generation

Because EE contributions are voluntary, participants must be motivated and rewarded to behave in ways that support the EE. In addition to the volitional nature of EE participation, motivating participants is challenging because human resources, unlike other types of resources, have free will and entrepreneurial activities do not consist of "deskilled, commoditized tasks" (Chadwick & Dabu, 2009: 261; Wright, Dunford, & Snell, 2001). This management issue is further complicated by the complexity of motivating different types of talent, which, as Chadwick and Dabu (2009) explain, often makes it necessary for firms to employ differentiated reward and performance management systems for distinct types of employees within firms. Thus, motivating entrepreneurs to engage in behaviors that generate rents depends on EE-HRM contributors rewarding certain types of performance. As described, entrepreneurs who contribute to the EE with their discretionary efforts are rewarded with pecuniary and non-pecuniary resources.

EE participants may also need to be motivated to be more entrepreneurial (i.e., to use foresight in identifying opportunities or be innovative). The culture of the EE, transmitted through EE-HRM, helps vicariously manage participant behavior. Specifically, EE-HRM helps to generate entrepreneurial rents by motivating innovative actions and rewarding entrepreneurs "for successful entrepreneurial outcomes (i.e., applying innovative knowledge)" rather than actions that reinforce the status quo (Chadwick & Dabu, 2009: 266). EE-HRM identifies and rewards entrepreneurs who are innovative in pursuing the strategic priorities of their ventures.

EE-HRM also motivates ecosystem participants to exhibit cooperative behaviors that benefit entrepreneurs, for example, by "shar[ing] their localized bits of entrepreneurial knowledge" (Chadwick & Dabu, 2009: 266). Entrepreneurs who leverage their ecosystems for HRM, thus, have greater access to such information and are shielded from negative behaviors (e.g., other participants stealing their ideas), which may hinder rent generation. In sum, EE participants have a strong incentive to engage in EE supporting behaviors because EE-HRM rewards entrepreneurs for these behaviors and because of the expected reciprocity of such behaviors from other EE contributors.

Proposition 3. Entrepreneurs who leverage EE-HRM for performance management and rewards are more likely to experience

improved entrepreneurial performance via rent generation.

5.4. EE retention

As ventures scale and entrepreneurial exits occur, entrepreneurs and other EE participants are presented with opportunities to not only leave their ventures but also exit their local ecosystems. As such, talent retention is a strategic HR imperative for an EE. For instance, entrepreneurs operating fast-growing businesses in small and peripheral ecosystems may face the temptation, or even the necessity, of moving their businesses to ecosystems that are perceived as offering greater resources (e.g., more local customers, investors, and talent). High-growth technology entrepreneurs often experience the “pull of Silicon Valley” (Guynn, 2008) and view it as an EE that, while competitive, offers plentiful resources for scaling technology businesses.

Fast-growing ventures and successful serial entrepreneurs are key EE actors because they are sources of employment, entrepreneurial knowledge, and financial capital that can be invested in new ventures within an EE (e.g., Spigel & Vinodrai, 2020). Especially after lucrative exits, entrepreneurs must be given a reason to stay in an EE. As Alvedalen and Boschma (2017, p. 897) describe, “entrepreneurial recycling” occurs when successful entrepreneurs start even more firms and take on roles as financiers and mentors” (also cf. Mason & Harrison, 2006; Mason & Brown, 2014). EE participants who have experienced entrepreneurial failures represent important sources of learning and have knowledge that can improve the performance of other EE participants (Guerrero & Espinoza-Benavides, 2020). Thus, engaging in actions to retain high performing participants, while managing inevitable churn, is critical to maintaining a vibrant EE.

EE-HRM helps an ecosystem attempt to retain its entrepreneurial talent in several ways. At the individual level, EE-HRM contributors increase the likelihood that successful EE members remain in an ecosystem and become “lighthouses” (cf. Tiba, van Rijnsoever, & Hekkert, 2020) by distributing benefits such as access to funding, media attention, local awards, and prestige. EE-HRM contributors also strengthen successful participants’ ties to the EE by attempting to increase their involvement in EE activities (e.g., inviting participants to be mentors or giving them prominent roles in events). At the system level, EE-HRM contributors take steps to strengthen the ecosystem’s culture of “giving back” and the expectation that participants should help grow, rather than abandon, the EE (Bliemel, Flores, De Klerk, & Miles, 2019).

5.4.1. EE retention and rent generation

Retaining human resources is key to maintaining the rents derived via the other EE-HRM functions. Because of the resources ecosystems provide, EEs become “locations that are uniquely attractive to workers” (Chadwick & Dabu, 2009: 259), which creates strategic and affective ties to place that help to bind participants to their EE. High-performing entrepreneurs in an EE may also value working alongside other “stars”, thus strengthening their connections to the EE and, in turn, promoting retention (cf. Call, Nyberg, & Thatcher, 2015). Further, by emphasizing the technological and business focus of an EE, EE training programs provide skills that are, to a degree, specific to the ventures in the EE, which increases employees’ costs to change employment or leave an EE. Thus, EE-HRM increases EE participants’ idiosyncratic knowledge and place-based switching costs.

If workers have stronger ties to place, they will be more willing to invest in deep, firm-specific knowledge. As EE participants become embedded in an ecosystem’s network this further increases their costs of moving to another EE because doing so would mean losing access to EE-specific mentors, support, and colleagues. Employees who are more likely to stay in an EE because of their embeddedness in local networks will be less likely to leave a venture, which “preserve[s] the interpersonal relationship networks” in the ecosystem and their firms (Chadwick & Dabu, 2009: 266). EE-HRM also helps to retain talent and sustain involvement in EEs by capitalizing on entrepreneurial passion and EE cohesion to support the norms of “giving back” to the EE. Finally, even if entrepreneurs experience failure, a high-functioning EE culture does not stigmatize failed attempts (Walsh & Winsor, 2019) but encourages serial entrepreneurship rather than exiting an EE.

Proposition 4. Entrepreneurs who leverage EE-HRM for talent retention are more likely to experience improved entrepreneurial performance via rent generation.

5.5. EE coordination, EE-HRM, and rent generation

In organizations, improving coordination among HR processes, resources, and employee capabilities is arguably the most important HR function for rent generation (cf. Chadwick & Dabu, 2009). HR coordination supports the generation of economic rents by enhancing the efficiency of worker competencies, making more integrated (and, thus, more difficult to imitate) capabilities possible, and combining knowledge into “new and valuable wholes” (Chadwick & Dabu, 2009: 267; Festing & Eidems, 2011).

Coordination is also foundational to EEs as inter-organizational business systems (Adner & Kapoor, 2010). EEs exhibit some degree of uncoordinated self-organization (i.e., order emerging without a system controller) (Boal & Schultz, 2007; Haarhaus, Strunk, & Liening, 2020); however, an EE is also directed by deliberate and purposive orchestration, experimentation, and leadership (Jacobides et al., 2018; Miles & Morrison, 2020; Roundy et al., 2018). EE coordination is the degree to which an ecosystem’s elements are organized to support ecosystem development (Roundy, 2020a; Roundy, 2020b). In addition to ecosystem roles, resources, and infrastructure, how—and the extent to which—these individual components are coordinated is critical for EE functioning (O’Connor, Stam, Sussan, & Audretsch, 2018). However, unlike management within organizations, EEs do not have a central actor to direct the ecosystem. EE relationships are also not governed by formal contracts. Thus, EE-HRM results from meta-organizational forces governed by neither market nor hierarchy (Powell, 1990). Instead, EE-HRM depends on a type of coordination based on relational

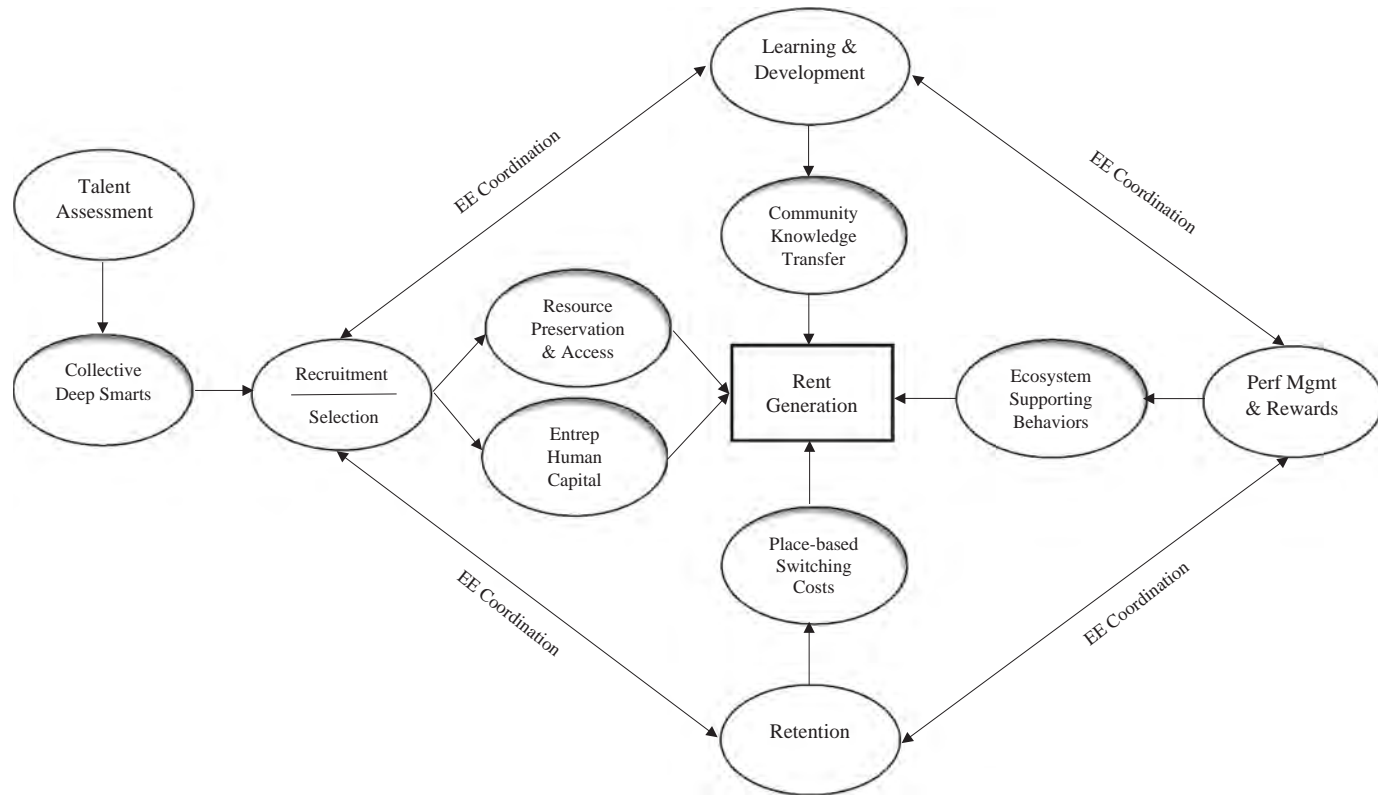


Fig. 2. The influence of EE-HRM on entrepreneurial performance via rent generation.

contracts and EEs participants' altruistic and self-interested motivations. If EE participants' altruism and self-interest are not appropriately balanced, EE-HRM subsystems will lack coordination, which as we explain, weakens the linkages among EE-HRM components and their influence on rent generation.

Despite its importance for organizing EE-HRM activities, EE coordination does not generate rents directly but rather integrates and synchronizes the other HRM functions. Specifically, through EE coordination, a subset of participants, "EE leaders" (Markley, Lyons, & Macke, 2015; Miles & Morrison, 2020), make explicit attempts to "work on" their ecosystems to improve ecosystem functioning (Haines, 2016; Roundy, 2019). EE leaders efficiently organize, foster, and encourage strategic connections among key players in the EE to integrate HRM solutions to entrepreneurs, such as identifying top talent challenges, designing streamlined talent acquisition processes to address the challenges, and identifying established development programs that can improve acquired and existing talent. As we know from organization HRM research, HR coordination pays off: HR business partners who actively coordinate with other functions across workflows experience as much as 11% higher strategic impact than peers who do not coordinate (CEB, 2015 as cited in Geimer, Zolner, & Allen, 2017). We suggest similar synergies at the EE level but operating through unique mechanisms.

Three specific dimensions of coordination—cognitive, social, and cultural (Roundy & Fayard, 2020)—influence the functioning of EE-HRM. When an ecosystem's participants have *cognitive* coordination, they explicitly draw attention to and seek to develop the EE, which reifies its existence and makes the EE a distinct entity in participants' minds. If there is cognitive coordination, community members think about the startup community as an "entrepreneurial ecosystem" and take actions to bolster it. A shared acknowledgment of the ecosystem's existence among its participants is a basis for their commitment to the EE and its entrepreneurs (Goswami et al., 2018). In contrast, in cognitively uncoordinated ecosystems (e.g., unconnected rural communities), there is a system of forces influencing entrepreneurship, but often there is not a shared acknowledgement among members that they are part of a common ecosystem and, as such, they do not make explicit attempts to improve EE-HRM functioning.

In EEs with *social* coordination, strong relationships and dense networks connect EE participants (e.g., Theodoraki, Messeghem, & Rice, 2018) and comprise a "meta expert directory." These networks contain knowledge brokers, who act as a first reference for knowledge seekers, and "entrepreneurial dealmakers" who "coordinate the right match among the various players in the ecosystem" and coordinate the flow of resources among EE participants (Colombo, Dagnino, Lehmann, & Salmador, 2019; Goswami et al., 2018: 117). Social coordination enables EE-HRM by encouraging knowledge flow among EE-HRM contributors engaged in different HR functions (e.g., talent acquisition, training), which synchronizes the HR functions across the EE, making them a more robust and integrated collective. In this way, socially coordinated EEs function as a community transactive memory system—i.e., a shared knowledge repository of "who knows what" and who is engaging in what HRM activities—in the ecosystem (Lewis & Herndon, 2011; Roundy, 2020b).

Lastly, in ecosystems with *cultural* coordination, EE participants share values, norms, "simple rules," and narratives, which are the foundation for a common culture and shared vision for the ecosystem (Roundy, 2020b; Roundy & Fayard, 2020; Spiegel, 2016). High cultural coordination suggests that EE contributors will be more likely to "ensure cooperation between different bodies" (Spiegel, 2016: 151) engaged in EE-HRM. As networked entities with minimal boundaries, ecosystems must be more attentive to coordinating HRM activities such as talent acquisition and development. In uncoordinated EEs, community-level HRM activities may occur in isolation, but EE-HRM is unlikely to exist as an organized system because community members are largely autonomous in their entrepreneurial and HR actions rather than operating as part of an integrated ecosystem. In sum, in coordinated ecosystems, EE-HRM is an interdependent system of entrepreneurship-supporting activities rather than a loose collection of semi-autonomous, unstructured, and independent HR functions.

Proposition 5. Ecosystem coordination strengthens the positive relationship between EE-HRM and rent generation.

Fig. 2 summarizes our theoretical model of entrepreneurial ecosystem human resource management.

6. Research implications

How do regional entrepreneurial ecosystems influence entrepreneurial performance by assisting entrepreneurs in overcoming HR challenges? To address this question, we introduced the EE-HRM concept, clarified how it is distinct from organizational HRM, theorized its emergence, and delineated the processes by which it influences entrepreneurship through rent generation. In constructing our model, we bridged HR and EE research by identifying a specific, largely informal, pathway through which coordinated EEs enable entrepreneurship by influencing rent generation. In the following sections, we unpack the implications of our theory of EE-HRM and propose an agenda for research at the nexus of HR and EEs.

6.1. Contributions to HR and EE research and practice

Our theory of EE-HRM makes several contributions to HR research. First, we explain how HRM manifests at the inter-organizational level of EEs and improves entrepreneurial performance by allowing entrepreneurs to rely on their local ecosystems for managing key HR functions. We incorporate different levels of analysis, different actor types, and different organizational boundaries than are considered in typical studies of intra-organizational HR ecosystems and HRM. Our theorizing also reiterates that HRM is not confined to organizational settings (Garavan et al., 2019; Meijerink & Keegan, 2019). Specifically, our theory of EE-HRM expands the boundaries of HR research and clarifies how HRM manifests outside traditional organizational structures in meta-organizations (Gulati et al., 2012). We explain how EE-HRM is distinctive from organizational HRM and that HRM can be conceptualized on a continuum based on the formality of activities—from conventional HRM in bureaucratic organizations to HRM in entrepreneurial ventures to EE-

HRM.

Our theory addresses calls for HR research to adopt “multidisciplinary” and “multilevel” approaches (Fulmer & Ployhart, 2014; Kim, 2020; Nyberg, Moliterno, Hale Jr, & Lepak, 2014). The need for HRM research to consider multiple levels is highlighted by Renkema et al. (2017, p. 397) who argue that “the paucity of multilevel [HRM] research is rooted in the lack of what we label multilevel thinking” (also Buller & McEvoy, 2012). Our theory incorporates “multilevel thinking” to explain how ecosystem activities (EE-HRM) emerge from the actions and incentives of individual EE participants and influence entrepreneurs and their ventures. In doing so, we propose a theory of collective HR management whereby the HR function is performed not by a focal organization’s members but, in part, by a coordinated collective. HR research has been slow to consider how the geographically bounded communities in which organizations are embedded influence HR practices and outcomes (cf. Almond, 2011). Our theorizing draws attention to the important role played by a region’s entrepreneurial community and the dynamics of specific localized contexts (Welter, 2011) in promoting inter-organizational HR practices. For instance, we theorized that for entrepreneurs to benefit from collective EE-HRM systems their entrepreneurial communities need to be coordinated and promote values that encourage cooperation, community building, and other prosocial behaviors. Without such place-based characteristics, EE participants may not have strong incentives to engage in informal and collective HRM activities.

We also contribute to rents theory and the strategic human capital literature (Campbell, Kruscynski, & Olson, 2017; Chadwick, 2017), which has primarily focused on how intra-organizational HRM activities influence rent generation and firm performance. Chadwick and Dabu (2009: 257-258) suggest that the HRM advantages that help to generate economic rents “may be conferred on firms by external actors such as governments”; however, we identify another set of “external actors”—EE participants—which are influential in the rent generation of entrepreneurs. In doing so, we call attention to a previously unexamined source of firm heterogeneity—EE-HRM.

Our theory also creates insights for EE research. Although EEs are a vibrant topic in entrepreneurship (Velt, Torkkeli, & Laine, 2020), EE research has been criticized as atheoretical (Cantner et al., 2020; Cao & Shi, 2020), and there is limited theory addressing fundamental questions about the ontology of EEs (O’Connor et al., 2018). Similar to a theory of the firm (Grant, 1996), our theoretical arguments when taken to their logical conclusion suggest that one answer to the question, “what is an entrepreneurial ecosystem?” is that it is a form of meta-organizational HRM system that influences rent generation and entrepreneurial performance by collectively performing key HR functions for entrepreneurs. HRM and economic rents theory are, thus, important theoretical lenses through which the activities of EEs can be analyzed. In addition to deepening the theoretical explanations for EE functioning, viewing EEs from an HRM perspective clarifies why it is necessary to look beyond “lists” of EE components to *how* EE participants and other elements work together to shape entrepreneurship.

Despite the substantial progress scholars have made in identifying key EE components, the “people” aspect of EEs has received scant attention. Studies acknowledge the importance of an ecosystem’s human resources (Goswami et al., 2018) but offer no explicit theory explaining how EEs influence entrepreneurs’ HR practices and operate as inter-organizational HRM systems. By contrast, our theorizing focuses squarely on the participants and human resources that comprise EEs and addresses calls to tease apart some of the micro-level processes involved in EEs (Cunningham et al., 2019) while also explaining how the EE is a collective, community-level mechanism for sourcing, developing, and rewarding entrepreneurial talent in a region.

6.1.1. Implications for practice and related phenomena

Our theoretical model has implications for entrepreneurs, HR professionals, and EE builders. The most fundamental insights of our theory are that entrepreneurs should (1) leverage their ecosystems for EE-HRM and (2) consider the coordination of the EEs they seek to operate in or are embedded. Our theory suggests that in coordinated EEs with high-functioning EE-HRM systems, entrepreneurs can help to mitigate their HR constraints by relying on their EEs for acquiring, developing, rewarding, and retaining talent. However, to leverage EE-HRM, entrepreneurs must become “plugged into” (Stephens, Butler, Garg, & Gibson, 2019) their ecosystems and not be passive or non-participants. Further, although entrepreneurs can receive training via university programs, formal educational institutions rarely offer programs on how to be an entrepreneurship mentor, an incubator director, or an effective EE contributor. These skills, which are based largely on tacit-knowledge (Pugh et al., 2019) tied to specific ecosystem contexts, are arguably more effectively taught through the informal learning and development mechanisms (Saunders et al., 2014) that exist within EEs and are facilitated by EE-HRM contributors.

Our theory suggests there may be new career paths, which emphasize networks and boundary spanning roles, for HR professionals at the inter-organizational level of EEs. Also, although communities increasingly extol the virtues of thriving EEs (Feld & Hathaway, 2020), as we have described, *how* EEs positively influence entrepreneurial performance and, relatedly, why EEs should receive community resources is rarely made clear. Our theory explicating the linkages between EEs and entrepreneurs’ HR practices suggests that if policymakers seek to assess the effectiveness of their local ecosystems they should examine the extent to which an EE is coordinated and facilitates entrepreneurs’ HRM.

Finally, our theory explains how HRM is facilitated by meta-organizational forces. However, EEs are not the only localized communities of loosely-connected inter-organizational actors that are receiving growing attention. Insights from our theory might also inform how human resources are informally acquired and managed in other forms of flexibility-dependent, geographically-concentrated, inter-organizational relationships, and particularly those striving to be entrepreneurial in their activities, such as cross-sector social partnership (Yin & Jamali, 2020), disaster response networks (Quarshie & Leuschner, 2020), and cross-firm sustainability initiatives (Valente & Oliver, 2018).

6.2. Directions for future research on EE-HRM

Our theory of EE-HRM opens several avenues for future research at the HR and entrepreneurship interface. First, our model focuses on the processes involved in EE-HRM; however, we do not provide a comprehensive theory of the antecedents to EE-HRM. More work is needed to identify the specific constellation of EE contributor characteristics that influence their likelihood of engaging in EE-HRM, which helps to address two important questions: who is more likely to become an EE-HRM contributor and how do ecosystems encourage participants to step into the role of EE-HRM contributor? An answer to these questions begins with conceptualizing EE-HRM as a form of EE leadership. As we have argued, in coordinated EEs, EE-HRM contributors take an active role in building and developing an ecosystem. In this role, EE contributors give meaningful direction to collective efforts and induce others to pursue a common goal; as such, they are a type of leader (cf. Karp & Helgø, 2009). Research is beginning to examine EE leaders and suggests that characteristics like empowering leadership play an important role in EE leadership (Miles & Morrison, 2020; Roundy, 2020a). However, the phenomenon of “EE leadership development,” and the underlying question of how to develop EE participants who will contribute to EE-HRM, is unexamined by ecosystem scholars and practitioners and a wide-open area of inquiry.

Our theory focuses on the subset of HR functions that entrepreneurs can leverage their ecosystems to fulfill. However, some HR functions, such as managing employee compensation or health and safety regulations, may be more effective if they are operationally performed within ventures by accountants or by specialized vendors. Research is needed that examines how entrepreneurs decide between leveraging EE-HRM and performing HR activities internally. As such, our theorizing points to an important tension that exists between “outsourcing” HR activities to an ecosystem, which allows entrepreneurs to save resources, utilize external expertise, and maintain flexibility, and performing the activities within an organization, which allows entrepreneurs to develop and refine HR competencies.

Because EEs are characterized by nonlinear dynamics, feedback loops, and complex, multi-level interdependencies (Roundy et al., 2018), scholars studying EE-HRM would be well-served by using mixed methods approaches that rely on quantitative and qualitative data to tease apart and triangulate the dynamics of the phenomena (e.g., Scott, Hughes, & Ribeiro-Soriano, 2021). Specifically, in addition to EE-HRM’s effects on rent generation and entrepreneurial performance, empirical research could examine other outcomes of an EE having a thriving EE-HRM system. For instance, there are important questions about how an EE-HRM system influences other aspects of ecosystem functioning and performance and other EE-level constructs (e.g., ecosystem resilience, Scheidgen, 2020). As an example, the degree to which an ecosystem is coordinated and, in turn, has a high-functioning EE-HRM may help to competitively distinguish it. While an EE can replicate some processes, suppliers, vendors, and structures of other regions, the talent of an EE—and the ecosystem forces that help entrepreneurs manage talent—strategically distinguishes it from other regions, helping to form its meta-organizational competitive position.

6.2.1. Boundary conditions

Our theoretical arguments also suggest specific boundary conditions that may influence the proposed relationships among the constructs in our theoretical model. In the following paragraphs, we provide a roadmap of testable propositions which, if explored, would reveal further insights into the “who, where, and when” (cf. Busse et al., 2017) of the relationships in EE-HRM and the generalizability of our theory. Specifically, we suggest macro factors that may influence the relationship between EE-HRM and rent generation (environmental munificence, perceived EE attractiveness, and EE age and size) as well as individual-level factors (an entrepreneur’s humility, endowment level, and balance between operating logics).

First, the rent generating effects of EE-HRM are likely to depend on an EE having environmental munificence—i.e., an environment containing sufficient human resources to support entrepreneurs. Most of our arguments are, in fact, based on the implicit assumption that an EE is rich in human resources. Yet, EEs are not equally resource-endowed (Harima et al., 2020). Spigel and Harrison (2018) introduced the distinction between “munificent” and “unmunificent” ecosystems based on an EE’s aggregate resource levels. Building on this work, Roundy and Bayer (2019a) explained how unmunificent EEs are deficient in five types of capital: financial, social, cultural, symbolic, and human. In unmunificent EEs, entrepreneurial activity is hindered because “the [ecosystem] arrangements and activities of interest are fragile, tentative, unstable, and potentially experimental in nature” (Thompson et al., 2017: 99). Given these differences in EE resource endowments, we suggest that in unmunificent EEs where human resources are lacking, the effects of EE-HRM on rent generation are attenuated.

Differences in EE munificence often stem from macroeconomic differences in the regional- and national contexts in which ecosystems are embedded. For instance, EEs in countries with underdeveloped or emerging economies or that are suffering from the instability of economic disruptions may have access to less (or different) talent than EEs in mature, stable, and thriving economies (Roundy, 2019). Despite these differences, most EE research has focused on vibrant ecosystems, typically in high-income countries with healthy economies (for exceptions, cf. Cao & Shi, 2020). As such, important insights into the generalizability of our theory may be identified by considering EE-HRM in ecosystems in politically unstable regions, struggling economies, and hostile contexts. Studies of EEs in these “extreme contexts” (Alvi, Prasad, & Segarra, 2019) could test if such EEs are able to provide EE-HRM, perhaps through creative mechanisms not identified in our proposed theory. This is an important question as underdeveloped and emerging economies may be precisely the contexts in which EE-HRM is most critical for entrepreneurial performance since entrepreneurs benefit most from “helping hands” in their local communities.

Tied to an ecosystem’s objective levels of munificence, an EE’s perceived attractiveness may also influence EE-HRM. As theorized, in their efforts to gain audiences’ attention, EE-HRM contributors leverage an ecosystem’s positive characteristics and use them to brand the ecosystem as a flourishing and supportive environment for entrepreneurship. To accomplish this, EE-HRM contributors attempt to create perceptions that an EE is vibrant. However, if these efforts are unsuccessful and an EE is viewed by prospective

stakeholders as unattractive, negative perceptions will discourage prospective participants from taking on the risks of entrepreneurial activities, encourage non-entrepreneurship employment, and, ultimately, may prevent individuals from being drawn to an EE (Spigel & Harrison, 2018). Thus, another boundary condition on the influence of EE-HRM on rent generation is the perceived attractiveness of the EE to the prospective labor pool; EEs must be perceived as having desirable characteristics for EE participants to move there and become involved in the ecosystem.

Two related boundary conditions, which may also be sources of heterogeneity in an ecosystem's ability to provide EE-HRM, are differences in EE age and EE size. First, although EEs follow different life cycles in their development, they generally progress from nascence to maturity (Mack & Mayer, 2016). In nascent EEs, key elements such as social networks, investor sophistication, success stories, and entrepreneurship human capital are absent or underdeveloped (Mack & Mayer, 2016), which should weaken the components of EE-HRM, their coordination, and EE-HRM's effects on rent generation. Likewise, EEs also differ in size because of their geographic boundaries, population, and the size of the economies in which they are embedded (Audretsch & Belitski, 2017). Small town EEs typically have different compositions of local resources than large EEs. In contrast, in larger ecosystems, there is a greater likelihood that EE participants can find the human resources they need inside the ecosystem instead of having to pursue resources from external providers (Roundy & Bayer, 2019a). As EE size increases and local resources are more plentiful, EE-HRM becomes more developed and entrepreneurs are able to rely more on EE-HRM to facilitate the relationships among EE participants. However, if EEs become too large, coordination can become a challenge as participants are dispersed over large distances and diffuse social networks (cf. Breznitz & Taylor, 2014). Thus, we suggest a curvilinear relationship in that large and small EE's may experience lower levels of EE-HRM.

Our theory also suggests it is useful to consider individual-level boundary conditions. For instance, an important difference between entrepreneurs is that some are more willing and able to leverage their EEs for resources than others. However, it is not clear why some entrepreneurs take a "go-it-alone" approach to opportunity pursuit, venture development, and HRM while others have an "ecosystem mindset" (Ratten, 2020) and are open to relying on actors in their local communities. One potential area that may shed light on such questions is leadership work on humility (Ou et al., 2014), which finds important differences in entrepreneurs (Vilanova & Vilanova, 2020) in their willingness to obtain accurate self-knowledge, appreciate others' contributions, and be open to improvement. Assessing entrepreneurs' humility may be a starting point for understanding why some entrepreneurs are more likely to use their EEs and rely on others in their local communities for HRM. We contend that humble entrepreneurs are more likely to accept help from their EEs and leverage them for human resources.

Entrepreneurs are also likely to differ in their motivation to leverage their EEs because of their resource endowments. If entrepreneurs are highly resourced (e.g., entrepreneurs who have experienced a lucrative exit in previous ventures or have received significant early-stage investment), they will have greater slack resources, will be more able to pay for HR functions "in house," and will be less dependent on their EEs. We propose that resource-endowed entrepreneurs may perceive that they do not need to become valued members of their local EEs, because they have, or *think* they have, little to gain from being plugged into their EE, and, thus, are less likely to utilize their EEs for EE-HRM.

Lastly, we theorized that entrepreneurs balance altruistic motivations focused on helping other entrepreneurs and strengthening their local communities with an enlightened self-interest focused on instrumental actions aimed at improving their personal (and venture) performance. However, if altruism and self-interest are not balanced, and if either motivation dominates the other, then EE coordination will suffer. For instance, if entrepreneurs are exclusively driven by self-interest and do not prioritize helping others in their local ecosystem, they will be unlikely to engage in many of the prosocial behaviors required for EE-HRM to function because these actions often do not have an immediate and direct benefit for ventures' financial performance. Likewise, if EE participants are excessively altruistic and focused solely on community improvement at the expense of their personal outcomes then their ventures will suffer and the EE will lack the thriving ventures needed to recruit and retain entrepreneurial talent. For this reason, it has been argued by various researchers that in thriving EEs, participants must strike a balance between operating according to an entrepreneurial-market logic based on self-interested motives emphasizing efficiency, competition, wealth accumulation, profit maximization, and value capture versus a more altruistic community logic focused on community development, prosperity, cooperation, and value creation (Marquis et al., 2011; Roundy, 2017; Thornton et al., 2012). If EE participants' operating logic is not appropriately balanced, the link between EE-HRM and rent generation will be weakened.

7. Conclusion

Entrepreneurial ecosystems are increasingly recognized as engines for economic and community development (e.g., Mason & Brown, 2014; Spigel & Harrison, 2018). However, navigating an ecosystem is especially challenging for resource-constrained entrepreneurs who may struggle to identify where talented individuals are located. To date, EE research has not been able to shed light on these challenges because the processes by which ecosystems influence HRM have not been explicitly explored. Our theoretical model addresses this issue by identifying a specific set of mechanisms through which coordinated EEs benefit entrepreneurs' performance via talent management and rent generation. Our theory of EE-HRM is designed to spur further research on the human resource component of EEs and reveals new connections between HR and entrepreneurship research.

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