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# Lost in space? Refugee entrepreneurship and cultural diversity in spatial contexts

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**Abstract:** In the past decade, refugee entrepreneurship has received unprecedented political and public attention worldwide and especially in Germany. Due to the circumstances of the forced migration and asylum procedure, refugee entrepreneurs are socially disembedded in both: the co-ethnic community and in the local community, in comparison to other immigrant entrepreneurs or native entrepreneurs. Since asylum seekers are allocated to their residence independent of their will, it is crucial to assess how their socio-spatial embeddedness determines refugee entrepreneurial propensity. We depart from the abstract concept of mixed embeddedness and concretize spatial embeddedness in urban, semi-urban and rural environments. By building on the knowledge spillover theory of entrepreneurship (KSTE), we include embeddedness in cultural diversity in our research model, too. The econometric analyses of the German Microcensus suggest, first, that refugees are especially prone to entrepreneurship. Second, intercultural embeddedness has the strongest significant positive correlation with refugee entrepreneurial propensity, compared to other immigrants and native-born. However, when including interaction effects of cultural diversity in different spaces, the positive relationship of ethnic diversity and refugee entrepreneurship holds only true in semi-urban spaces. This provides clues that refugee entrepreneurs in rural or urban environments access resources and opportunities through alternative social capital.

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## 1 Introduction

Although most global migration streams take place in their respective regions of origin, the flow of humanitarian migrants from developing into developed countries in search of asylum has recently increased. As of the end of 2021, Europe hosts over 12 million refugees and forced immigrants (UNHCR 2021), with Germany receiving the highest absolute numbers of refugees in the European Union, according to Eurostat (2021). The magnitude of refugee and immigrant intake of developed economies has led to ever-increasing ethnic heterogeneity or *super-diversity* in the population and complexity in consumer demands in the countries of settlement (Vertovec 2007, 2019). Both immigrant entrepreneurship<sup>1</sup> and refugee entrepreneurship are considered important drivers of individual economic emancipation, local and regional employment, economic growth, and innovation (Saxenian 2002; Rindova et al. 2009; Beckers & Blumberg 2013; Eraydin et al. 2010; Razin & Light 1998; Lofstrom 2004).

International initiatives by the EU, UNHCR, OECD and World Bank have been supporting refugee entrepreneurship and praise it as a panacea for a variety of socio-economic integration pains of persons with experiences of forced migration (OECD 2018; Nazareno et al. 2019; European Commission 2016; Sanchez Pineiro 2017). However, due to the circumstances of forced immigration and the asylum process, refugees, compared to other immigrants, are considered as further dis-embedded from an institutional and socio-spatial perspective (Bloch 2008; Betts et al. 2017). When newly arrived refugees cannot decide on their own location during the asylum process but are settled according to the politically predefined allocation

<sup>1</sup> In the context of this paper, we understand entrepreneurship and self-employment interchangeably, accounting for earning a living in self-determination while exploiting opportunities under finite specific resource endowments and individual uncertainty.

ratio of the Königstein Key (Königsteiner Schlüssel)<sup>2</sup> and locked into these municipalities for three years if they receive financial support, informal and formal institutional barriers come into play that affect the entrepreneurial propensity of refugees (Bundesamt für Migration und Flüchtlinge 2019; Harima et al. 2021).

Entrepreneurship does not occur in a social vacuum (Anderson & Gaddefors 2016; Roth et al. 2012; Steyaert & Katz 2004). Self-employment activities are socially embedded and thereby geographical spaces signify social spaces (Granovetter 1985; Schatzki 1991; Polanyi 2019). As a consequence, entrepreneurs' embeddedness defines their access to tangible and intangible resources that translate via entrepreneurial activity into exploitable economic opportunities (Engelen 2001; Jack & Anderson 2002; Lassalle et al. 2020; Hopp & Stephan 2012). In light of increasing super-diversity, our econometric analyses compare cultural diversity<sup>3</sup> in urban, semi-urban, and rural municipalities and report on discrete socio-spatial context embeddedness of refugee entrepreneurship. We, thus, contribute to understanding refugee entrepreneurship as an outcome of distinct social processes, extending across different, continuously changing, geographic scales (Welter 2011).

Empirical evidence on the phenomenon of refugee entrepreneurship, despite its relevance in the politics and discourses on socio-economic integration of supranational organizations is still scarce (Abebe 2020). This paper addresses this research gap with interaction analyses from the German Microcensus, the largest annual household survey, integrating spatial and intercultural context with individual determinants of embedded agency of refugee entrepreneurs. We depart from the mixed embeddedness approach (Kloosterman et al. 1999; Kloosterman & Rath 2010; Kloosterman 2010) and build on mechanisms from the knowledge spillover theory of entrepreneurship (KSTE) that account for the increasing ethnic heterogeneity and cultural diversity which fuels entrepreneurial endeavors (Acs et al. 2009; Audretsch et al. 2010; Audretsch & Lehmann 2005). Suggesting a focus on alternative forms of refugee and immigrant entrepreneurial embeddedness<sup>4</sup>, we aim to provide explanations of socio-spatial and inter-

cultural situatedness in the scientific debate and want to know:

1. What is the role of refugees' intercultural embeddedness for their entrepreneurial endeavors?
2. How does the interplay of spatial and intercultural embeddedness in urban, semi-urban and rural environments affect entrepreneurship of refugees compared to other allochthone and autochthone working populations?

Our results indicate, first, that experiences of forced immigration and embeddedness in environments of high ethnic diversity relate positively to refugee entrepreneurial propensity. Second, intercultural embeddedness has the strongest significant positive association with refugee entrepreneurial propensity, compared to other working populations of immigrants and native-born. However, when including interaction effects of intercultural embeddedness in different spaces, the positive relationship of ethnic diversity and refugee entrepreneurship holds true only in semi-urban spaces. The regression results show that the mechanism of intercultural embeddedness acts distinctly in different spaces, demonstrating the relevance of including spatial determinants in entrepreneurship research. Further, they provide clues that refugee entrepreneurs in urban and rural environments access resources and opportunities through alternative social capital endowments. For instance, strong ties with the co-ethnic community in the former case or the local community in the latter, instead of intercultural embeddedness, might be more relevant. Across different spaces intercultural social capital seems to change in relevance compared to other forms of tangible capital. These results inform politics and praxis in the ongoing challenge of supporting refugee entrepreneurship as a means of long-term socio-economic integration and on the effects of refugees, intercultural socio-spatial embeddedness. For example, they concern distribution formulas for the settlement politics of newcomers or activities of accelerators in their wider outreach to nascent refugee entrepreneurs in rural areas. Finally, managerial and strategic implications for refugee entrepreneurs can be derived.

In the remainder of the paper, a comprehensive summary and discussion of the relevant theoretical concepts lead to the proposition of our framework of hypotheses. The subsequent empirical part starts with an introduction of the analytical design and the data sample, before presenting results and concluding with a discussion of their contribution to research and practice.

<sup>2</sup> This admission quota of asylum seeker across the federal states and city states is calculated annually on behalf of the tax revenue and population. Further information can be found on: <https://www.bamf.de/EN/Themen/AsylFluechtlingsschutz/AblaufAsylverfahrens/Erstverteilung/erstverteilung-node.html>

<sup>3</sup> We employ interculturality, cultural diversity, and ethnic heterogeneity as synonyms.

<sup>4</sup> Besides co-ethnic and host country embeddedness

## 2 Theory and hypotheses

### 2.1 Refugee entrepreneurship

Forced migration and refugee entrepreneurship are not new phenomena per se, but have gained global epistemological magnitude recently (Abebe 2020). Past evidence suggests explanations for why refugees become and stay entrepreneurs when capitalizing on their resources in the labor market (Andersson et al. 2013; Ardagna & Lusardi 2008; Jones & Ram 2014; Kone et al. 2020). Also barriers that refugee entrepreneurs encounter have been elaborately discussed (Wauters & Lambrecht 2006, 2008). The following section reflects on individual aspects and characteristics of the distinct embeddedness of refugee entrepreneurs compared to immigrant entrepreneurs. Boundaries between the phenomenon of refugee entrepreneurship and extensively researched immigrant entrepreneurs are dynamic and overlap. Foreign-born face higher difficulties in entrepreneurial endeavors (Carter et al. 2015). This is reflected in the concept of *liability of foreignness* in addition to the liability of newness and smallness (Brüderl et al. 1992). Those liabilities potentially intensify in the case of refugees with limited embeddedness in both their country of origin (COO) and the country of residence (COR), because of socio-institutional disadvantages (Light 1979; Hauff & Vaglum 1993). Besides, co-ethnic market demands in the COR are limited due to the financial constraints that refugees face, especially in the aftermath of a costly migration journey (Brücker et al. 2016).

The most striking difference between refugees and other immigrant groups is their intention to migrate which has consequences for their embeddedness. Forced emigration resulting from persecution and threats to life and limb occurs abruptly and without long-term preparation, in contrast to voluntary immigration for reasons related to work, study or family reunification. As a consequence, there is usually less system knowledge concerning the new country of residence and a lack of formal qualifications, either because refugees do not bring them, or because they are not recognized (Rath & Swagerman 2011; Fong et al. 2007; Wauters & Lambrecht 2006, 2008; Gold 1992). Lacking preparation before arrival, abrupt migration causes further linguistic disadvantages when forced immigrants could not learn the language of the host country in advance (Wauters & Lambrecht 2006, 2008; Fong et al. 2007; Bizri 2017; Collins 2017; Heilbrunn & Iannone 2020). Therefore, the possibility of pre-establishing social relationships in the country of arrival is inhibited while social network structures in the country of origin are left behind. Further negative

effects follow for instance in the access to other tangible resources, such as financial capital. Since forced migration journeys into developed countries usually take longer and are more cost-intensive, refugee entrepreneurs are also more dependent on external financial capital (Freiling & Harima 2019). The ease of entrepreneurial endeavors for refugees decreases if financial capital cannot be acquired through social capital and banks might react reluctantly to time-limited residence titles, too (Embiricos 2020; Desai et al. 2020). In addition, possible traumatization and psychological constraints, due to the experiences of forced displacement and asylum process, plus frustration resulting from the involuntary migration, come into play (Gold 1992; Light 1979; Hauff & Vaglum 1993; Heilbrunn 2019).

Besides the described disadvantages, international evidence suggests arguments that support pull factor driven refugee entrepreneurship. For instance, a substantial share of refugees stem from countries with high self-employment rates (Bizri 2017; Sak et al. 2018). Over one third of the adult asylum seekers that immigrated recently to Germany bring self-employment experience from their countries of origin (Leicht et al. 2021), an individual resource of human capital that is considered in entrepreneurship research as a vital factor for successful future entrepreneurial endeavors (Farmer et al. 2011). Refugees who re-start their lives and employment in the COR “from scratch” also show endowments of psychological resilience due to overcoming hardships in the country of origin and during flight (Heilbrunn et al. 2019; Shepherd et al. 2020). Those aspects also enhance a proactive agency and the leveraging of human capital when working on their own account. The interplay of push and pull factors relates to higher rates of refugee entrepreneurship compared to indigenous entrepreneurship in developed countries (Collins 2017; Kone et al. 2020). Thus, integrating opportunity-based and necessity-based arguments, we hypothesize a positive relationship of forced immigration with entrepreneurial propensity:

H1: *Refugees have a higher entrepreneurial propensity than immigrants or native-born.*

### 2.2 Entrepreneurial embeddedness

Social embeddedness describes location in and distance to network structures as relevant social capital (Granovetter 1985) but also the influence of the socio-economic, socio-cultural, and political-institutional context on entrepreneurs. Depending on the position of the agentic entrepreneur in social networks, embedded entrepreneur-

ship can be facilitated or constrained (Zimmer & Aldrich 1987). Embeddedness, therefore, defines to what extent refugees can mobilize entrepreneurially relevant resources and access markets.

In the beginnings of migrant entrepreneurship research, the approaches of ethnic enclave businesses and theories like the middleman-minority (Bonacich 1973) had their assumptions and rationales couched mainly in necessity-based entrepreneurship. Social networks of established business owners within the co-ethnic community, mostly linked to informal activities and escaping legal regulations, were considered as crucial for income generation by immigrants. This accounted especially for industry sectors with few entry barriers and high competition in trade, retail, and hospitality (Floeting et al. 2005). Since then, the explanations of immigrant entrepreneurship in social sciences advanced towards more differentiated paths accounting for the complex interplay of individual drivers of immigrant and refugee entrepreneurship in dependency of the context embeddedness. One of the central concepts for the scientific analysis of immigrant entrepreneurship, the mixed embeddedness approach, reflects the interplay of individual and context factors (Kloosterman et al. 1998; Kloosterman et al. 1999).

### 2.2.1 Mixed embeddedness

Advancing the interactionist approach of Aldrich, Waldinger and Ward (1990), the mixed embeddedness framework explains immigrant entrepreneurship with concepts of individual traits and ethnic group characteristics and its embeddedness in market and opportunity structures, as defined by the institutions of the countries of residence. Thus, mixed embeddedness (ME) indirectly links the socio-spatial context in terms of social capital (co-ethnic community embeddedness and market access e. g.), in holistic interdependence with distinct resource endowments of human capital regarding cognitive and cultural capital. The mixed embeddedness approach has motivated research for the densely populated context of urban neighborhoods in light of the meso or regional and macro or national-level perspectives on (in)formal institutions (Schunck & Windzio 2009; Masurel et al. 2004; Hiebert et al. 2015). Due to its deterministic focus on co-ethnic embeddedness (Harima et al. 2021) on one hand, but vague mechanisms of abstract embeddedness on the other, it has been questioned whether the holistic mixed embeddedness approach sufficiently explains the situation of refugee entrepreneurs (Heilbrunn & Iannone 2020). Mixed embeddedness assumes that immigrant entrepreneurs are

more prone to make use of their ethnic and cultural capital. However, as described before, refugees face co-ethnic and host community dis-embeddedness that results from the circumstances of forced immigration. Besides, in light of the increasing ethnic diversity which surrounds the economic activities of entrepreneurs from distinct origins, there is a conceptual incongruity between immigrant entrepreneurship theory and entrepreneurial ontology. Following the call for changing the mix of embeddedness and concretizing the mixed embeddedness framework in its empirical application in super-diverse cultural environments<sup>5</sup>, we build our hypothetical model on assumptions of the knowledge spillover theory of entrepreneurship.

### 2.2.2 Knowledge spillover theory of entrepreneurship

The knowledge spillover theory of entrepreneurship sketches how intercultural knowledge flows, embedded in ethnic heterogeneity, influence entrepreneurial activities, since surrounding human capital predicts entrepreneurship propensities (Acs & Armington 2004; Acs et al. 2009; Acs et al. 2003). According to KSTE, ethnic diversity triggers entrepreneurial endeavors in terms of total entrepreneurial activity (TEA), start-up rates, growth and internationalization (Li et al. 2018; Audretsch et al. 2010; Audretsch & Lehmann 2005; Audretsch et al. 2019). KSTE, thus, departs from diverse cognitive capital and determines the flow of knowledge in the regional environment that shapes how entrepreneurs act on opportunities and their economic exploitation (Audretsch & Lehmann 2005, 2017). Empirical evidence from KSTE suggests that cultural diversity and ethnic heterogeneity positively influences entrepreneurial activities, generally, and technology-related entrepreneurial endeavors, specifically. It follows theories of structuration (Giddens 1984) and effectuation (Saravathy 2008) that focus the embedded entrepreneurial agent who actively creates and exploits opportunities from heterogeneous social resources (Jack & Anderson 2002; Lassalle et al. 2020).

Economic spaces are not only transformed by business, but also by the people with their ethnic identity (Wang 2013). Drawing on KSTE shines a light on the role of ethnic and cultural diversity for fueling entrepreneurial activities (Audretsch et al. 2010; Audretsch & Lehmann 2005; Rodríguez-Pose & Hardy 2015; Li 2001; Li et al. 2018). Knowledge spillovers conceptually embrace a milieu of critical information on economic opportunities. KSTE

<sup>5</sup> while accounting for the distinctiveness of refugee entrepreneurs from other immigrants or the indigenous working population

has been dominantly applied to entrepreneurial contexts in a narrower sense, focusing on high-tech industry and nascent unicorns. We propose widening the perspective to factors for becoming and being self-employed, following Kuratko and Audretsch (2021). Against the backdrop of focusing in academia predominantly on high-technology and high-growth entrepreneurial endeavors, Welter and colleagues (Welter 2011; Trettin & Welter 2011; Welter et al. 2017; Welter et al. 2019) advocate expanding the narrow definitions of entrepreneurial activities and acknowledging everyday entrepreneurship in scientific inquiry. In addition, by focusing not only on technological innovations but also on cultural product and process innovations, the latter embrace, besides knowledge and cognitive capital, other flows of human and social capital, as well. Thus, awareness rises for ethnic heterogeneity that creates a diversified demand structure on the market. Taking all this together allows us to draw a more nuanced and ontologically pertinent conceptual model of the embeddedness of refugee entrepreneurs in increasing population super-diversity. We, therefore, direct our perspective on refugee entrepreneurship towards a new dimension of embeddedness and introduce intercultural embeddedness as relevant social context dependency.

### 2.2.3 Intercultural embeddedness

Over-embeddedness in co-ethnicity can limit a business' growth potential, for instance due to the bounded relevance of ethnic products in the overall market demand (Lassalle et al. 2020). Moreover, entrepreneurial activities arise, continue, and grow through flows of new and sparse information. Entrepreneurial opportunities are known to emerge from re-combinations of intercultural social capital, processes, and knowledge (Jones et al. 2019; Sahin et al. 2006; Audretsch et al. 2010). Creatively acting on resources and processes from intercultural embeddedness leads to products and services that are new to the national, regional, or local market. Market growth through innovation, hence, stems from intercultural flows of knowledge and resources by using previously unconnected ties, or bridging social capital, instead of co-ethnic social relationships (Stoyanov 2018; Granovetter 1985; Lassalle et al. 2020). Conceptualizing intercultural embeddedness with flows of knowledge and resources, focuses refugee entrepreneurs' alternative resource endowments that they translate into economic opportunities, too. We, further, assume that refugee entrepreneurs exploit e. g. their intercultural competences and resources in business activities, despite other (in) tangible resource disadvantages

that result from their circumstances of migration. Thus, mechanisms of ethnic heterogeneity from KSTE extend the approach of mixed embeddedness with dimensions of spatial and intercultural embeddedness of refugee entrepreneurs. Intercultural resource spillovers further underscore the long-term socio-economic integrative capacity of refugee entrepreneurship in societal super-diversity. This leads to our hypothesizing on the intercultural context-dependent refugee entrepreneurship propensity:

*H2: Refugee entrepreneurship is positively associated with intercultural embeddedness.*

## 2.3 Spatial embeddedness

In line with Krugman's New Economic Geography (Krugman 1998) and the revival of considering space in economic activities, Sternberg (2009) recommends to include regional and spatial dimensions among the determinants of ventures. Geography is a multi-scaled context which provides a milieu of social, economic, political, cultural and regulatory factors and forces (Wang 2013). Hereby, the environmental context shapes the supply and demand of entrepreneurial resources (Sternberg 2009) and the spatial context sets the scene for the creation and exploitation of opportunities (Armington & Acs 2002). Geography and space serve as a proxy for determining the vitality of entrepreneurial endeavors. They crystallize the effects of other factors such as access to resources and markets in relationship with the institutional context (Zahra et al. 2014). According to structuration theory (Giddens 1984), the interaction between agency and structure, represented in spatial embeddedness of entrepreneurs, reflects the dynamic role of social capital, since forms of capital are not purely inherent, but conditioned by the structure itself (Jack & Anderson 2002).

Entrepreneurs are considered a driving force of regional development in their proactive discovery, creation and exploitation of opportunities (David & Coenen 2019). Simultaneously, they draw on resources that result from spatial embeddedness (Stuetzer et al. 2018; Jack & Anderson 2002; Munkejord 2017a, 2017b; David & Coenen 2019). Spatial environments embrace formal and informal institutions, networks and industry clusters. They reflect structures that enable and inhibit embeddedness (Stam et al. 2014; Malecki 2009), of entrepreneurs in general as well as specifically of refugee entrepreneurs. Since space does not account solely for entrepreneurial action, entrepreneurial agents in their socio-spatial contexts perceive opportunities, employ management strategies and drive

their business performance (Wang 2013). Spatial embeddedness determines to what extent refugee entrepreneurs can successfully transfer human capital from the COO to the COR, too (Chiswick & Miller 2009; Thornton et al. 2011). The socio-spatial context affects resource endowments, for instance the cultural, social and human capital of refugee entrepreneurs. Thus, spatial embeddedness is important for shaping and sustaining refugees' businesses performance, as it reflects the specifics of the environment for creating and exploiting opportunities. Refugee entrepreneurs' social embeddedness, as a function of the geographical space in which they are located, conditions their ability to draw on social and economic resources, too.

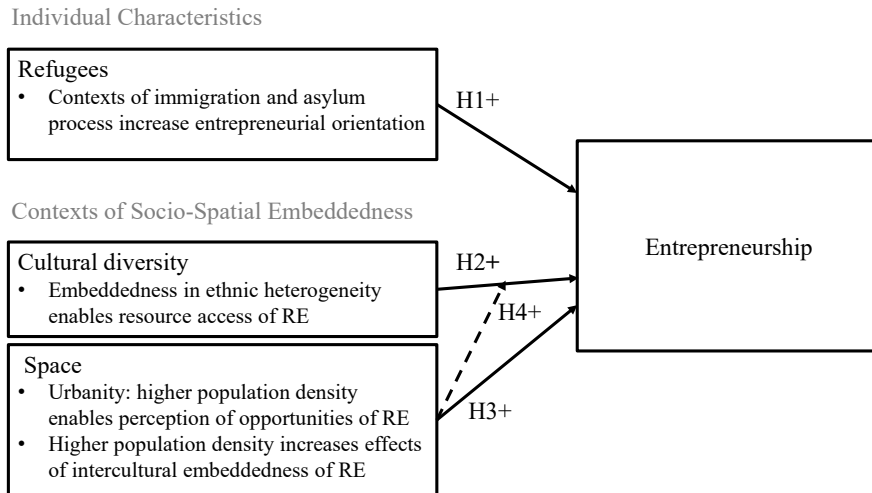
Even when acknowledging the effects of globalization, for instance when sourcing international finance through crowdfunding, the location where ventures develop and grow, determines the relationships that entrepreneurs establish with their stakeholders (Zahra et al. 2014). Spatial dimensions of immigrant entrepreneurship research have so far focused predominantly on the neighborhood level of urban areas that provide the opportunities through geographically dense demand structures, acting as the driving forces for self-employment (Schunck & Windzio 2009; Audretsch et al. 2019a; Barberis & Solano 2018; Menzies et al. 2007). In this regard, urban areas are particularly conducive to immigrant and refugee entrepreneurship because of agglomeration economics (Acs et al. 2009). Micro spaces like urban neighborhoods form a relevant geographical context for small retail and service entrepreneurs that deliver their products and services in a small area (Schunck & Windzio 2009; Kloosterman et al. 1999). Other regional spaces were mostly neglected, despite the fact that hampered access to loose entrepreneurial networks and ecosystems in rural areas also affects entrepreneurship activities (Li et al. 2018; Masurel et al. 2004; Wagner 2005). This leads to an under-theorization of other spatial contexts (Wang 2013). Besides, differences in norms and values across places which affect human and social capital across different spaces have been detected in the past (Zahra et al. 2014). Thus, a broader comparative research perspective is needed with respect to making contextual effects tangible and measurable and consider the distinct spatial settings of urban, semi-urban, and rural environments through different lenses. Urban municipalities with denser networks and access to social capital facilitate entrepreneurship and provide more favorable conditions for immigrant and refugee entrepreneurship than rural environments. Detangling the role of space, we assume that urban spatial contexts facilitate refugee entrepreneurship, compared to semi-urban and rural environments with lower population density, and hypothesize:

H3: *A higher population density is positively associated with refugee entrepreneurship.*

## 2.4 The interaction of intercultural embeddedness in distinct spaces

Space “may not have a causal power independent of other social agents and processes” (Zhou 1998, p. 532 in Wang 2013, p. 101), but it interacts for instance through the perception of business opportunities, as well as resources of capital, labor and knowledge (Wang 2013). On one hand, dimensions of ethnic diversity determine the access to self-employment and the input and output resources of refugee entrepreneurship, i. e. the motives of immigration or human capital acquired through pre-immigration work experiences or education (Dabić et al. 2020; Kushnirovich et al. 2018). On the other, space accounts for population density and local resource and market accessibility. Ethnicity functions as a positive resource endowment up to a certain level. Beyond that it has rather been conceptualized rather as a decelerator than as an accelerator when working against meritocratic logics, e. g. when purchasing goods or hiring staff. As approaches of ethnic solidarity in spatial concentration dominate past research endeavors, we question the over-embeddedness in co-ethnic communities. We want to know whether the self-employment propensity of refugees, immigrants and native entrepreneurs is affected differently by cultural diversity, given the spatial embeddedness of capital endowments.

Intercultural knowledge spillovers have been shown to act as a positive determinant of entrepreneurship in general (Acs et al. 2003; Qian et al. 2013; Hopp & Stephan 2012). We argue that spatial embeddedness acts as a context filter for intercultural resource spillover. This means that spatial context determines the flux of intercultural knowledge and resources among refugee entrepreneurs. Knowledge and resource spillover resulting from cultural diversity and ethnic heterogeneity in urban contexts are positively affected by closeness to stakeholders. Consequently, not only the cultural diversity of social relationships in which refugee entrepreneurs are embedded determines entrepreneurial propensity (Spigel 2013), but also the spatial context in which these intercultural relationships occur (Arum & Müller 2004; Al-Dajani et al. 2015; Alrawadieh et al. 2019; Bizri 2017; Etemad 2018). Our theoretical assumptions stress the interaction of individual characteristics and context-related opportunities in entrepreneurial endeavors that stem from intercultural embeddedness in ethnic heterogeneity located in urban, semi-urban and rural environments. We assume that the



**Figure 1:** Hypothetical model of inter-cultural and spatial embeddedness of refugee entrepreneurship.

relationship of cultural diversity and refugee entrepreneurship changes across spaces. When exploiting business opportunities that result from ethnic diversity, intercultural embeddedness in a higher population density is beneficial. We, thus, hypothesize:

*H4: Spatial population density positively moderates the relationship of ethnic heterogeneity and refugee entrepreneurial propensity.*

## 3 Data sample and empirical strategy

### 3.1 Research approach

Ethnically diverse relationships provide opportunities for flows of knowledge and resources, representing a fertile ground for opportunities and innovations, as well as enlarged and open markets. Past research stressed the effects of urban embeddedness where immigrant entrepreneurs profited from immediate physical connections to customers, suppliers and other stakeholders (Schunck & Windzio 2009). We move beyond the mixed embeddedness framework (Kloosterman & Rath 2010; Kloosterman et al. 1999), accounting for the intercultural spatial context dependency of refugee entrepreneurs. Since refugees are not free in their choice of location in the asylum process and when receiving financial subsidies and assume a peripheral social position, we are interested in assessing whether the location in a specific spatial context affects their entrepreneurial propensity. Intercultural embeddedness in distinctly populated urban, semi-urban and rural environments addresses the interplay of structure and

agency, when drawing on intercultural resources for creating and exploiting economic opportunities. The following empirical analyses reflect established explanans of individual characteristics of human capital in their multiple intercultural and spatial embeddedness for refugee entrepreneurial propensity, accounting hereby for the ontological reality of super-diversity.

### 3.2 Unit of observation

For comparing the effects of ethnic diversity on refugee entrepreneurship in urban, semi-urban and rural spatial environments, we draw our analyses from the Central Register of Foreigners (AZR) and the German Microcensus, an annual representative household survey, sampling 1% of the German population. This data set is comprised of a variety of relevant social and economic indicators for observing the explanatory variables of the entrepreneurial propensity among refugees, other immigrants, and natives in Germany. The variables contain socio-demographic information on the sample population, including the motives for migration which enables us to identify the group of refugees among the immigrant working population (Wirth & Müller 2006; Günther & Marder-Puch 2019). The Microcensus provides spatial context variables, that delineate three main settlement structural environments as urban, suburban and rural areas. We measure cultural diversity by applying the Herfindahl-Hirschman-Index of ethnic concentration through merging data from the aforementioned Central Register of Foreigners. Our analyses were conducted with the 2017 wave of the Research Data Center (RDC) at the Federal Statistical Office. To detect the spatial context embeddedness of self-employment vis-à-vis the alternative options of wage employment, our

**Table 1:** Descriptive Statistics: Working population engaged in entrepreneurial activities or wage employment. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations.

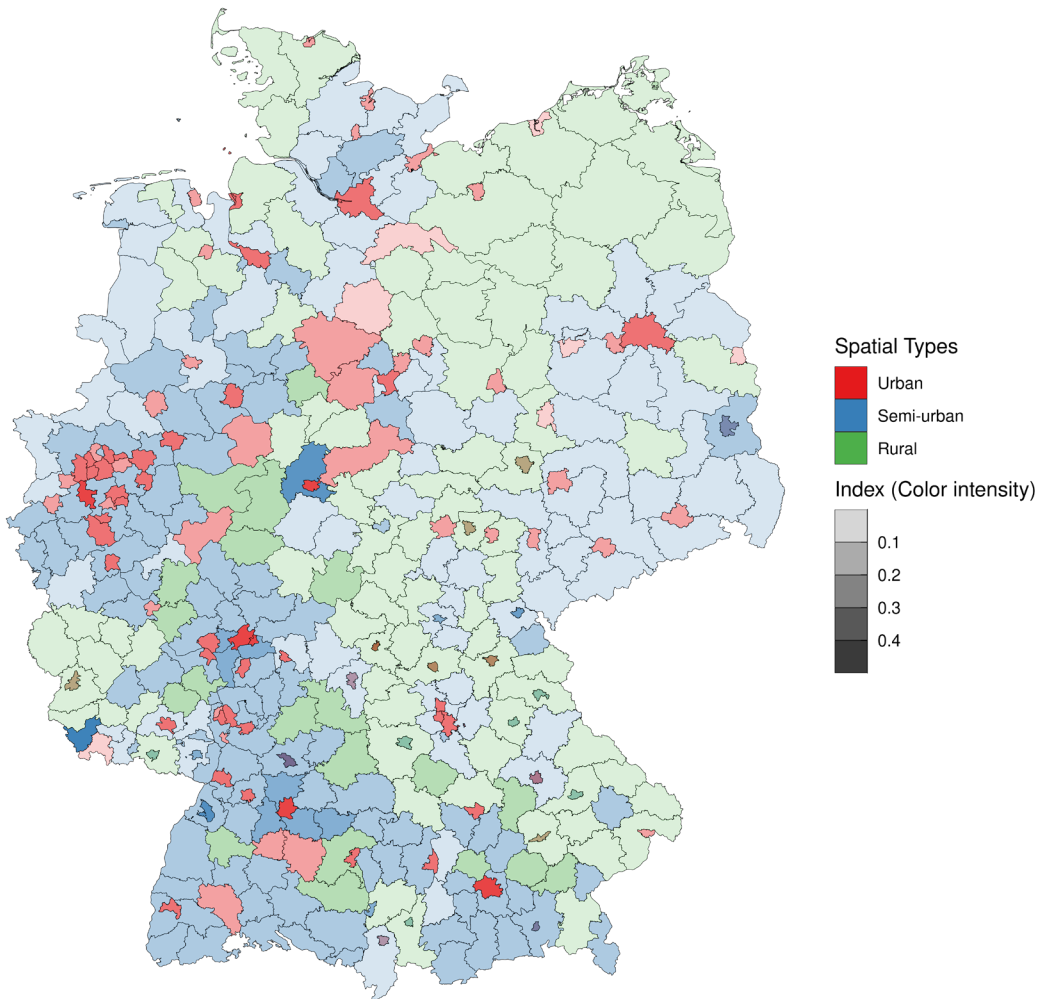
		Self-employed		Dependent employed	
<b>Immigration motives</b>	Asylum	536	1.53 %	4,402	1.38 %
	Other immigrants	4,195	11.95 %	44,912	14.13 %
	Natives	30,370	86.52 %	268,637	84.49 %
<b>Space</b>	Urban	11,366	32.38 %	100,115	31.49 %
	Semi-urban	14,827	42.24 %	137,952	43.39 %
	Rural	8,908	25.38 %	79,884	25.12 %
<b>Qualifications (ISCED)</b>	Low	2,089	5.96 %	37,534	11.82 %
	Middle	16,902	48.21 %	194,172	61.15 %
	High	16,066	45.83 %	85,849	27.03 %
<b>Industry Sector</b>	Manufacturing, Agriculture, Mininig	4,657	12.45 %	76,026	22.97 %
	Transport	889	2.38 %	16,871	5.10 %
	Construction	4,208	11.25 %	20,537	6.21 %
	Trade and Retail	4,722	12.63 %	45,812	13.84 %
	Hospitality	1,648	4.41 %	11,014	3.33 %
	Knowledge int. services	13,097	35.02 %	60,884	18.40 %
	Not knowledge int. services	8,179	21.87 %	99,820	30.16 %
<b>Gender</b>	Female	11,602	34.46 %	158,382	48.62 %
	Male	22,065	65.54 %	167,358	51.38 %
<b>Age</b>	18–35	3,806	12.24 %	99,640	32.05 %
	36–45	6,625	21.31 %	63,595	20.46 %
	46–55	12,163	39.12 %	91,333	29.38 %
	56–65	8,500	27.34 %	56,322	18.12 %
<b>Immigrants' arrival in Germany</b>	before 1979	977	18.84 %	5,445	10.64 %
	1980 to 1989	958	18.47 %	8,350	16.32 %
	1990 to 1995	1,045	20.15 %	11,990	23.43 %
	1996 to 2000	652	12.57 %	7,028	13.73 %
	2001 to 2005	544	10.49 %	5,305	10.37 %
	2006 to 2010	414	7.98 %	3,324	6.50 %
	2011 to 2014	411	7.92 %	5,734	11.20 %
	2015 to 2017	186	3.59 %	3,999	7.81 %

sample population consists of the active working population in Germany between 18 and 65 years. Our analytical focus draws on people with experience of forced immigration. Therefore, the subsample population of refugees and immigrants comprises persons that entered Germany during their adult life from the age of 18 onwards, reflecting that these persons form part of the active population right after immigration. This sampling strategy implies further that they were not mainly socialized in the German educational system.

The population of refugees results from the filter question about the motives to immigrate to Germany. Drawing from the answer options: *work/employment (w/o job before immigration)*, *studies/advanced training*, *family reunification and starting a family (marriage)*, *EU-free movement*

*of persons*, and *flight/persecution/displacement/asylum*, those who reported the latter were selected into our subpopulation of refugees. Since forced immigration is a multicausal phenomenon, and legal immigration status can change, we opted to work with the individual and self-reported motive for immigration. There might be underlying biases of social desirability and observational errors and it might not reflect the most current residence status. Immigrants that came for the reason of study might be working right now, and foreigners whose migration was motivated by the search for humanitarian protection and asylum might in the meantime have become German citizens or hold at least an indefinite residence permission in Germany. However, this category refers to the context of immigration and initial socio-institutional embeddedness.





**Figure 2:** Graphical depiction of the three spatial types: Urban, semi-urban, and rural administrative districts (in colors) in Germany and their ethnic diversity (color intensity). Source: Central Register of Foreigner and Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations.

### 3.3 Dependent variable

A logistic regression of entrepreneurial propensity of immigrants provides clarity on the correlations of the characteristic of “refugeeness” (REF), representing the relevance of immigration status for subsequent uptake of entrepreneurial endeavors, as opposed to engaging in wage employment.

$$p_{ENT} = \alpha + \beta_1 \text{ethnic diversity} + \beta_2 \text{REF} + \beta_3 \text{CV} + \beta_4 \text{industry} + \beta_5 \text{residence until current employment uptake} + SE$$

Those results are followed by hierarchical models of logistic regressions that estimate the entrepreneurial propensity with a binary dependent variable (1=self-employed, 0=wage employed) for the population groups of refugees versus immigrants with other motives for immigration

versus natives. Separate models account for intercultural spatial context embeddedness, which will be explained in more detail in the following subchapters.

$$p_{ENT} = \alpha + \beta_1 \text{CV} + \beta_2 \text{industry} + \beta_3 \text{ethnic diversity} + \beta_4 \text{space} + (\beta_3 \text{ethnic diversity} * \beta_4 \text{space}) + SE$$

### 3.4 Explanatory variables

Independent variables distinguish individual human capital and firm-level industry affiliation. Ethnic heterogeneity as well as space represent the context embeddedness that affect entrepreneurial propensity of refugees compared to immigrants and native-born working populations.

### 3.4.1 Cultural diversity

The measures of cultural diversity in spatial contexts stem from AZR according to the specific nationalities of citizens in the municipalities in Germany in 2017 and we matched them with the variable ef604 that differentiates urban, semi-urban and rural geographic spaces. The measure for cultural diversity is derived from the inversed Herfindahl-Hirschman-Index adapted from the application of the KSTE (Audretsch et al. 2010; Harrison & Klein 2007), which measures diversity between 0 (=ethnic concentration/no heterogeneity) and 1 (=ethnically/culturally fully diverse) depending on the different nationalities located in the district with  $x_i$  as nationality:

The ethnic heterogeneity in different contexts of urban, semi-urban and rural spaces in Germany is displayed in Figure 2. The different colors represent the spatial contexts of *urban* (red), *semi-urban* (blue) and *rural* (green) municipalities. The color intensity denotes the cultural diversity with lighter colors as more ethnically homogenous and darker colors representing culturally more diverse municipalities. Cultural diversity can be especially seen in metropolises like Berlin, Hamburg, Munich or Stuttgart, or federal states with international borders. The eastern part of Germany (North as well as South) is, apart from the metropolises of Berlin and Munich, dominated by semi-urban and rural spaces with lower cultural diversity. Urban areas concentrate in and around the previously mentioned metropolises and the former industrial region of Rhine-Ruhr in northwestern Germany as well as Rhine-Main.

$$HHI : \left( \sum_{i=1}^N a_i^2 \right) \text{ with } a_i = \frac{1}{\sum_{j=1}^N x_j}$$

### 3.4.2 Spatial context embeddedness

The spatial context is drawn from the EUROSTAT-variable ef604, categorizing the total of 401 of the smallest administrative districts into urban, semi-urban and rural spaces. The spatial context approximates the population density, mainly translating in distances to suppliers, clients and other stakeholders as well as the density of alternative wage employment opportunities, which drive entrepreneurial propensity.

### 3.4.3 Human capital

Our model includes two types of human capital that are relevant and conducive to successfully exploiting opportunities in distinct spatial contexts. The first one consists of *educational qualifications*, representing the general stock of cognitive human capital that enable sensing, seizing and exploiting opportunities. It is measured for cross-national comparison with the International Standard Classification of Education (ISCED) in the values *low* (=no education at all or primary education), *middle* (secondary education, technicians and craftsmanship) and *high* (at least university bachelor's degree or masters in craft). The second type of human capital: *country of residence specific system-knowledge* is also relevant for refugees to run a business sustainably. It is measured by refugees' and immigrants' duration of residence in Germany and the diverse business and labor market experiences gained during the period from immigration to the uptake of the current employment in years. During this period, business relevant points of contact with institutions, legislation, potential customers etc. can be established and drive entrepreneurial propensity.

### 3.4.4 Further control variables

Further socio-demographic characteristics are included for *gender*, *age*, (*age*<sup>2</sup>), *marital status*, *partner and children in the household*, accounting for personal familial embeddedness, but also *industry affiliation* of the employment. The differentiation between *marital status* and *partner living in the same household* aims at reflecting possible multiple disadvantages of refugees that are awaiting their family reunification. Age is measured as a continuous variable ranging from 18 to 65 years. Gender is a dummy variable set to 1 if the person is female.

In the following, the descriptive and multivariate models of entrepreneurial propensity of different population groups will be presented. We start with a bi-variate comparison of entrepreneurial rates of refugees, immigrants and indigenous populations across different spaces. Then, individual determinants of refugees and immigrants, are regressed on entrepreneurial propensity for measuring the probability of becoming and staying entrepreneurially active. After that, we compare determinants of the entrepreneurial propensity of refugees, immigrants, and native-born in light of their intercultural and spatial context embeddedness, before presenting the interaction effects of space and cultural diversity on entre-

preneurial propensity of refugees, immigrants and native-born Germans.

## 4 Results

### 4.1 Entrepreneurial rates

When comparing forced migrants with non-forced migrants and with native-born Germans in Table 2 entrepreneurial rates of refugees are in bi-variate data presentation higher than the average. This holds true over all spatial contexts. In comparison, entrepreneurial rates of the native working population remain constant slightly over 9% across all spatial contexts. Immigrants show the lowest entrepreneurship rates over all spaces with even lower entrepreneurial rates outside urban districts. In rural spaces, we detect the lowest share of immigrant entrepreneurs. Those descriptive results suggest that the working refugee population comprises the most dynamic entrepreneurial group and that the entrepreneurial rates of discrete population groups of refugees, immigrants and native-born, differ in their embeddedness in spatial environment.

**Table 2:** Entrepreneurial rates of different active working population groups in distinct spatial settings. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations.

Space		Urban	Semi-urban	Rural
Population group	Refugees	11.2 %	8.8 %	11.3 %
	Immigrants	9.4 %	7.6 %	7.3 %
	Natives	9.5 %	9.4 %	9.3 %

A location in urban and rural spaces results in higher entrepreneurial rates for refugee entrepreneurs and refugee entrepreneurship is not underrepresented among the working population in less densely populated rural areas. The u-shaped relationship of entrepreneurial rates of refugees in light of decreasing overall population density does not follow the patterns of other groups of natives or other immigrants. This indicates that distinct mechanisms of spatial context embeddedness differently affect the entrepreneurial propensity of refugees compared to other working populations of immigrants and native-born. Those mechanisms will be further analyzed in the following multivariate analyses on selected individual and context-related determinants of refugee entrepreneurial propensity in intercultural spatial embeddedness.

### 4.2 Determinants of entrepreneurial propensity of immigrants

The logistic regression of immigrant entrepreneurial propensity (Table 3) shows a positive significant relationship with the immigration motive “asylum”. That confirms the bi-variate results and Hypothesis 1, but the correlation loses strength and significance when further variables of individual characteristics and industry affiliation, respectively, are added in the following models. High qualifications of immigrants display the third most important relationship with the propensity for becoming and staying entrepreneurially active compared to the reference category of low qualifications<sup>6</sup>. Middle qualifications<sup>7</sup> of immigrants have a slightly positive relationship with their entrepreneurial propensity that increases when adding control variables of individual characteristics, industry affiliation and country of residence specific human capital<sup>8</sup>. This variable approximates not only the duration in the country of origin but represents varied experience gained on the German (labor) market or system knowledge, as individual absorptive capacity for resource flows in intercultural embeddedness. This means with a higher familiarity with German formal and informal institutions, refugees can better benefit from resource and knowledge flows in ethnic heterogeneity that translate into economic opportunities. Immigrants’ entrepreneurial propensity is positively associated with the duration of residence in Germany (until current employment uptake) from five years onwards in reference to the uptake of the current employment in the first four years after arrival. However, the strongly significant relationship fades away for longer durations in Germany before taking up the current employment. The second strongest correlation with immigrant entrepreneurial propensity is associated with the context factor of intercultural embeddedness, represented by the inversed *Herfindahl-Hirschman-Index* of ethnic heterogeneity. Thus, a location in municipalities of higher cultural diversity relates strongly and significantly with higher immigrant entrepreneurial propensity<sup>9</sup>. The strongest positive association with entrepreneurial propensity of immigrants, however, is suggested by the industry sector affiliation. Construction, hospitality, and knowledge intensive

<sup>6</sup> The multinomial logistic regression models suggest that it doubles the chance for immigrants of being self-employed.

<sup>7</sup> Categorized by upper secondary education.

<sup>8</sup> Acquired during the residence time before current employment.

<sup>9</sup> That relationship loses strength when adding individual characteristics into the models and becomes insignificant when controlling for the duration of residence before current employment.

**Table 3:** Determinants of propensity for immigrant self-employment among the active working population. Covariates excluded from the table: Marital status, Age<sup>2</sup>. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States. Microcensus 2017, own calculations. Standard errors appear in parentheses. \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 statistical significance level.

<b>DV: Self-employment propensity</b>						
	1	2	3	4	5	6
Constant	-1.333	-1.368	-1.916	-5.811	-8.475	-7.859
HHI of ethnic heterogeneity	1.260 *** (0.252)	1.246 *** (0.252)	0.911 *** (0.254)	1.063 *** (0.258)	0.437 * (0.259)	0.398 (0.260)
Refugees (Other motive to immigrate)		0.225 *** (0.062)	0.302 *** (0.063)	0.183 *** (0.064)	0.102 (0.065)	0.069 (0.065)
Isced qual middle (Low)			0.096 * (0.053)	0.118 ** (0.053)	0.168 *** (0.055)	0.175 *** (0.055)
Isced qual high			0.671 *** (0.053)	0.780 *** (0.054)	0.765 *** (0.058)	0.774 *** (0.058)
Female (Male)				-0.377 *** (0.041)	-0.581 *** (0.045)	-0.618 *** (0.045)
Age				0.168 *** (0.019)	0.180 *** (0.019)	0.145 *** (0.019)
HH w/child(ren)				0.260 *** (0.047)	0.253 *** (0.048)	0.212 *** (0.048)
W/o partner in HH				-0.145 ** (0.068)	-0.104 (0.069)	-0.106 (0.069)
Transport (Manuf., Agricult., Min.)					1.195 *** (0.127)	1.166 *** (0.127)
Construction					2.442 *** (0.103)	2.453 *** (0.103)
Trade and retail					1.972 *** (0.102)	1.944 *** (0.102)
Hospitality					2.420 *** (0.106)	2.409 *** (0.106)
Knowledge int. services					2.280 *** (0.100)	2.262 *** (0.100)
Not knowledge int. services					1.928 *** (0.097)	1.898 *** (0.097)
Duration in Ger. until uptake of current employment < 5 years						0.475 ***
Duration in Ger. until uptake of current employment 6–10 years						0.475 *** (0.058)
Duration in Ger. until uptake of current employment 11–20 years						0.457 *** (0.054)
Duration in Ger. until uptake of current employment > 20 years						0.249 *** (0.071)
R <sup>2</sup>	0.002	0.003	0.017	0.040	0.073	0.079
Observations	33,196					

services account for the strongest relationships with immigrant entrepreneurial propensity.

In summary, immigrating with the intention to apply for asylum relates positively to immigrant entrepreneurial propensity and cultural diversity demonstrates a strong positive relationship with entrepreneurial propensity of immigrants. However, both variables lose their explanatory relevance when including other control variables on the individual level and firm level. Therefore, as a next step, we include individual characteristics such as qual-

ification or industry affiliation first, before including variables of spatial embeddedness and their interaction with ethnic diversity for analyzing determinants of entrepreneurial propensity of refugees, immigrants and native-born.

### 4.3 Contrasted determinants of entrepreneurial propensity of refugees, immigrants and native-born

Looking on the role of intercultural embeddedness in model 1 of Table 4, we see a significant positive relationship of ethnic heterogeneity with refugee entrepreneurial propensity, whereas for other immigrants and the native working population there are no significant relationships between cultural diversity and entrepreneurial propensity. This significant positive relationship increases for refugees substantially in strength when including variables of spatial context in model 2. Therefore, H2 can be confirmed. It becomes clear that a location in urban municipalities correlates positively with entrepreneurial propensity of refugees and other immigrants, in reference to a location in semi-urban environments. Besides, there is a negative relationship with refugee entrepreneurial propensity in rural locations, in reference to semi-urban spaces. However, the results are not significant. Thus, H3 cannot be confirmed. On the contrary, there is a negative significant relation between a location in urban spaces and entrepreneurial propensity of the indigenous working population.

A location in rural spaces in reference to semi-urban spaces is negatively related with entrepreneurial propensity of refugees and other immigrants. This relationship, however, is only significantly positive for the native population in reference to a location in semi-urban space. Whereas middle qualifications of refugees are not significantly correlated with entrepreneurial propensity, the correlations of high qualifications with refugees' probability of being self-employed are highly significant. Refugees' high qualifications, though being significantly positively associated to their entrepreneurial propensity, seem to be less relevant in comparison to general cognitive human capital resources of other immigrants and native Germans, who display a slightly stronger positive correlation between qualification and entrepreneurship propensity. Also, familial embeddedness with a partner and children displays the strongest negative correlation with refugee entrepreneurship propensity.

### 4.4 Intercultural embeddedness of refugee entrepreneurship in distinct spaces

The interaction of a location in rurality and increasing interculturality relates significantly negatively with refugee entrepreneurship propensity. This negative association with refugee entrepreneurial propensity holds also

true for a location in urban space, again, in reference to semi-urban space. Immigrant entrepreneurship propensity is, like indigenous entrepreneurship propensity, positively associated with increasing ethnic heterogeneity in urban spaces. Those results, however, are not significant. When including variables of space into the correlation equation, we see that ethnic heterogeneity displays the strongest correlation with refugee entrepreneurship propensity. Thus, an intercultural environment provides, especially in semi-urban environments, a fertile ground for the entrepreneurial endeavors of refugees.

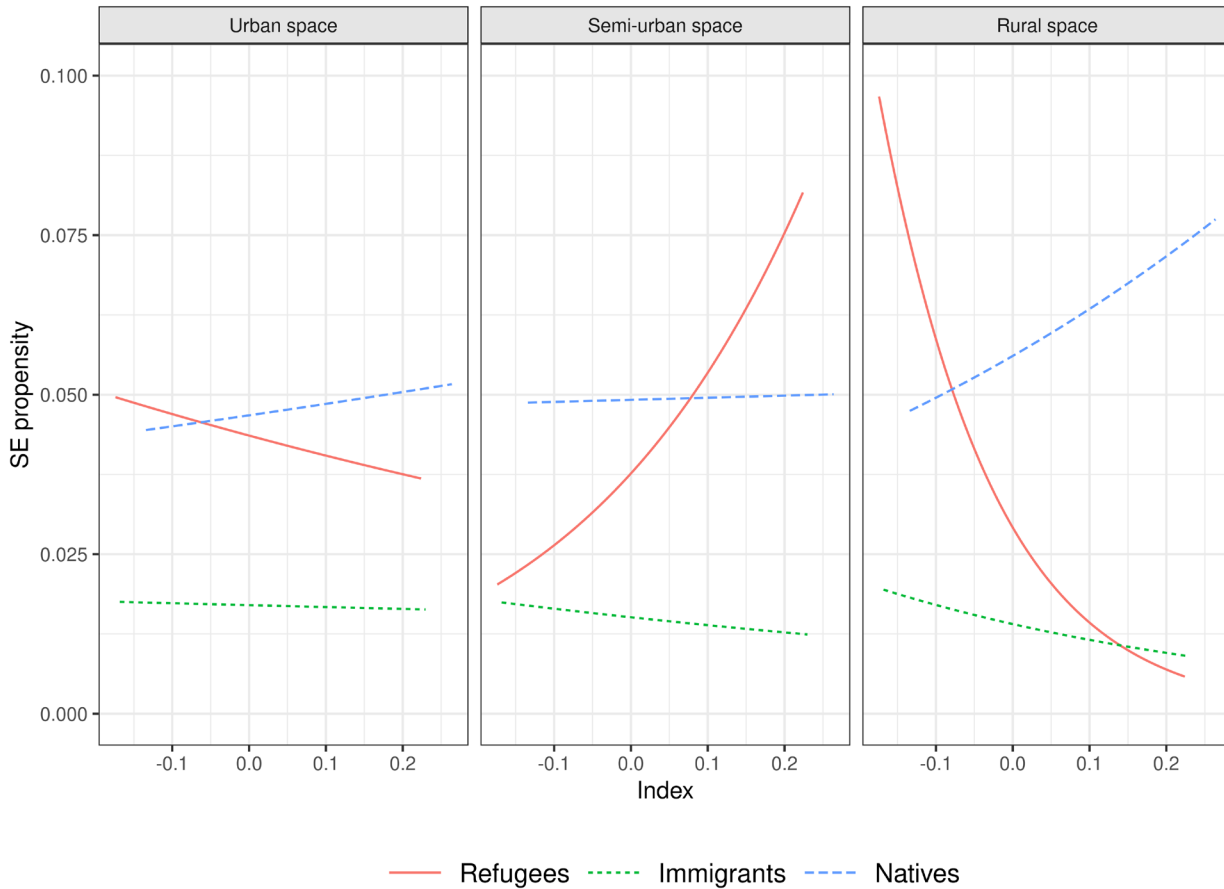
When comparing the interaction of intercultural diversity in distinct spaces and their association with entrepreneurship propensity of refugees, immigrants and the indigenous population, we obtain a clearer picture in Figure 3. The entrepreneurial propensity of refugees, other immigrant groups and native Germans across the three different geographical contexts of urban spaces, semi-urban spaces and rural spaces, displays distinct mechanisms of socio-spatial embeddedness in ethnic heterogeneity. The interaction effects vary not only in significance but also in strength and sign in their correlation with entrepreneurship propensity (Figure 3, Table 5). Whereas indigenous entrepreneurial propensity is at least slightly positively related with intercultural embeddedness across all spaces, immigrants display negative associations of the interaction of ethnic heterogeneity in cross-sectional spatial analysis. The look on the graphs confirms the previous results, that the interaction effect of ethnic heterogeneity and space provides the strongest correlation for refugees, especially in negative association in rural space. In urban spaces the interaction with cultural diversity is also negatively related to refugee entrepreneurial propensity, but in semi-urban spaces, the environment with the lowest entrepreneurial rates (section 4.1) the association is positive. This is especially remarkable since the correlation is significant for refugees in semi-urban and rural spaces. The interaction of interculturality and space correlates only positively for refugee entrepreneurship in semi-urban space. Thus, H4 has to be refuted. Refugees, thus, act distinctly on opportunities resulting from intercultural diversity in different spaces and in comparison to other immigrants and native-born Germans.

## 5 Discussion

It is acknowledged that entrepreneurial processes cannot solely be treated as an economic phenomenon, since they do not occur in social isolation. Debates on refugees'

**Table 4:** Determinants of propensity for self-employment of working populations of refugees, immigrants, and native-born, including interaction effects of ethnic heterogeneity and space. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations. Standard errors appear in parentheses. \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 statistical significance levels.

DV: Entrepreneurial propensity (1)												
	Refugees		Immigrants		Natives							
	(1)	(2)	(3)	(4)	(5)	(6)						
Constant	-3.219 (0.280)	*** -3.241 (0.294)	*** -4.118 (0.097)	*** -4.177 (0.101)	*** -2.939 (0.042)	*** -2.962 (0.040)						
Isced qual middle (low)	0.153 (0.124)	0.166 (0.124)	0.194 (0.049)	0.194 (0.049)	0.180 (0.035)	0.182 (0.035)						
Isced qual high	0.652 (0.147)	*** 0.654 (0.148)	*** 0.713 (0.053)	*** 0.708 (0.053)	*** 0.768 (0.036)	*** 0.775 (0.036)						
Female (Male)	-0.940 (0.128)	*** -0.947 (0.129)	*** -0.676 (0.040)	*** -0.673 (0.04)	*** -0.685 (0.015)	*** -0.686 (0.015)						
Age	0.166 (0.046)	*** 0.166 (0.046)	*** 0.185 (0.017)	*** 0.186 (0.017)	*** 0.121 (0.006)	*** 0.121 (0.006)						
Spouse	-0.195 (0.191)	-0.194 (0.192)	-0.036 (0.058)	-0.034 (0.058)	-0.039 (0.020)	* -0.046 (0.021)						
HH w/o child(ren)	-0.286 (0.134)	* -0.316 (0.134)	* -0.205 (0.043)	*** -0.206 (0.043)	*** -0.158 (0.016)	*** -0.152 (0.016)						
W/o partner in HH	-0.432 (0.208)	* -0.426 (0.209)	* 0.119 (0.060)	* 0.114 (0.060)	* -0.022 (0.022)	-0.021 (0.022)						
Transport (Manuf., Agri., Min.)	0.851 (0.281)	** 0.832 (0.282)	** 1.116 (0.109)	*** 1.107 (0.109)	*** -0.202 (0.047)	*** -0.191 (0.047)						
Construction	1.761 (0.24)	*** 1.734 (0.241)	*** 2.321 (0.086)	*** 2.314 (0.086)	*** 1.170 (0.027)	*** 1.174 (0.027)						
Trade and retail	1.962 (0.222)	*** 1.956 (0.223)	*** 1.847 (0.084)	*** 1.838 (0.085)	*** 0.705 (0.026)	*** 0.712 (0.026)						
Hospitality	2.184 (0.230)	*** 2.195 (0.231)	*** 2.565 (0.090)	*** 2.55 (0.090)	*** 1.494 (0.042)	*** 1.502 (0.042)						
Knowledge int. services	1.880 (0.238)	*** 1.873 (0.239)	*** 2.290 (0.082)	*** 2.279 (0.082)	*** 1.279 (0.022)	*** 1.290 (0.022)						
Not knowledge int. services	1.416 (0.224)	*** 1.41 (0.225)	*** 1.957 (0.080)	*** 1.945 (0.080)	*** 0.320 (0.023)	*** 0.330 (0.023)						
HHI of ethnic heterogeneity (EH)	0.455 (0.662)	* 3.668 (1.681)	* 0.008 (0.235)	-0.865 (0.555)	-0.016 (0.094)	0.070 (0.191)						
Rural space		-0.264 (0.324)		-0.074 (0.106)		0.138 (0.022)					***	
Urban Space		0.153 (0.135)		0.120 (0.050)	*	-0.053 (0.021)					*	
(EH)*rural		-10.97 (3.940)	**	-1.097 (1.400)		1.242 (0.364)					***	
(EH)*urban		-4.447 (1.959)	*	0.686 (0.678)		0.325 (0.260)						
R <sup>2</sup>	0.134	0.141	0.125	0.126	0.120	0.121						
Observations	4,151	4,151	42,831	42,831	258,848	258,848						



**Figure 3:** Interaction effects of embeddedness in interethnic heterogeneity in distinct spaces on entrepreneurial propensity for refugees, immigrants and indigenous population. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations.

**Table 5:** Conditional effects of ethnic heterogeneity on entrepreneurial propensity for distinct population groups in different spatial settings. Source: Research Data Center of the Federal Statistical Office and Statistical Offices of the Federal States, Microcensus 2017, own calculations. \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 statistical significance levels.

Interaction of ethnic heterogeneity and space				
		Effect	S.E.	p
Refugees	Urban	-0.780	1.011	
	Semi-urban	3.668	1.681	**
	Rural	-7.302	3.561	**
Immigrants	Urban	-0.179	0.390	
	Semi-urban	-0.865	0.555	
	Rural	-1.962	1.286	
Natives	Urban	0.395	0.177	**
	Semi-urban	0.070	0.191	
	Rural	1.312	0.311	***

disembeddedness in both the COO and COR-communities motivates, besides cautioned liabilities of immigrant entrepreneurs’ co-ethnic over-embeddedness (Lassalle et al. 2020; Stoyanov 2018), to enlarge the perspective of refugee entrepreneurship on intercultural embeddedness in distinct spatial contexts.

Refugees show on average higher self-employment rates than immigrants and native-born. Besides their initial institutional and social disembeddedness, refugees have been shown to catch-up to other immigrant groups in regards to disadvantages in the access to the host country language and labor (Liebau & Schacht 2016). That perspective enables embedded agentic entrepreneurial activities. Consequently, our results encourage to reflect critically on dominant deficiency and necessity orientation of refugee entrepreneurs, in line with recent exploratory evidence on refugee entrepreneurial *resilience* (Shepherd et al. 2020), towards a focus of embedded agency in distinct socio-spatial environments. The corresponding assumption of the creation and perception of opportunities in distinct inter-

cultural spaces recognizes not only the structural barriers that refugees face when doing business but draws on resource access and how the entrepreneurs embrace and capitalize on those forms of resources. Besides, we have seen that spaces with different population densities determine the relevance of intercultural ties differently in refugee entrepreneurship, immigrant entrepreneurship and indigenous entrepreneurship. This underscores the relevance of spatial context in research and praxis on refugee entrepreneurial embeddedness.

The negative and significant relation of the interaction effect of cultural diversity in urban and rural spaces with refugee entrepreneurship propensity relate to previous results in the urban environment (Schunck & Windzio 2009) and in rural spaces of Munkejord (2017b, 2017a). Knowledge and resource flows in an open, intercultural environment can drive refugee entrepreneurship where entrepreneurial opportunities seem to be less directly available and accessible to refugee entrepreneurs. However, embeddedness in urban and rural settings seems to give relevance to other ties e.g. of co-ethnic relations or local social embeddedness. In summary, intercultural knowledge spillover correlates positively with refugee entrepreneurial propensity in semi-urban spaces, whereas native born entrepreneurship propensity seems to benefit in all spaces slightly from intercultural resources. Immigrant intercultural embeddedness indicates a slightly negative association with self-employment propensity.

## 5.1 Theoretical contribution

The mixed embeddedness framework focuses on co-ethnic social capital and market opportunities resulting from the embeddedness in the institutional environment. We put mixed embeddedness into spatial praxis and account for ontological reality of super-diversity. In doing so, we advance the mixed embeddedness approach by concretizing “context” into embeddedness in cultural diversity in urban, semi-urban and rural environments and assess the relevance of intercultural flows of knowledge and other forms of capital. Flows of knowledge in cultural diversity have been shown to form a fertile ground for technology-oriented businesses and start-ups (Audretsch et al. 2010; Li et al. 2018). Due to the increasing relevance of knowledge intensive industrial sectors in immigrant entrepreneurship, we proposed the application of KSTE to study intercultural embeddedness of refugee self-employment, too.

The presented results indicate the distinctiveness of refugee’s access to entrepreneurial resources and opportu-

nities resulting from a location in spatial environments in interaction with intercultural embeddedness, compared to other allochthone and autochthone working populations. This reiterates the relevance of spatial dimensions in refugee entrepreneurial ontology and epistemology. Besides, distinct layers of social relations affect how knowledge and resources are accessed and economically exploited. In accordance with evidence on multiple embeddedness of immigrant and refugee entrepreneurs (Harima et al. 2021; Lassalle et al. 2020), we see that intercultural embeddedness relates positively to refugee entrepreneurship. When focusing on discrete aspects that distinguish spaces in terms of population density and intercultural knowledge flows as well as resource access in their correlation with refugee entrepreneurial propensity, we turn our attention to distinct mechanisms of embeddedness between autochthone, allochthone, and refugee entrepreneurs.

Super-diverse societies, resulting from increasing immigration (Vertovec 2019) and imperfectly transferable resources (Chiswick & Miller 2009) from their original geographic background to the current spaces of residence affect refugee entrepreneurs distinctly in their perception and exploitation of opportunities. We expected intercultural and urban spatial embeddedness to enable the access to resources and critical new knowledge to be transformed into entrepreneurial opportunities. However, we find that intercultural embeddedness interacts distinctly for refugee, immigrant and indigenous entrepreneurs according to different spaces and multiple layers of socio-economic and politico-institutional circumstances. In urban and rural spaces, where refugee entrepreneurs assume higher shares among the working population, than other allochthone or autochthone entrepreneurs, embeddedness in cultural diversity relates negatively to refugee entrepreneurial propensity. Indigenous entrepreneurship propensity, however, is positively associated with intercultural knowledge flows in urban and even more significantly in rural spaces, meaning that indigenous entrepreneurs can profit from intercultural knowledge and resource flows also in densely and sparsely populated environments. The negative relation of cultural diversity and refugee entrepreneurship propensity in rural areas suggests that intercultural knowledge flows are less relevant, but accessing capital bounded in locality are more so. Alternative explanations for the results in urban environments consist in favorable structures of an immediate market base in urban environments, in which native born have a higher absorptive capacity for intercultural knowledge and resource flows due to higher system knowledge than refugees or immigrants.



The dominant deterministic and abstract mixed embeddedness framework that stresses specifically co-ethnic embeddedness motivated the distinguished theorization of intercultural spillover in spatial embeddedness of refugee entrepreneurs. Past research has focused on co-ethnic embeddedness in ethnically densely populated urban environments. More recent literature stresses different mechanisms of embeddedness in rural areas, where the access to entrepreneurial resources and markets is characterized by decreased population density and higher relevance of other resource access. We assess how spatial and intercultural embeddedness in interaction relate to the perception and creation of opportunities that affects refugee entrepreneurial propensity. We have seen that intercultural spatial embeddedness is not the dominant driver of refugee entrepreneurial endeavors across all spaces. Embeddedness of refugees thus reflects the long-term process of becoming part of the different local network structures whose understanding is a precondition for drawing upon and using resources for creating entrepreneurial value.

## 5.2 Practical Implications

Exploring geographically bounded resources from intercultural embeddedness that influence entrepreneurship sheds light on regional entrepreneurship politics and underscores the linkage between space and other forms of capital endowments in shaping business endeavors (Qian et al. 2013). We detect three main factors associated with the intercultural spatial embeddedness of refugee entrepreneurs: (a) space and intercultural embeddedness cannot account solely for entrepreneurial endeavors but determine other forms of capital endowments for new resource combinations in opportunity creation and exploitation, (b) system knowledge is a vital success factor for leveraging intercultural spatial embeddedness of entrepreneurial activities in urban and rural spaces, (c) here especially sectoral characteristics should be taken into account when designing entrepreneurship policies in distinctly diverse spaces. Distinct population densities across spatial contexts reiterate the distinct social embeddedness of entrepreneurship of refugees, immigrants, and the native population. Thus, spatial heterogeneity and cultural diversity should be considered in the design of politics for refugee entrepreneurship and the long-term socio-economic inclusion of asylum seeker. In the asylum process, refugees are limited in agency regarding the location where they are assigned to exogenously (Harima et al. 2021), and strong geographical self-selection effects

are not assumed to occur. Depending on their location, it is advisable for refugees to be aware of their structural and relational embeddedness when undertaking entrepreneurial activities and not over-relying on the own ethnic community and also the international community. Thus, searching for a local co-founder may pay off when starting up. Incubators, in their consultation of refugee entrepreneurs should be aware that in urban and rural environments, embeddedness in intercultural ties do not seem to drive entrepreneurial endeavors.

## 6 Limitations and future research

Our analyses comprise some limitations which shall be discussed transparently, shedding light on future avenues of research. To start with, the interpretation of results is descriptive, and our aim is to explore statistical association as a basis for further causal analyses, since our correlational analyses face a survivorship bias of successful entrepreneurs. Furthermore, the dependence on individual secondary data has forced us to only consider the location of the household where the probands live in our analysis. However, regional economists acknowledged the local inertia of founders (Sorenson & Audia 2000) which means that the location of the household and location of the business tend to coincide.

While elaborating on the spatial and intercultural determinants of refugee entrepreneurship, we differentiate between the working population of refugees (1), other immigrants that entered Germany without applying for asylum (2) and native-born Germans (3). These population subgroups are by no means to be considered homogeneous. Besides, we excluded the not working active population. Thus, our results do not provide clues on the mechanisms of entrepreneurship as a pathway into the labor market and initial socio-economic inclusion (Shneikat & Alrawadieh 2019). For analyzing the emancipatory capacity of refugee entrepreneurship, further outcome measures such as financial income or revenues, duration of the business in the market, innovativeness as well as employment generation etc. should be considered in future research. A dedicated analysis of refugee women entrepreneurship promises fruitful ground for explaining the detected higher gender gap, which might be associated with intensified intersectionality and triple disadvantages for women in the context of forced immigration and self-employment.

When conceptualizing intercultural embeddedness according to KSTE, one must acknowledge the one-sided positive assumption of knowledge and resource access

that neglect possible transaction costs in intercultural networks. Besides, the high institutionalization of the German market in the crafts sector or knowledge intensive industries, but also regarding hygienic preconditions in hospitality requires country-specific knowledge that can be leveraged only partially in realm of intercultural knowledge flows. Thus, the explanatory relevance of industry affiliation and cognitive human capital endowments as relevant filters of knowledge and resource flow should be accounted for in future analyses of intercultural spatial embeddedness (Hunt 2011; Lange et al. 2020).

Also, future cross-country analyses of other receiving countries with distinct immigration histories, interethnic diversity, institutional settings and cross-spatial distribution, e. g. Sweden, the UK or Canada would increase external validity and generalizability of the presented findings. Future research on the presented topic of embedded refugee entrepreneurship in intercultural spatial settings shall discuss additional context variation such as (un) employment rate, or regional GDP, spillover from other regions, regional income, and income growth besides global macro trends like digitization, transnationality and sectoral dynamics in light of blurring national frontiers in the European Union.

## 7 Conclusion

We provide results on the relevance of intercultural knowledge and resource spillover for entrepreneurial endeavors for refugees departing from mixed embeddedness in spatial environments. In doing so, intercultural and spatial determinants of embedded entrepreneurship are disentangled of refugee and other immigrant and native entrepreneurial groups by building on concepts from KSTE. Refugee entrepreneurs assume due to their specific migration and asylum processes a distinct role in socio-spatial networks, translating in disembodiedness. However, embeddedness in ethnic heterogeneity or super-diversity as a new ontological reality is associated with enhanced entrepreneurial opportunities of refugees. Since refugee policies allocate asylum seeker to different spaces after immigration, it is of vital interest whether spatial distribution affects entrepreneurial propensity in intercultural networks. The regression results show that the mechanism of intercultural embeddedness acts distinctly in different spaces, demonstrating the relevance of including spatial determinants in refugee entrepreneurship research. In spite of the hypothesized positive association, the interaction of cultural diversity with dif-

ferent spaces reveals a negative relation of intercultural embeddedness in rural and urban spaces with refugee entrepreneurial propensity. This leads us to conclude that space is a relevant context variable that affects the distinct mechanisms of embeddedness of refugee entrepreneurial propensity into interculturality, co-ethnicity, and locality. To sum up, the entrepreneurial rate of refugees does not indicate that they are lost in space: Refugee status itself correlates positively with the entrepreneurial propensity of immigrants and refugee entrepreneurship propensity is positively associated with knowledge and resource flows in cultural diversity. In urban and rural areas, intercultural embeddedness does not seem to form fertile ground for refugee entrepreneurial endeavors. Here, strong ties and trust in local rural communities or urban (co-ethnic) communities may matter more than bridging intercultural ties. Lacking system knowledge compared to indigenous entrepreneurs might act as an intercultural knowledge and resource barrier. Fitting the needs of local environment generates contextual competitive advantages ranging from credibility and knowledge how business is conducted to pursuing and exploiting commercial opportunities (Stoyanov 2018). Therefore, when explaining refugee entrepreneurship we propose mixed embeddedness to be concretized and enlarged by accounting for intercultural spatial embeddedness.

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