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# Strangers in my home: the 2015 refugee event in Europe and founder social identities of nascent entrepreneurs

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## ABSTRACT

How does the grand challenge of refugees influence nascent entrepreneurs in host countries? To explore this question, we build on social identity theory and analyse how the 2015 European refugee event is related to the strength of different founder social identities (i.e. Darwinian, Communitarian, and Missionary founder social identities) of nascent entrepreneurs in the countries accommodating the refugees. Using a dataset of 6,096 nascent entrepreneurs from 24 European countries, we reveal a positive relationship between the refugee event and the strength of the Communitarian founder social identity. This relationship is even stronger when the previous percentage of foreign migrants in a country is lower and is mediated by the human health and social work industry. Interestingly, we do not find significant relationships between the refugee event and the strengths of the Darwinian or Missionary founder social identity, respectively. Hence, refugees as a grand challenge are likely to have divergent influences on different types of entrepreneurship in society.

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## KEYWORDS

Founder social identity; refugee event; grand challenge; entrepreneurship; social identity theory; multi-level modeling

## Introduction

Grand challenges and their societal implications have increasingly attracted the attention of management scholars (George et al. 2016). Scholars have started to identify several challenges, such as income inequality, climate change, and refugees,<sup>1</sup> that can be addressed by entrepreneurship (Banks et al. 2016; Wiklund, Wright, and Zahra 2019). However, while entrepreneurship might be part of the solution, it is also subject to the consequences of grand challenges. This, in turn, is an area largely unexplored by research (Wiklund, Wright, and Zahra 2019). Understanding the impact of such a challenge on the local entrepreneurial landscape is very important as it will influence how entrepreneurs engage with grand challenges, contribute to society (Markman et al. 2019), and ultimately affect regional development.

To address this relevant research gap, we focus on the refugee challenge, specifically, the 2015 refugee event in Europe caused by political instability in the Middle East. We focus on this refugee challenge because, compared to other grand challenges, refugee challenges tend to have a broader and more direct impact on entrepreneurship, for instance by disrupting the local labour market (Klaesson and Öner 2020), bringing new knowledge or practices such as clan-based business

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practices (de la Chaux, Haugh, and Greenwood 2018) to host countries (Chengguang et al. 2018), and prompting regulators to modify legislation related to starting a new business (de la Chaux and Haugh 2020). However, we do not yet know *how* grand challenges in general and refugee challenges in particular influence local entrepreneurs in a host country, i.e. in those countries that accommodated the refugees. This is mainly because the impact of the 2015 European refugee event can be divergent on a general level. For instance, political science research has shown that an increase in asylum applications in 2015 led to polarized attitudes in Europe, with some citizens in host countries becoming more nationalistic and others becoming more open towards immigration (van der Brug and Hartevelde 2021).

To examine the impact of refugee challenges, like the 2015 European refugee event, on entrepreneurship we choose the founder social identities of nascent entrepreneurs in the host countries as the outcome of interest. This is because the refugee challenge tends to cause a significant change in society, affecting people's ideologies, emotions, and behaviors towards human beings (Klein and Amis 2021). This, in turn, will affect how entrepreneurs engage with that challenge, as founder social identities determine various entrepreneurial behaviors such as opportunity recognition and development (Wry and York 2017), core strategic decisions (Fauchart and Gruber 2011), strategic responses to adversity (Powell and Baker 2014), effectual or causal behavior (Alsos et al. 2016), and start-up inertia and flexibility (Zuzul and Tripsas 2020). Importantly, while individuals' social identities are typically formed through a rather gradual process, they might also be sensitive to sudden, external societal-level events (Alvesson and Willmott 2002; 2017; Tracey and Phillips 2016; Ashforth, Schinoff, and Rogers 2016). In fact, such an event may interrupt people's (including entrepreneurs') familiar situation and thus affect their identity (Burke 1991). More specifically, to capture the variety in entrepreneurial motivations and endeavours, we use the typology of Darwinian (motivated mainly by self-interest), Communitarian (motivated by supporting personal others), and Missionary (motivated by advancing a social cause) *founder social identities* established by Fauchart and Gruber (2011), which are based on varying levels of social inclusiveness with which individual entrepreneurs associate themselves in the social space (Gruber and MacMillan 2017). Unfortunately, we lack critical knowledge on how a societal-level challenge such as the refugee challenge is related to the strength of founder social identities (Gruber and MacMillan 2017). In fact, while previous studies have focused on refugees' identity as entrepreneurs (e.g. Dabić et al. 2020; Shepherd, Philippe Saade, and Wincent 2020), scholars have yet to address whether and how the founder social identities of *local* entrepreneurs who have been exposed to a sudden inflow of refugees in their countries are affected. This lack of understanding is regrettable because it misses the 'other side of the story': how the refugee challenge influences the entrepreneurial context in the host country (Desai, Naudé, and Stel 2021). Along the same lines, understanding how the 2015 European refugee event relates to the strengths of different founder social identities is important because different types of entrepreneurs affect regional development differently. For instance, some entrepreneurs focus on personal growth while others focus on aggressive growth for the region (Morris et al. 2018). Hence, studying this relationship will enable us to predict how grand challenges influence regional entrepreneurial landscapes (Desai, Naudé, and Stel 2021).

Therefore, building on identity theory and the founder social identity literature (Fauchart and Gruber 2011; Stets and Burke 2000; Stets et al. 2005), and considering the state of extant literature and knowledge, we follow a 'pragmatic empirical theorizing approach' (Shepherd and Suddaby 2017). This implies that we explore how the 2015 refugee event in Europe relates to the strength of local nascent entrepreneurs' founder social identities (i.e. Darwinian, Communitarian, and Missionary) in the host countries<sup>2</sup> and then theorize explanations for these findings. Analysing the 2016 dataset from the GUESSS project,<sup>3</sup> which identifies 6,096 local, nascent entrepreneurs from 432 universities across 24 European countries, reveals that the change in refugee numbers (in terms of population-adjusted changes in asylum applications<sup>4</sup>) is not significantly related to founders' Darwinian and Missionary identities. However, we found a positive relationship between the change in refugee numbers and the strength of the Communitarian founder social identity. This relationship

is even stronger for countries that had not previously been subject to a large number of foreign migrants. Furthermore, we identified the human health and social work industry as a mediator in the positive relationship between refugee numbers and the strength of the Communitarian founder social identity.

Our paper contributes to the literature in numerous ways. First, we advance research on the impact of grand challenges on individuals and entrepreneurship (Eisenhardt, Graebner, and Sonenshein 2016; George et al. 2016; Markman et al. 2019) in different important ways. For instance, we address the lack of knowledge on how grand challenges affect entrepreneurs themselves (Wiklund, Wright, and Zahra 2019). Our study shows that the refugee event is more likely to enhance the relevance of the founders' own community as opposed to refugees in their self-definition. This insight complements prior research on how entrepreneurs address grand challenges and on how refugees become entrepreneurs. In addition, our study also offers a better view on the potential impact of the refugee challenge on the local entrepreneurial context in the host country (Desai, Naudé, and Stel 2021). This is because in the case of the 2015 refugee event, stronger Communitarian founder social identities could result in enhanced local community development. As a second core contribution, we inform the emerging literature on founders' social identities by providing novel insights into how the social identities of entrepreneurs are related to a societal event such as the refugee challenge (Gruber and MacMillan 2017; Leitch and Harrison 2016). Specifically, we reveal that the strengths of the different founder social identities are not related to the refugee event in a uniform manner, as extant literature might suggest (Powell and Baker 2017; Sluss and Ashforth 2008). Also, we develop a corresponding multi-level, dynamic framework connecting a macro-level event, the past social environment as a boundary condition, the meso-level environment (i.e. industry sectors), and individuals' founder social identities. Finally, our paper contributes to the general entrepreneurship literature as it allows for a better understanding of how grand challenges as antecedents may ultimately affect entrepreneurial outcomes (through founder social identities). In addition, it challenges the notion that entrepreneurs' social mission is sensitive to societal events (Dacin, Dacin, and Tracey 2011; Dutta 2017; Saebi, Foss, and Linder 2019) and highlights the importance of a multi-level examination of entrepreneurial phenomena (Shepherd 2011; Dabić et al. 2020).

## Theoretical background

### *Grand challenges and entrepreneurship*

Grand challenges refer to 'highly significant yet potentially solvable problems ... They affect vast numbers of individuals in often profound ways' (Eisenhardt, Graebner, and Sonenshein 2016, 1113). According to Ferraro, Etzion, and Gehman (2015), grand challenges tend to be (1) *complex*, involving dynamic interaction between multiple stakeholder groups; (2) *uncertain*, due to the difficulty in predicting stakeholders' perceptions and reactions; and (3) *value-laden*, because different stakeholder groups have diverse views and interpretations (see also Voegtlin et al. 2022). These characteristics not only have societal implications but also affect people individually. For instance, the COVID-19 pandemic has caused individual challenges as people struggle with the complexity, uncertainty, and different interpretations of the pandemic (Voegtlin et al. 2022).

Consequently, these characteristics should affect entrepreneurs individually, especially those who have not yet created their venture. Grand challenges, especially when they become salient, will pose crucial questions for individuals that seek to start their own business. Specifically, the *complexity* that comes with a grand challenge increases the risk of starting a business and poses the question of how the entrepreneur can account for increasingly complex interrelations in their business planning (Grodal and O'Mahony 2017). It also raises *uncertainty* with regard to opportunity recognition and exploitation, and the effect on the overall economic situation in a country (Nelson and Lima 2020). Finally, the *value-laden* contestations that surround grand challenges often trigger diverse personal

motivations in individuals (Banks et al. 2016) that might also translate into different pathways for entrepreneurial endeavours.

Therefore, scholars are increasingly interested in examining the impacts of grand challenges on entrepreneurship (Wiklund, Wright, and Zahra 2019). Specifically, research has contended that the preferences and meanings that founders associate with entrepreneurship (Fauchart and Gruber 2011)—an expression of entrepreneurial identity (Cardon et al. 2009; Gruber and MacMillan 2017)—may be the key to explaining how they respond to grand challenges. For instance, Williams and Shepherd (2016) found that, after an earthquake disaster, founders whose identity is strongly connected to national history dedicate their ventures to solving social injustice, whereas founders whose identity is detached from the country provide services to develop people's autonomous needs, such as job training. Along the same lines, Grodal and O'Mahony (2017) highlighted that the difference in founders' missions and levels of commitment could lead to eventual actions that digress from the initial grand ambition (i.e. radical innovation). Moreover, if entrepreneurs focus more on the growth of their own venture than on the well-being of broader stakeholders, they are less likely to respond to grand challenges, such as addressing income inequality (Di Lorenzo and Scarlata 2019).

As such, while previous research has provided initial insights into how founder social identities determine how entrepreneurs react to grand challenges, it remains unclear how these challenges affect founder social identities themselves. Put differently, we propose that grand challenges are not only interpreted through one's personal lens but also affect how entrepreneurs view themselves and their business. Therefore, we use the framework including the three pertinent characteristics of grand challenges to explore how an exemplary challenge, namely the 2015 European refugee event, relates to the strengths of founder social identities of entrepreneurs in host countries after the event.

### ***The 2015 European refugee event as grand challenge***

The 2015 refugee event in Europe constitutes an exogenous shock that presents a complex and uncertain challenge to local citizens and their values. The numbers of asylum applicants in EU member states jumped from around 627,000 in 2014 to more than 1.32 million in 2015 and 1.26 million in 2016 (Eurostat 2018), mainly due to political uncertainty in the Middle East caused by the civil wars in Syria and Libya, and the rise of the Islamic State (Berry, Garcia-Blanco, and Moore 2016). The event elicited complex media attention (Klein and Amis 2021), which, in turn, started societal discussions among family and friends, in the professional work sphere, and in educational systems (e.g. in business schools) (Holmes and Castañeda 2016). These discussions involved (1) economic topics about the *uncertain* impact of the refugees on the local economy and the labour market (Gale 2004); (2) political discussions around the *complexity* of policy adaptation to integrate refugees (de la Chaux and Haugh 2020) without imposing burdens on local citizens (Szkudlarek et al. 2021); and (3) social discussions around *values* and ideology related to how one should treat refugees, ranging from the fear of threats to national security to the opportunity to demonstrate humanitarianism and tolerance (Georgiou and Zaborowski 2017).

Scholars examining refugee challenges often focus on refugees themselves, i.e. refugees becoming entrepreneurs (e.g. Bizri 2017; Dabić et al. 2020; Khoury and Prasad 2016; Shepherd, Philippe Saade, and Wincent 2020). Scholars have also attempted to compare refugee entrepreneurs with local entrepreneurs, for instance with regard to the chance of becoming entrepreneurs (Klaesson and Öner 2020), the duration of entrepreneurship (Backman, Lopez, and Rowe 2021), and venture performance (Neuman 2021). Despite these comparisons, scholars have directed little attention to examining how local entrepreneurs are influenced by *refugees* (with the notable exception of Tracey and Phillips 2016). Acknowledging this limitation, recent entrepreneurship scholars have called for a more holistic approach to contextualize entrepreneurship in developed countries (Dabić et al. 2020), namely as a multi-level question that refers to whether societal-level challenges such as the refugee challenge would 'regenerate entrepreneurial context in host countries' (Desai, Naudé, and

Stel 2021, 937–939). In response to this call, we thus explore whether the 2015 refugee event in Europe has a broad implication for entrepreneurs, i.e. for their founder social identities, in the host country.

### ***Social identity theory and founder social identities***

When examining entrepreneurial identity, scholars rely on *social identity theory*.<sup>5</sup> Social identity is a general construct – without specifying a specific context – postulating the need for self-definition and for finding an individual's place in society as an elemental human need (Tajfel 1982). A social identity provides social orientation and is key to establishing self-worth (Turner et al. 1987). A basic element in the development of an individual's social identity is personal and symbolic interaction with others. Social identity serves as a 'cognitive frame' that helps individuals define situations and thus induces behaviors and actions that are in line with the identity (Fauchart and Gruber 2011). Social identity theory tends to apply to individuals in general; however, it can be applied to different settings. For instance, organizational identity captures its application at the organizational level (Fauchart and Gruber 2011, 937). Similarly, founder social identity is the application of social identity to the context of individual entrepreneurs (rather than general individuals.)

More precisely, building on social identity theory, Fauchart and Gruber (2011) conceptualized founder social identity as the meanings through which founders define themselves and their entrepreneurial activities. As such, founder social identity shares the same theoretical roots with social identity in general. Specifically, their typology of 'Darwinian', 'Communitarian', and 'Missionary' founders captures the meanings individuals associate with being a firm founder and builds on the three main identity dimensions offered by Brewer and Gardner (1996): (a) the basic social motivation for founding the firm, (b) the founder's basis for self-evaluation, and (c) the founder's frame of reference (e.g. relevant others). In the entrepreneurship context, 'the basic social motivation describes the main reasons why people engage in new firm creation, the basis of self-evaluation describes the elements that the founder uses to judge him/herself upon, or believes others will judge him/her upon, and the frame of reference describes the way in which and in relation to whom the founder derives self-worth' (Sieger et al. 2016, 547). These three dimensions jointly determine founder social identity; removing one dimension would alter the domain of the construct, not only conceptually but also empirically (Sieger et al. 2016; Podsakoff et al. 2003).

Specifically, Darwinians, Communitarians, and Missionaries represent three archetypal founder social identities separated by their level of social inclusiveness, thereby capturing distinct loci of founders' self-definitions in the social space (Gruber and MacMillan 2017): the 'I' (self), the 'personal We' (personal others), and the 'impersonal We' (impersonal others). Darwinian founders' basic social motivation is pursuing (financial) self-interest. They evaluate themselves based on whether they are acting in a professional, business-oriented way and see competitors as the primary frame of reference (Fauchart and Gruber 2011). Communitarians' main social motivation is to support or be supported by their personal community, i.e. a group of people they strongly identify with, such as friends or an ethnic community (Sieger et al. 2016). Their authenticity in terms of aligned interests and usefulness to their personal community serves as the basis for self-evaluation (Fauchart and Gruber 2011); their frame of reference is their personal community as such. Missionary founders' main motivation is to advance a particular social, environmental, or political cause. Contributing to a better world by exhibiting responsible behavior is the basis of self-evaluation, and the frame of reference is the society as a whole (Fauchart and Gruber 2011). Many recent research endeavours, such as research investigating entrepreneurs' learning and behaviors, have relied on this founder social identity typology as their theoretical foundation (e.g. Alsos et al. 2016; Brändle et al. 2018).

### ***The impact of the refugee challenge on founder social identity***

While individuals' social identities are typically formed in long-term processes that start with early observations of social interactions and experiences during childhood (Turner et al. 1994), individuals receive constant, changing input from their social surroundings and the types of social contacts they engage in throughout their lives (Alvesson and Willmott 2002; Stets and Burke 2000; Foy and Gruber 2022). Although social identities are thus typically formed and reshaped in a gradual, longitudinal process, the literature agrees that social identities might also be subject to sudden, external societal-level events (so-called trigger events) (Alvesson and Willmott 2002; 2017; Tracey and Phillips 2016; Ashforth, Schinoff, and Rogers 2016). An external event like the refugee challenge is likely to 'interrupt' individuals' familiar situations and thus their identity (Burke 1991). This is because individuals compare the new inputs in the changed environment with their initial self-definitions and adapt their social identities accordingly to reduce potential negative personal consequences (Burke and Ritzer 2007), such as the experience of negative emotions like anxiety, sadness, or anger (Stets et al. 2005). Importantly, these arguments not only apply to social identity in general but also to the specific identities individuals hold, including founder social identities. Without such an adaptation of founder social identities, entrepreneurs may become less motivated to exhibit critical behaviors directed at developing their businesses, including idea discovery and exploitation (Seibert, Nielsen, and Kraimer 2021). Therefore, identity, in whatever context, is argued to be 'inherently fragile and temporary. [...] [I]dentity is continually in the process of construction and does not comprise a single static entity' (Leitch and Harrison 2016, 182). In fact, previous research provides initial evidence that grand challenges do influence (social) identities. For instance, floods and earthquakes can lead to a shared common social identity (Ntontis et al. 2021; Drury et al. 2016), and disaster recovery periods induce parallel identity processes at the individual and community level and spur entrepreneurial opportunities (Dinger et al. 2020). Other examples of relevant grand challenges are natural disasters in general (Brück, Llussá, and Tavares 2011; Nelson and Lima 2020) or the arrival of refugees (Bauer, Lofstrom, and Zimmermann 2000).

To capture the impact of the refugee challenge on the founder social identities of entrepreneurs in the host country, we not only draw on social identity theory and the typology of founder social identities established by Fauchart and Gruber (2011), but also on Burke's (1991) argument that an individual's identity is a control system based on (1) a set of *meanings* that one uses to define one's self in a situation and that can become subject to (2) *input* from the environment, starting (3) a *comparison* between one's initial set of meanings and the environmental input and (4) eventually resulting in *output* (e.g. adapting the identity or demonstrating meaningful behavior to the environment).

Drawing on these four pillars, we note that while each founder social identity (Darwinian, Communitarian, and Missionary) carries with it an *initial set of meanings* related to an entrepreneur's basic social motivation, basis for self-evaluation, and frame of reference, grand challenges that suddenly become salient thus provide input that can 'impact psychologically the population of whole countries, affecting their perceptions and economic behavior' (Brück, Llussá, and Tavares 2011, 78). More specifically, a refugee challenge is likely to cause changes in the composition of local individuals' immediate social environment (Szkudlarek et al. 2021). Such changes provide *new input* and invite one to reassess one's social standing in the environment (Forehand, Rohit, and Reed 2002). This is because the increasing presence of new members (e.g. those sharing different ethnicities and nationalities in a host country) increases the complexity and uncertainty of social relationships and thus prompts individuals to re-evaluate their social belonging (Ferraro, Etzion, and Gehman 2015; Voegtlin et al. 2022). It also engages individuals in value-laden interpretations of the challenge.

As a result, applied to the entrepreneurship context, individuals will start *comparing* the meaning of their initial founder social identity, which is based on dimensions such as motivation, self-evaluation, and frame of reference, with their perception of that meaning in the changed environment (Zuzul and Tripsas 2020). Founders will attempt to rematch their identity standard to the new

social context to retain the meaning of their founder social identity (Powell and Baker 2017). As the presence of diverse members (e.g. refugees with different ethnicities, religions, and cultures) increases the complexity of (local) founders' social surroundings, local founders will tend to engage in new interpretations and (re)identify high-quality relationships in the new environment (Leitch and Harrison 2016). Relatedly, to reduce the uncertainty associated with incoming refugees such as in resource distribution and business opportunities (Guo, Al Ariss, and Brewster 2020), founders tend to reflect on their identity and seek validation (Powell and Baker 2014) as they attempt to reconnect their founder social identities with the new social reality (Radu-Lefebvre et al. 2021).

The *output* of founders' reassessment of the new social environment is the reconsideration of the strength of their founder social identity (Burke 1991). Evaluating the complexity and uncertainty in the new social environment leads founders to re-map their relationships with others throughout the whole society (Foy and Gruber 2022). The outcome may even include challenging their initial sense of self (Alvesson and Willmott 2002; Ashforth, Schinoff, and Rogers 2016)—raising questions such as what kind of entrepreneur they want to be, what they want to achieve as an entrepreneur, and where they belong (Fauchart and Gruber 2011). Thus, individuals' assessment of their social standing in a new environment, which includes incoming refugees, can strengthen or weaken their association with a specific founder social identity, i.e. the type of entrepreneur one is motivated to become (Sieger et al. 2016). Therefore, we argue that the refugee challenge will have an impact on the strength of the different founder social identities. Our general reasoning is depicted in Figure 1.

Summarizing our discussion, we expect that the uncertainty, complexity, and value-laden interpretations that come with the refugee challenge will affect the strength of the Darwinian, Communitarian, and Missionary founder social identities of entrepreneurs in the host countries differently.

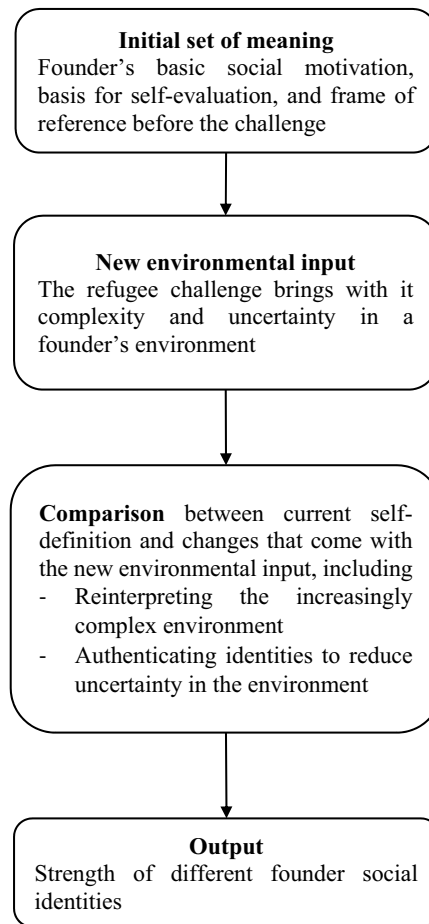
## Method and data

### General approach

We follow what Shepherd and Suddaby (2017) have called a *pragmatic empirical theorizing approach*, which 'uses empirical inspiration from interesting findings about management phenomena to inform and motivate an initial conjecture' (79). We adopted this approach because it enables us to develop stronger theory based on our empirical discoveries (von Krogh 2020, 161). More specifically, doing so helps us to theorize on interesting findings that are not easily explained by current theories and to make the first attempt to explain the identified relationships (i.e. between the refugee challenge and entrepreneurs' founder social identities) (Shepherd and Suddaby 2017). Put differently, this approach allows us to 'transparently [offer] interesting findings and then [theorize] on possible explanations for them' (80). In concrete terms, we thus present the theoretical background and setting, report the exploratory findings, and then discuss the corresponding theoretical explanations and implications (see also, for instance, Barnett, Hartmann, and Salomon 2018). Such an approach is particularly appropriate for the setting and positioning of our paper because while we have general theoretical knowledge about the effect of grand challenges on entrepreneurship and on individuals' identities, we unfortunately have too little theoretical ground to hypothesize specifically how exactly a grand challenge like the 2015 European refugee event relates to the strength of host-country entrepreneurs' different founder social identities. Therefore, it is more meaningful to present interesting empirical findings transparently and then theorize about corresponding explanations than to make strong a priori theoretical claims followed by deductive hypotheses testing (see von Krogh 2020; Shepherd and Suddaby 2017).

### Sample and data

We collected multi-level, secondary data from different sources to provide an empirical test of the relationship between a macro-level, societal event and founder social identities on the individual



**Figure 1.** Theoretical framework: The influence of the refugee challenge on individuals' founder social identities.

level (while also accounting for meso-level factors). As such, we followed the recent call of Dabić et al. (2020) by using 'a holistic, multi-dimensional approach [to testify the] multiple roots of entrepreneurial activities' (34).

For *individual-level variables*, including founder social identities, we relied on the 2016 survey round of the GUESSS project. GUESSS datasets from different editions have been frequently used in studies looking at entrepreneurs and their founder social identities (e.g. Brändle et al. 2018; de la Cruz, Jover, and Gras 2018). Importantly, in line with our considerations above, we focus on nascent entrepreneurs because they are in the process of firm creation but have not yet completed this process (see also Sieger et al. 2016)—i.e. they are in a 'prototype' stage. This means that they are still in the development process and thus open to change and more easily affected by external events (Powell and Baker 2017). In fact, Sieger et al. (2016)—who developed the founder social identity scale by using the GUESSS 2013/14 dataset – have argued that the GUESSS sample is composed of 'fairly young entrepreneurs – a significant share of these entrepreneurs is likely still in search of their identity' (566). In the GUESSS survey, nascent entrepreneurs were identified when they answered 'yes' to the question 'Are you currently trying to start your own business/to become self-employed?' and 'no' to the question 'Are you already running your own business/are you already self-employed?'. This ensured that we only considered nascent entrepreneurs who did not already have another business. On a general level, we also note that student samples (from GUESSS or other data collection efforts)

are frequently used in entrepreneurship research (e.g. Zhao, Seibert, and Hills 2005; Schlaegel and Koenig 2014; Smolka et al. 2018; Braun and Sieger 2021). From a methodological standpoint, student samples are considered effective (Netemeyer, Bearden, and Sharma 2003) for research on values, psychological phenomena, and behaviors (e.g. Bain, Kashima, and Haslam 2006; Shepherd and Michael Haynie 2009), as is the case in our study.

The 2016 GUESSS survey round included 50 countries, more than 1,000 universities, and 122,509 completed responses (Sieger, Fueglistaller, and Zellweger 2016). The 2016 GUESSS survey took place approximately one year after the start of the European refugee event in 2015, enabling us to evaluate post-event founder social identities.<sup>6</sup> We restricted the sample to nascent entrepreneurs from European countries who held the same nationality as the country of their universities.

Variables on the *country level* were gathered from other data sources. As outlined in greater detail below, these are the United Nations High Commissioner for Refugees (UNHCR) population statistics, the World Bank, United Nations (UN) international migrant stocks, and the Factiva database. After excluding responses with missing values on the individual level and from countries where the Hofstede cultural indices were not available (i.e. Liechtenstein, Belarus, and Macedonia), our final sample included 6,096 individuals from 432 universities and 24 countries.<sup>7</sup>

### **Dependent variables**

Founder social identities were assessed with the scale developed and validated by Sieger et al. (2016) and commonly used in studies on entrepreneurial identities (e.g. Alsos et al. 2016; Brändle et al. 2018). Each founder social identity measure (Darwinian, Communitarian, and Missionary) included five items that covered the three underlying dimensions of founder social identities (i.e. basic social motivation, basis for self-evaluation, and frame of reference). The items were self-assessed by the respondents on a seven-point Likert-type scale. To calculate the respective strengths of the Darwinian, Communitarian, and Missionary founder identities, we relied on Sieger et al. (2016), who built corresponding indices to capture the strength of a particular founder social identity. More precisely, they state: 'For the regression analyses, we [...] formed continuous identity variables which take the average of the five respective items' (561). Cronbach's Alphas of the three founder social identity variables are .807 (Darwinian), .837 (Communitarian), and .870 (Missionary). In our analyses, we explore the influence of the refugee challenge on the strength an individual entrepreneur associates with each founder social identity separately (i.e. Darwinian, Communitarian, or Missionary), which builds on the notion that multiple identities of varying strengths can co-exist in every nascent entrepreneur (Fauchart and Gruber 2011; Sieger et al. 2016). This allows for a more refined exploration of the influence of refugee challenges on local entrepreneurs in a host country. In fact, looking at the strengths of the three main founder social identities separately is in line with the relevant literature (see Fauchart and Gruber 2011; Sieger et al. 2016) and with other recent studies (e.g. Alsos et al. 2016; Brändle et al. 2018; de la Cruz, Jover, and Gras 2018). Moreover, focusing on the strengths of different founder social identities as a first step (and not at 'pure' or 'hybrid' identities, see Sieger et al. 2016) allows for a more straightforward and, at the same time, nuanced exploration of how the refugee event relates to specific founder social identities.

### **Independent, moderator, and mediator variables**

Our independent variable focuses on the *change of the number of asylum applicants* in a given country as a proxy for the intensity with which that country is affected by the refugee event. The number of asylum applicants (i.e. asylum seekers who applied during a year) captures the incoming flux of people better than the measure of the number of refugees. According to the definitions of the UNHCR, although asylum seekers have sought international protection, their refugee status tends to be as of yet undetermined. It is a more immediate measure of the refugee event because refugee status is granted only after a long period of administrative evaluation (Gale 2004) and may not

accurately reflect the magnitude of the refugee event in a country. Asylum seekers are also different from migrants, a category that includes a broader range of immigrants, including refugees and those who voluntarily seek to improve their lives (Guercini et al. 2017).

We used the change in the number of asylum applicants before and during the event for each country to capture the magnitude of the event in a given country. Because an unexpected administrative overload has significantly delayed asylum applications in European countries, we used three-year averages of asylum applications ( $n$  applicants at the time period 2011–2013 before the event and  $n$  applicants at the time period 2014–2016). For instance, due to the long bureaucratic process, applications in 2016 were mostly from asylum applicants who arrived in a host country before 2016 (Hultin and Introna 2019). The data was drawn from the UNHCR Population Statistics Database,<sup>8</sup> which contains asylum applications in UN-member countries since 2000. We adjusted the number of asylum applicants for each year to the size of the respective country population ( $pop.size_t$ , drawn from the World Bank database<sup>9</sup>) to consider differences in national capacity to handle the incoming asylum seekers:

$$\begin{aligned} \text{Change of the number of asylum applicants} = & [(n_{2014}/pop.size_{2014}) \\ & + (n_{2015}/pop.size_{2015}) + (n_{2016}/pop.size_{2016})]/3 - [(n_{2011}/pop.size_{2011}) + (n_{2012}/pop.size_{2012}) \\ & + (n_{2013}/pop.size_{2013})]/3 \end{aligned}$$

In our analysis, we explored the following potential moderator and mediators to elucidate the boundary conditions and mechanisms underlying the main effects. The moderator variable, *share of foreign migrants*, refers to the share of foreign-born citizens in a country prior to the refugee event. We identified this variable because individuals' past experiences with and exposure to foreign migrants may influence their self-defining process (Checkel 2001). As we relied on the five-year statistics of the UN international migration stocks,<sup>10</sup> we included the latest numbers that were available before the 2015 refugee event (i.e. statistics for the year 2010).

For the mediators, we identified different *industry sectors* as the potential meso-level link between the societal-level refugee event and individual-level founder social identities. This is because industries may be influenced by incoming refugees differently; for instance, the agriculture sector may benefit from additional labour force (Aldén et al. 2022), while the health care and social work sector may need to provide necessary services to help refugees survive (Baycan-Levent and Nijkamp 2009). Changes in industry, in turn, provide a more proximal environmental input with a more direct link to founder social identities (Radu-Lefebvre et al. 2021). We included 12 dummy variables which indicate whether the nascent venture will be mainly active in the respective sector (coded 1) or not (coded 0).<sup>11</sup> The industry categories offered in the GUESSS survey are based on the NACE statistical classification of economic activities.

### Control variables

We include several control variables on the individual and country level that may influence our dependent variables and which do not have multicollinearity issues, i.e. with Variance Inflation Factors (VIF) below 10 (and tolerance 1/VIF above 0.1) (Hair et al. 2013).

Our control variables on the individual level were taken from the GUESSS dataset. *Age* may affect founder social identity through increasing sympathetic concerns or other-oriented problem-solving and pro-social behaviors over the life course (Sieger et al. 2016). It was measured continuously. *Gender* is a binary variable with '1' for men who are argued to be more likely to become founders (Bergmann et al. 2018) compared to women ('0'). *Entrepreneurship education* is argued to affect how founders evaluate their feelings about entrepreneurship (Costa et al. 2018), a key element of their identities. We used an ordinal variable indicating the comprehensiveness of an individual's education targeting entrepreneurship: (1) without any course, (2) with at least one elective course, (3) with at least one compulsory course, or (4) studying in a specific program in entrepreneurship.

On the country level, we used two cultural variables: 1) *individualism (vs. collectivism)* refers to ‘a situation in which people are supposed to look after themselves and their immediate family only’ (Hofstede and Bond 1984, 419); 2) *uncertainty avoidance* refers to ‘the extent to which people feel threatened by ambiguous situations, and have created beliefs and institutions that try to avoid these’ (Hofstede and Bond 1984, 419). We used the 2018 versions of the Hofstede indicators. Also, we controlled for the following economic variables: *gross domestic product per capita (GDPPC)* and *unemployment rates* (in the percentage of the total labour force, both drawn from the World Bank database, see above). National wealth in terms of *GDPPC* can discourage entrepreneurial activities and thus affect founder social identities in a given country (Stephan and Uhlaner 2010). *Unemployment rates* were controlled for because they tend to motivate the development of founder social identities (Nikolova 2019). Furthermore, our institutional variable *governmental change* (from right to left wing or from left to right wing) captures changes in political norms that may reflect changes in societal attitudes towards refugees (McMahon and Sigona 2018) and may thus also influence founder social identities within a given country (Estrin, Korosteleva, and Mickiewicz 2013). We developed a binary variable to indicate whether there was a governmental change between 2015 and 2016.<sup>12</sup> Another institutional variable, *European region*, controls for the structural, spatial, and socio-cultural differences across regions in Europe, which can affect entrepreneurs’ missions (Bosma and Schutjens 2011) and how local people react to the refugee event (Georgiou and Zaborowski 2017).<sup>13</sup> We included three dummy variables with ‘0’ always referring to the reference category ‘Eastern’ and ‘1’ referring to either ‘Northern’, ‘Southern’, or ‘Western’ Europe, based on the categorization of UNGMD.<sup>14</sup>

## Results

### *Descriptive and exploratory results*

Table 1 presents mean values, standard deviations, and correlations of all variables. The change of asylum applicants shows (marginally) significant correlations with all the dependent variables: Darwinian founder social identity (Coeff. =  $-.02$ ,  $p = .095$ ), Communitarian founder social identity (Coeff. =  $.08$ ,  $p < .001$ ), and Missionary founder social identity (Coeff. =  $-.04$ ,  $p < .001$ ).

Regarding the choice of our analytical procedure, it is important to note that in our study, we analysed the relationship between an objective measure at the societal level (i.e. number of asylum applicants) and the strength of founder social identities at the individual level (including an individual’s choice of industry), while controlling for the university- and country-level environment. As such, our data includes individual-level and country-level observations, whereby the former are nested in the latter. Therefore, selecting our analytical method on the basis of its general purpose, namely accounting for multiple levels of analysis (country, university, and individual level), we used multi-level modelling in Stata 15 (with the command *meglm* for main effects and the moderator) to analyse our data because it accounts for the hierarchical relations of the data. Not using multi-level modelling in contexts with nested data could be detrimental as such hierarchical data violates the assumption of independent observations in regression analysis and may result in distorted  $p$ -value estimations (Bergmann et al. 2018).<sup>15</sup>

Table 2 reports details on the main and interaction effects with the moderator variable. The results show a non-significant relationship between the increase in the number of asylum applicants and the strength of the Darwinian founder social identity (Coeff. =  $-11.087$ ,  $p = .481$ , Model 1). The increase in asylum applicants is positively related to the strength of the Communitarian founder social identity (Coeff. =  $24.979$ ,  $p = .021$ , Model 2). We do not find a significant relationship between the refugee event and the strength of the Missionary founder social identity (Coeff. =  $-20.565$ ,  $p = .190$ , Model 3).

Concerning the moderator, the relationship between the change in the number of asylum applicants and the strength of the Darwinian founder social identity remains non-significant even

**Table 1.** Means, standard deviations, and Pearson correlations.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1 Nascent founders' Darwinian founder social identity	5.464	1.068												
2 Nascent founders' Communitarian founder social identity	5.096	1.242	0.392***											
3 Nascent founders' Missionary founder social identity	5.285	1.306	0.366***	0.631***										
4 Change of number of asylum applicants	0.003	0.005	-0.021	0.084***	-0.038**									
5 Share of foreign migrants	0.074	0.056	-0.146***	0.007	0.013	0.025								
6 Age	23.936	4.263	-0.039**	0.012	0.011	0.101***	0.169***							
7 Gender <sup>a</sup>	0.502	0.500	-0.015	-0.053***	-0.063***	0.060***	0.140***	0.021						
8 Entrepreneurship education	1.187	1.117	0.159***	0.021	0.029*	-0.048***	-0.292***	-0.028*	-0.053***					
9 Individualism (vs. collectivism)	58.125	15.184	0.010	0.011	-0.067***	0.622***	-0.095***	0.098***	0.042**	0.044***				
10 Uncertainty avoidance	82.365	14.882	0.095***	-0.004	0.058***	-0.172***	-0.454***	-0.172***	-0.097***	0.150***	-0.396***			
11 GDP/PC	22518	14062	-0.150***	-0.035**	-0.035**	0.009	0.810***	0.205***	0.151***	-0.235***	0.195***	-0.593***		
12 Unemployment rate (percent)	7.838	4.407	0.035**	0.082***	0.144***	-0.331***	0.274***	0.046***	0.044***	-0.064***	-0.382***	0.096***	0.090***	
13 Governmental change <sup>b</sup>	0.483	0.500	0.088***	-0.056***	0.026*	-0.499***	-0.259***	-0.038**	-0.075***	0.248***	-0.177***	0.173***	-0.161***	0.362***

<sup>a</sup>0=female and 1=male.

<sup>b</sup>0=no change and 1=change.

Note: The correlation analysis was based on the sample size of  $n = 6,096$ . The dummy variables for 'Industry' and 'European region' have been excluded for space reasons.

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ .

Table 2. Regression analyses: Asylum applicants and founder social identities.

Level and variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Darwinian founder social identity	P>z	Communitarian founder social identity	P>z	Missionary founder social identity	P>z	Darwinian founder social identity	P>z	Communitarian founder social identity	P>z	Missionary founder social identity	P>z
	Coeff. (Unstand.)		Coeff. (Unstand.)		Coeff. (Unstand.)		Coeff. (Unstand.)		Coeff. (Unstand.)		Coeff. (Unstand.)	
n = 6,096 (24 countries, 432 universities)												
Individual level												
Age	-0.003	0.394	-0.004	0.272	0.002	0.637	-0.003	0.393	-0.004	0.261	0.002	0.653
Gender	-0.010	0.734	-0.117	0.000	-0.157	0.000	-0.010	0.731	-0.119	0.000	-0.157	0.000
Entrepreneurship education	0.087	0.000	0.059	0.000	0.062	0.000	0.087	0.000	0.060	0.000	0.061	0.000
Industry dummies included	Yes		Yes		Yes		Yes		Yes		Yes	
Country level												
Individualism	0.006	0.174	-0.002	0.553	0.004	0.280	0.005	0.260	-0.005	0.025	0.002	0.557
Uncertainty avoidance	-0.001	0.725	-0.005	0.077	0.001	0.820	-0.002	0.656	-0.005	0.005	0.000	0.964
GDP/c	0.000	0.118	0.000	0.934	0.000	0.828	0.000	0.237	0.000	0.011	0.000	0.597
Unemployment rate	0.005	0.778	0.010	0.388	0.018	0.270	0.002	0.892	-0.009	0.349	0.011	0.507
Governmental change	-0.069	0.559	-0.185	0.018	-0.142	0.219	-0.046	0.716	-0.038	0.547	-0.074	0.531
European region dummies	Yes		Yes		Yes		Yes		Yes		Yes	
Change of number of asylum applicants	-11.087	0.481	24.979	0.021	-20.565	0.190	0.945	0.974	85.778	0.000	14.166	0.607
Share of foreign migrants	0.266	0.837	-0.510	0.606	1.132	0.398	0.625	0.672	1.657	0.057	2.235	0.131
Change of number of asylum applicants x share of foreign migrants							-185.284	0.619	-1033.454	0.000	-542.841	0.146
Intercept	5.406	0.000	5.649	0.000	4.814	0.000	5.440	0.000	5.684	0.000	4.897	0.000
Variance country	0.030		0.007		0.027		0.029		0.000		0.023	
Variance country > university	0.030		0.015		0.010		0.030		0.013		0.010	
var(residual of identity variable)	1.027		1.444		1.595		1.027		1.445		1.596	
Log likelihood	-8801.75		-9801.55		-10103.02		-8801.62		-9793.83		-10102.01	
Wald chi2(0)	164.30	0.000	156.65	0.000	170.01	0.000	164.86	0.000	277.07	0.000	176.53	0.000
LR test vs. linear model: chi2(2)	78.51	0.000	12.79	0.002	18.82	0.000	77.19	0.000	9.55	0.008	15.60	0.001
Intraclass corr. coef. [individual]	94.55%		98.49%		97.72%		94.61%		99.10%		98.00%	
Intraclass corr. coef. [university]	2.73%		1.03%		0.60%		2.73%		0.90%		0.58%	
Intraclass corr. coef. [country]	2.72%		0.49%		1.68%		2.66%		0.00%		1.41%	

after considering the interaction between the number of asylum applicants and the share of foreign migrants in a given country, which is also non-significant (Coeff. =  $-185.284$ ,  $p = .619$ , Model 4). In contrast, we find a significant interaction effect related to the strength of the Communitarian founder social identity (Coeff. =  $-1033.454$ ,  $p < .000$ , Model 5). Figure 2 illustrates this finding by showing that a strongly increasing number of asylum applicants is related to a stronger Communitarian founder social identity only if founders live in a country with a previously low share of foreign migrants (and not when they live in a country with a previously high share of foreign migrants). For the Missionary founder social identity, the interaction effect is not significant (Coeff. =  $-542.841$ ,  $p = .146$ , Model 6).

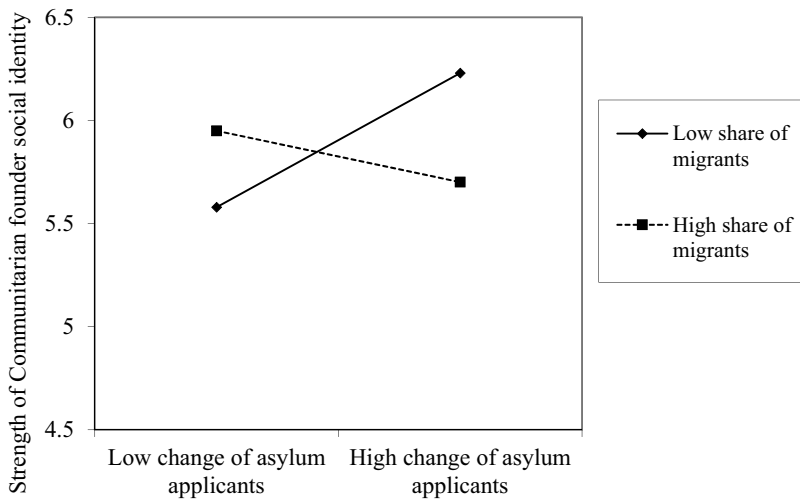
Finally, we followed Baron and Kenny (1986) causal mediation analysis (with the command *medeff* in Stata) to examine the mediating role of industry sectors between the refugee event and the strength of individuals' founder social identities. After analysing all the industries, Table 3 reports the most interesting and significant findings from our analysis – that is, those related to the *human health and social work* industry as well as to the *financial services* industry (while the other industries do not show consistent and significant results). Specifically, our results reveal the significant mediating role of the *human health and social work* industry in the relationship between an increase in asylum applicants in a country and the strength of founder social identities of nascent entrepreneurs in that country. An increase in asylum applicants increases the likelihood that the planned new venture will be active in the human health and social work industry; this, in turn, is negatively related to the strength of the Darwinian founder social identity (the average indirect effect =  $-0.210$ ; Model 7) and positively related to the strength of both the Communitarian (the average indirect effect =  $0.255$ ; Model 8) as well as the Missionary founder social identity (the average indirect effect =  $0.251$ ; Model 9; all confidence intervals [CI] include no zero) (Hayes 2013).

Another important mediator is the *financial services* sector. More precisely, we found a significant negative relationship between the number of asylum applicants and the likelihood of planning to be active in the financial services sector. This, in turn, is positively related to the strength of the Darwinian founder social identity (the average indirect effect =  $-0.011$ ; CI includes no zero; Model 10) but not significantly related to the strength of the Communitarian (the average indirect effect =  $0.001$ ; Model 11) or the Missionary founder social identity (the average indirect effect =  $0.006$ ; Model 12; both CIs include zero).

### Robustness checks

We first sought to further demonstrate that the *refugee event as a societal trigger* actually relates to the strengths of founder social identities in a given European country. We estimated our main effect and interaction effect models for 19 non-European countries in the 2016 GUESSS survey where there was no explicit 'refugee event'.<sup>16</sup> The asylum indicators were not significantly related to any of the founder social identities in those countries (all with  $p > .10$ ). Furthermore, we analysed the same models using data from the previous GUESSS survey in 2013/14 for European countries (i.e. data collected before the refugee event in 2015). The asylum indicators in that period did not significantly relate to the strength of the European founder social identities in 2013/14 (all with  $p > .10$ ). This supports our contention that the 2015 European refugee event is indeed associated with the strength of nascent entrepreneurs' founder social identities in a host country.

Moreover, we accounted for within-subject changes of founder social identity variables between the GUESSS survey in 2013/14 and 2016 in two ways. First, for 16 European countries participating in both waves, we included the average values of all founder social identity variables in the country in 2013/14 as additional control variables.<sup>17</sup> Still, the positive main relationships between the asylum indicators and the strength of the Communitarian founder social identity remained significant (with  $p < .001$ ). Second, we identified student entrepreneurs who participated in both the 2016 and 2013/14 GUESSS surveys (i.e. before and after the 2015 European refugee event) and met our sample inclusion requirements. Regrettably, this subsample is quite small ( $n = 30$ ) and is thus not



**Figure 2.** Interaction plot: Communitarian founder social identity vs. change of asylum applicants.

appropriate for our main analyses. Nevertheless, we calculated the change in the strength of different founder social identities of these individuals between the two survey waves and then performed the same multi-level modelling (as Models 1–3 in Table 2) on this sample, using the ‘change in strength’ variable as the dependent variable. Most results were in line with our main findings. The increase of asylum applicants in 2015 has a significant and positive relationship with the change in the strength of the Communitarian founder social identity (i.e. change from 2013/14 to 2016, Coeff. = 179.698,  $p < .001$ ) but exhibited no significant relationship with the change in the strength of the Missionary founder social identity (Coeff. =  $-91.264$ ,  $p = .53$ ). Interestingly, we found a significantly positive relationship between the refugee event and the change in the strength of the Darwinian founder social identity (Coeff. = 47.570,  $p < .001$ ). Still, we must interpret these findings with the greatest caution, considering the very limited size of the two-wave sample.

Furthermore, we included *alternative independent variables* as proxies for the refugee event. Specifically, we used a dummy variable that classified a country either as influenced by the refugee event or not, depending on whether the change of asylum applicants was below the mean (and in another test below the median) of changes in the number of asylum applicants across all European countries in our sample. Moreover, we calculated all models with the population-adjusted three-year average (2014–2016) of the *number* (instead of the change) of asylum applicants. The main relationships and interaction terms always remained very similar.

We sought to establish another *meso-level* link between the societal level and the individual level. Therefore, we added a control variable, namely *the share of the foreign individuals in each university*, to our models to consider the exposure of individuals to foreigners in their immediate social environment at the university level (Audretsch, Hülsbeck, and Lehmann 2012); the results remained consistent. Moreover, we advanced the level of analysis to the university level by aggregating the founder social identity variables to the university level and calculated the models with the means of these founder social identity variables at the university level as dependent variables. We kept all country-level controls but excluded individual-level controls. Moreover, we included aggregated individual evaluations of the extent to which the university provides a favourable entrepreneurial environment (from the GUESS dataset) as an additional university-level control variable. Our results remained consistent.

Lastly, the number of responses per country in our sample ranged from 10 (Albania) to 1,716 (Poland). We therefore re-analysed all the models in the main analyses, excluding countries with less

Table 3. Mediation analysis.

Level and variable	Model 7		Model 8		Model 9		Model 10		Model 11		Model 12	
	Coeff. (Unstand.)	P>z	Coeff. (Unstand.)	P>z	Coeff. (Unstand.)	P>z	Coeff. (Unstand.)	P>z	Coeff. (Unstand.)	P>z	Coeff. (Unstand.)	P>z
n = 6,096												
<b>DV: industry</b>												
IV: Change asylum applicants	27.158	0.010	27.158	0.010	27.158	0.010	27.158	0.006	27.158	0.006	27.158	0.006
Intercept	-2.795	0.000	-2.795	0.000	-2.795	0.000	-2.795	0.000	-2.685	0.000	-2.685	0.000
<b>DV: founder social identity</b>												
IV: Change asylum applicants	-9.257	0.050	27.798	0.000	-3.550	0.543	-9.330	0.049	27.885	0.000	-3.464	0.553
Mediator: industry	-0.227	0.000	0.270	0.000	0.266	0.000	0.180	0.002	-0.014	0.831	-0.098	0.166
Share of foreign migrants	-0.307	0.577	-0.569	0.379	0.453	0.506	-0.291	0.599	-0.585	0.366	0.439	0.523
Age	-0.003	0.434	-0.001	0.872	0.003	0.418	-0.003	0.383	0.000	0.948	0.004	0.333
Gender	0.007	0.812	-0.141	0.000	-0.156	0.000	0.021	0.432	-0.158	0.000	-0.173	0.000
Entrepreneurship education	0.112	0.000	0.055	0.000	0.055	0.001	0.115	0.000	0.049	0.001	0.050	0.001
Individualism	0.007	0.000	-0.002	0.333	0.010	0.610	0.006	0.000	-0.001	0.431	0.001	0.497
Uncertainty avoidance	0.001	0.244	-0.004	0.004	0.002	0.111	0.001	0.314	-0.004	0.006	0.003	0.084
GDP/PC	0.000	0.000	0.000	0.079	0.000	0.126	0.000	0.000	0.000	0.093	0.000	0.146
Unemployment rate	0.019	0.000	0.046	0.000	0.050	0.000	0.019	0.000	0.046	0.000	0.050	0.000
Governmental change	-0.001	0.980	-0.220	0.000	-0.161	0.000	-0.009	0.802	-0.218	0.000	-0.155	0.001
Intercept	5.010	0.000	5.351	0.000	4.707	0.000	5.020	0.000	5.322	0.000	4.686	0.000
<b>Effect</b>												
Indirect effect <sup>a</sup>	-0.210	-0.327;	0.255	0.119;	0.251	0.107;	-0.011	-0.020;	0.001	-0.008;	0.006	-0.003;
		-0.099		0.378		0.380		-0.003		0.009		0.014
Direct effect	-9.355	-18.024;	27.684	17.533;	-3.670	-14.357;	-9.428	-18.102;	27.770	17.606;	-3.585	-14.283;
		-0.414		38.152		7.351		-0.483		38.253		7.449
Total effect	-9.564	-18.218;	27.938	17.805;	-3.420	-14.088;	-9.439	-18.112;	27.771	17.608;	-3.579	-14.276;
		-0.624		38.412		7.606		-0.493		38.255		7.455

<sup>a</sup>If the confidence interval does not include zero, it suggests a significant indirect effect (Hayes 2013).

than 50 responses (Albania, Belgium, Finland, France, Ireland, Lithuania, Sweden, and Ukraine), and found that the effects and model fit did not change significantly.<sup>18</sup>

## Discussion

Our study responds to the recent call to better understand the role identity plays in the relationship between grand challenges and entrepreneurship (Voegtlin et al. 2022). The results of our exploratory study show that an increase in the number of asylum applicants is not directly related to the strength of the Darwinian or Missionary founder social identities but that it positively relates to the strength of the Communitarian founder social identity. This relationship, in turn, is weaker if local founders have previously been exposed to a larger share of migrants in their own countries. Furthermore, we found that specific industry sectors, namely the human health and social work sector and the financial services sector, play an important role as a meso-level link between the macro-level refugee event and individual-level founder social identities.

We explain the relationships between the refugee event and the strength of founder social identities mainly with the help of two mechanisms. First, we refer to the role of the salience of the different social identity dimensions (Hogg and Terry 2000); second, we discuss the opportunities in the (industry) environment (Foy and Gruber 2022) as the corresponding meso-level link. Concerning the non-significant relationship between an increase in asylum applicants and the strength of the *Darwinian founder social identity*, we assume that there are two effects that offset each other. On the one hand, the challenge increases uncertainty with regard to financing and profitable business *opportunities*—which is not appreciated by Darwinians as their frame of reference is competition (Fauchart and Gruber 2011). On the other hand, despite increasing complexity and uncertainty in the host country, the refugee event may also provide new opportunities that are financially attractive on a general level; this, in turn, can trigger the strength of the Darwinian founder social identity in local entrepreneurs because they are induced to pursue more self-interested ventures. More precisely, the *salience* of the Darwinian basic social motivation, namely pursuing (financial) self-interest, is enhanced, which ultimately results in a stronger Darwinian founder social identity. In fact, refugees could bring in more flexible, affordable, and diverse human capital (Neuman 2021) and also have their own needs that may not be met by existing businesses (Szkudlarek et al. 2021). These two opposing effects may offset each other and render the main effect non-significant.

Second, concerning *Communitarian founder social identity*, we found that the inflow of a high number of refugees in a country positively relates to the strength of the Communitarian founder social identity – an identity that is based on seeking support and being supported by one's close community (i.e. personal others) (Sieger et al. 2016). In general, such a community can be any group of people with whom one has a close connection, such as the family, the local town community, or an ethnic community (Lumpkin, Bacq, and Pidduck 2018)—perceived as an *ingroup* by founders (Stets and Burke 2000). Refugees, in turn, enhance the complexity of social relationships but finally constitute an *outgroup* that differs from founders' ingroups. As such, refugees are perceived as a potential threat to the welfare of ingroups. We argue that this enhances the *salience* of the personal community as the frame of reference and therefore increases the strength of the Communitarian founder social identity. More specifically, founders might feel, for instance, that refugees increase tax burdens on the local community or even bring violence that constitutes a threat to family and friends (de la Chau, Haugh, and Greenwood 2018; Holmes and Castañeda 2016). Therefore, nascent entrepreneurs in the host country might start protecting the interests of members of their close social group and defending their identity as a community (Ashforth, Schinoff, and Rogers 2016; 2017). Furthermore, seeing others' plights tends to raise individuals' concerns that members of their own close social community might suffer the same, or at least become worse off (Antonetti and Maklan 2018). To prevent this, individuals tend to demonstrate altruistic behavior, particularly towards those who are important to their community, for instance, in terms of voluntary and generous help and support (Karra, Tracey, and Phillips 2006). As such, the basic social motivation

to support or be supported by the personal community will be stronger. Finally, societal events can stimulate a sense of common fate among individuals who experience such an event. Namely, individuals in a host country could develop a stronger shared ingroup identity among each other (Drury et al. 2016). In addition, as unexpected societal events tend to increase uncertainty, individuals are motivated to reduce the uncertainty in their social surroundings: 'uncertainty is particularly effectively reduced by self-categorization in terms of a well-defined, consensual, and clearly prescriptive ingroup prototype' (Hogg 2000, 233). That is, local entrepreneurs will fall back on their existing community rather than looking to the new community of incoming refugees (i.e. basic social motivation), they want to bring something truly useful to their community (i.e. basis of self-evaluation), and therefore focus their business on their social ingroup (i.e. frame of reference). Taken together, the complexity and uncertainty of the refugee challenge induce local entrepreneurs to pay more attention to their own community, which relates positively to the strength of their Communitarian founder social identity. As such, our findings highlight the importance that entrepreneurs attach to personal others when faced with increasing complexity, uncertainty, and value contestations. Put differently, our study underscores the importance of 'the community identity within a particular locale' (Lumpkin, Bacq, and Pidduck 2018, 40).

We further found that the relationship between the change in the number of asylum applicants and the strength of the Communitarian founder social identity is weaker if local entrepreneurs have already been exposed to a high share of migrants in their country. This is because, according to social learning theory (Wenger 2000), individuals' past experiences with and exposure to foreign migrants influence their self-definition process (Checkel 2001). As such, the development of founder social identities is affected by their experience of interacting with and learning from other social groups. This learning process can occur through direct interaction with migrants but also through observing public debates or reading articles related to national policy over time. Consequentially, the refugee event may become less relevant for founder social identities because it is perceived as less of a 'shock' by citizens of the host country (Peteraf and Shanley 1997). When a large share of migrants has already settled in a country, both the governmental and business systems have been adapted to accommodate foreigners (Keely 1996). As a result, local entrepreneurs are less likely to perceive the new refugees as presenting complex and uncertain problems that might affect their own community, which implies a weaker effect on the strength of the Communitarian founder social identity.

In addition, we identified the mediating role of the human health and social work industry in the positive relationship between a change in the number of asylum seekers and the strength of the Communitarian social identity of local entrepreneurs. This could be because as refugees involuntarily leave their home country for their own safety (such as fleeing from war or natural disasters) (Holmes and Castañeda 2016), they tend to arrive in the host country in poor physical and mental states (Silove, Ventevogel, and Rees 2017) and thus require extra health and social support. Seeing refugees' need for help in health- and social-related matters, in turn, might raise founders' concerns that their own close social community might suffer the same (Antonetti and Maklan 2018). Consequently, they may be more likely to identify and exploit the corresponding *opportunities* in the human health and social work industry. In comparison, the focus on 'self-interests' in the financial services sector is less relevant to the focus of Communitarians (and Missionaries) on others (Gruber and MacMillan 2017) and thus has non-significant relationships with the strength of those founder social identities. More generally, this finding indicates that a change in the asylum seeker numbers provides new opportunities in those industries, which in turn may invite those entrepreneurs to re-evaluate their identity (as we argue in Figure 1).

Finally, we did not find a significant and direct influence of the refugee event on the strength of the *Missionary founder social identity* of local entrepreneurs. Traditionally, one would have expected the refugee event to represent a new social cause that existing institutions are not well equipped to deal with, primarily because refugees tend to have their own demands and practices that are different from those in the host country (Holmes and Castañeda 2016). When the existing systems cannot accommodate the new needs arising from such a new social cause, this creates

entrepreneurial *opportunities* that Missionary founders are induced to explore (de la Chaux, Haugh, and Greenwood 2018; Klüppel, Pierce, and Snyder 2018), which leads them to set up prosocial ventures (Mittermaier, Patzelt, and Shepherd 2021).

However, a potential reason for the non-significant finding is that the *salience* of solving societal problems may have been engrained in founders' moral self-concept (Miller et al. 2012), limiting the possibility of being affected by external stimuli in the short run (Ashforth and Mael 1996). In fact, as seen in Model 6 of Table 2, only individuals' gender and entrepreneurship education are significantly related to the strength of the Missionary founder social identity ( $p \leq .001$ ). This indicates that the Missionary founder social identity might indeed be related to more stable factors. Moreover, one could speculate that the increasing political actions of European governments in response to the refugee event (Holmes and Castañeda 2016), such as offering stable aid and daily supplies (de la Chaux and Haugh 2020), may have reduced the urgency to advance a social cause and did not open up many new opportunities, leaving the strength of the Missionary founder social identity unaffected.

### **Theoretical contributions and implications**

Our study contributes to the literature in several important ways. First, we expand the body of knowledge on the influence of grand challenges such as refugee challenges on individuals and entrepreneurship considerably (Eisenhardt, Graebner, and Sonenshein 2016; George et al. 2016). In fact, previous studies on the topic have tended to focus on entrepreneurship as a solution to grand challenges, such as by reducing income inequality (Di Lorenzo and Scarlata 2019), providing disaster relief (Nelson and Lima 2020; Williams and Shepherd 2016), and creating job opportunities to integrate victims (i.e. refugees) into the local society (e.g. de la Chaux, Haugh, and Greenwood 2018; Shepherd, Philippe Saade, and Wincent 2020; Dabić et al. 2020; Backman, Lopez, and Rowe 2021; de la Chaux and Haugh 2020). However, *how grand challenges affect entrepreneurs themselves* is also very relevant; despite this fact, this relationship remains under-researched, preventing us from developing relevant theory about the relationship between grand challenges and entrepreneurship (Wiklund, Wright, and Zahra 2019). We address this crucial gap with our focus on the refugee challenge, as it enables us to theorize about how the complexity and uncertainty of a grand challenge may alter the social relationships in a country and, in turn, local entrepreneurs' different founder social identities (Voegtlin et al. 2022). In fact, our findings illuminate how a sudden challenge in their social surroundings relates to local founders and their entrepreneurial aspirations (and ultimately, to the strength of their founder social identities). In particular, our insights suggest that the refugee challenge seems to induce local entrepreneurs to focus on their desire to protect and serve their own community, which usually consists of close people such as friends, colleagues, or club members (Sieger et al. 2016), whereby the relationships with these people most likely already existed before the refugee event. That is, these Communitarian entrepreneurs focus primarily on their local community rather than on refugees. This advances the general understanding of the impact of a refugee challenge on the host country, particularly for local citizens who still constitute most of the successful entrepreneurs in a country (Mata and Alves 2018) and are important players in local community development. As such, our findings complement prior research that often only focused on how entrepreneurs address grand challenges or how victims (i.e. refugees) become entrepreneurs themselves.

In addition, enhanced knowledge of the relationship between the refugee challenge and local entrepreneurs may help us *better understand the potential impact on the local entrepreneurial context* in the host country (Desai, Naudé, and Stel 2021), especially in the developed country context, 'where there are more generous migration policies for refugees' (Dabić et al. 2020, 34). This is because local entrepreneurs are important contributors to the regional economy compared to migrants or refugees (Aldén et al. 2022), particularly when they pursue aggressive economic growth (Morris et al. 2018). Therefore, because the refugee event relates differently to the strengths of the three main founder

social identities, which, in turn, determine the corresponding new ventures' orientation (Fauchart and Gruber 2011), regional economic development will likely be affected by strongly inducing entrepreneurs to dedicate their efforts to developing the local communities (Lumpkin, Bacq, and Pidduck 2018). These insights may also be applicable to other grand challenges, such as inequality and pandemics, and their influence on the local social environment (Voegtlin et al. 2022).

Second, even though scholars have started to differentiate between various types of entrepreneurial identities (see Gruber and MacMillan 2017; Powell and Baker 2017; Morris et al. 2018) and we can observe a blossoming stream of research particularly focusing on Darwinian, Communitarian, and Missionary founder social identities (Fauchart and Gruber 2011; Sieger et al. 2016; Brändle et al. 2018), we still lack critical knowledge about how those founder social identities relate to a macro-level event (Gruber and MacMillan 2017; Leitch and Harrison 2016). We address this crucial gap by exploring and interpreting how an exogenous event, i.e. the 2015 European refugee event, relates to the strengths of the three founder social identities of local entrepreneurs. Here, by building our interpretation on two main mechanisms related to the salience of different identity dimensions and the opportunities provided by the refugee event, we provide two novel core insights to the literature. First, our empirical findings and theorizing contrast with previous work that seems to expect a convergent effect on different identities, meaning that the different identities would all respond to a societal event in a similar way (Powell and Baker 2017; Sluss and Ashforth 2008). Our empirical findings and theorizing challenge this view as we reveal that there is no uniform effect. Rather, *the strengths of the different founder social identities are affected in divergent ways*, such that the same refugee event is only significantly related to the strength of the Communitarian founder social identity (but not to the strength of the Darwinian and Missionary founder social identity, respectively). This implies that future studies should pay particular and nuanced attention to the determinants of each founder social identity in order to better understand how different types of entrepreneurial behaviors and outcomes are ultimately affected.

Furthermore, an important contribution is that we delve deeper into the relationship between the societal event and founder social identities by identifying corresponding *boundary conditions* (i.e. past exposure to foreign migrants in individuals' home countries) and *meso-level links* (i.e. industry sectors). These insights reveal a multi-level framework connecting a macro-level event (i.e. a trigger event), the past social environment (i.e. the previous migration level as a boundary condition), the current meso-level environment (e.g. the human health and social work industry, likely through new opportunities that are induced by the triggering refugee event), and individual-level founder social identity. As such, we enhance the theorization of founder social identities by providing a *dynamic perspective*, including temporal, socio-cognitive, and cross-country considerations (Radu-Lefebvre et al. 2021). On a more general level, our study thus supports previous studies in showing that external events, including grand challenges, are indeed related to social identities of individuals, implying that social identities are malleable (Alvesson and Willmott 2002; Ashforth, Schinoff, and Rogers 2016; Burke 1991).

Taken together, our study constitutes a major step forward in enhancing our knowledge about how founder social identities relate to macro-level events and hopefully inspires corresponding future research. For instance, while our study highlights the relevance of societal-level trigger events, founder social identities may also change through a long-term process because of gradual changes in people's external environment (2017; Stets and Burke 2000). It would thus be interesting to examine the joint effects of long-term developments on the one hand and sudden events on the other hand across different contexts. Examples of longitudinal factors could be economic cycles (Gruber and MacMillan 2017) or climate change (Wiklund, Wright, and Zahra 2019). As such, future studies in that direction should generally be time- and context-sensitive.

The third major contribution relates to the general entrepreneurship literature. Because new firms become important reflections of the meanings that founders associate with entrepreneurship, founder social identities are crucial in shaping firm creation processes and relevant outcomes (Cardon et al. 2009; Fauchart and Gruber 2011; Peterson and Jun 2009). Put differently, founder

social identities will affect new venture creation and the related outcomes for society. With our research, we thus shed a novel and nuanced light on the direct and indirect *determinants of different entrepreneurial phenomena*. This should allow future research to better investigate the link between a grand challenge, founder social identities, and the impact of their ventures on various stakeholders, society, and the economy as a whole (Peterson and Jun 2009). For instance, when examining the longitudinal impact of a grand challenge on entrepreneurial outcomes and a region as such, studies may consider founder social identities as key mediating factors. Also, a particularly insightful and interesting finding of our study is that, in contrast to what one might likely expect, *a refugee event is not necessarily related to the strength of Missionary founder social identities* among entrepreneurs in the host country. This signals that Missionary founders may not be as sensitive to one single, socially impactful event as the extant literature on social entrepreneurship would suggest (Dacin, Dacin, and Tracey 2011; Nason, Bacq, and Gras 2018; Brieger et al. 2021; Parul et al. 2020). On a general level, scholars are aware that entrepreneurship is a complex endeavour that requires multi-level examination (Shepherd 2011; Dabić et al. 2020). We support this notion and hope our research will inspire scholars to apply a multi-level perspective to investigate the relationships between a societal-level event, the meso-level (industry) environment, individual-level founder social identities, and various other entrepreneurial outcomes, such as individuals' entry decision, firm-level growth and performance, or societal-level impact.

### **Implications for practice**

Our insights may provide valuable input for policy makers, local entrepreneurs, and refugees. Policy makers could be assisted in designing policies to encourage entrepreneurship. This is because the strengths of different founder social identities affect the orientations and outcomes of the new ventures of the respective entrepreneurs in the host country (Fauchart and Gruber 2011). Accordingly, the findings of our study imply that a refugee event might trigger Communitarian entrepreneurs' community-oriented ventures, but not necessarily 'Darwinian' ventures that pursue aggressive economic growth (Morris et al. 2018; Sieger et al. 2016) or 'Missionary' ventures that are society oriented. Therefore, our study allows policy makers to anticipate corresponding developments and implications for the region, that is, to regard a refugee event as an opportunity that can be exploited in order to enhance the development of the local community. Specifically, policy makers might expect local entrepreneurs to show more supportive behaviors towards their community following such a grand challenge. Consequently, they might need to take other measures to further support growth-oriented or society-oriented ventures, which, in turn, will affect the economic development of regions and countries. As such, policy makers need to avoid the risks of polarizing local citizens' behaviors following such an event (van der Brug and Harteveld 2021). On a general level, the implication thus is that policy makers might want to study how societal events affect entrepreneurship before designing policy instruments that incentivize certain forms of entrepreneurship. When doing so, policy makers need to be aware that the development of different forms of entrepreneurship in a country may be a more long-term process that is also contingent on other events, such as economic cycles or climate change.

Local entrepreneurs may use our findings to infer how the refugee event as a grand challenge might affect them differently by being positively related to the strength of particular founder social identities. This creates important self-awareness, which, in turn, is useful for individual founders, helping them to become more sensitive to environmental changes and anticipate related changes in entrepreneurial thinking and behavior. In addition, our findings can also provide behavioral guidance for local entrepreneurs. For instance, Communitarian entrepreneurs may be expected to demonstrate more supportive behaviors towards their region or specific industries (such as the health industry) than other entrepreneurs. Furthermore, our findings allow local entrepreneurs to anticipate what types of new ventures will emerge in the future as a result of the refugee event (e.g.

more Communitarian-focused new ventures). They can then better evaluate whether or not their own new venture should also go in that direction.

Refugees who seek an entrepreneurial career in the host country themselves may use our findings to make more informed decisions about the direction and positioning of their new venture (Backman, Lopez, and Rowe 2021). This is because their arrival may motivate specific types of local entrepreneurship more than others. As a result, they might perceive different entrepreneurial opportunities in the host country, which may help them determine whether their new venture should be a for-profit business, a community-oriented business, or a social business.

### ***Limitations and additional future research avenues***

First, limitations related to the GUESSS dataset need to be mentioned. One is the low continuity of the same respondents across survey waves, preventing us from conducting a robust within-subject analysis. Put differently, due to the lack of a sufficient number of respondents, we could not assess the effect of the refugee event on the change in the strength of a specific founder social identity in the same individual in our main analysis. However, we addressed this issue in five ways: (1) by focusing on nascent entrepreneurs whose founder social identities are still malleable, i.e. easily affected by a societal event; (2) by examining an exogenous event in 2015, one year before our founder social identities were measured (in 2016); (3) by using the change of the average numbers of asylum applicants over three years before and after the refugee event, rather than using a one-year interval, to examine the long-term relationship between the refugee event and founder social identities in a given country; (4) by including the average of the different founder social identities of the previous survey wave (2013/14) in each country as an additional control variable in our robustness tests; and (5) by performing an additional analysis on a (small) sample of two-wave respondents, with encouraging results. Still, future studies that use longitudinal data would be valuable to ascertain the causal change in founder social identities on the individual level across time. Put differently, future studies may build on our findings to assess the impact on the actual change in the strength of a founder social identity. For instance, longitudinal surveys (Dabić et al. 2020) or ethnographic work (Desai, Naudé, and Stel 2021) may track the long-term social dynamic between local citizens and refugees and examine how such a societal-level event relates to the local entrepreneurial landscape over time. Another potential limitation of using GUESSS data is that it consists of student entrepreneurs. While we have very good reasons to believe that this is not necessarily a disadvantage, future studies may still seek to validate our findings in samples of the general adult population in the host countries.

Second, the 2015 European refugee event is one type of grand challenge. It is relevant to our core construct (i.e. founder social identities) because its impact on the societal structure in host countries may strengthen ingroup versus outgroup distinctions for Communitarian entrepreneurs. In particular, the differences between ethnicity and nationality are commonly examined in social identity studies (Nason, Bacq, and Gras 2018). However, we encourage future research to examine if our findings are generalizable across different social settings by studying other grand challenges, such as political populism (Wiklund, Wright, and Zahra 2019), different natural catastrophes (Nelson and Lima 2020), or other refugee events. The 2022 Russian invasion of Ukraine has caused a wave of Ukrainian refugees fleeing to neighbouring countries. As Ukraine is a European country, locally and culturally close to the European host countries receiving these refugees, they may not be perceived as an outgroup, and thus their effects on local entrepreneurs might differ.

Third, although we controlled for contextual influences (e.g. for European regions in the main analysis and for university-level effects in our robustness test), there may be other relevant contextual factors. For instance, the communities where the founders are embedded may have different ingroup identities and norms (Lumpkin, Bacq, and Pidduck 2018), potentially affecting how founders respond to the rising number of outgroup members. Another promising meso-level factor is the

entrepreneurial team. Founders often create their ventures in teams and learn from each other to define their social identities (Shepherd et al. 2019; Leitch and Harrison 2016).

Finally, while we have examined the strength of the different founder social identities separately, future research could delve deeper into the topic of founder social identities by investigating 'pure' identities or 'hybrid' identities (Sieger et al. 2016). This could be interesting because, for instance, entrepreneurs with a hybrid 'Darwinian-Missionary' founder social identity may particularly struggle with different motivations and beliefs that result in a more complex reaction to the external environment (Sieger et al. 2016).

Overall, we hope that future research and policy makers will build on our findings (and non-findings) to further investigate the impact of grand challenges on entrepreneurship and its related outcomes.

## Notes

1. *Refugees* are immigrants who flee their home countries due to perilous local situations (Klein and Amis 2021). *Migrants* refer to a broader group of immigrants including refugees and those who strive for a better economic life in the host country (Guercini et al. 2017). While the terms have often been used interchangeably (Klein and Amis (2021)), we consistently use the term 'refugee' and refer to 'migrants' only when we analyse our moderator, meaning when we assess the influence of existing immigrants in the host country prior to the 2015 refugee events in Europe.
2. We assume that nascent entrepreneurs already have some initial founder social identities before the refugee event (Sieger, Fueglistaller, and Zellweger 2016). Our study thus explores the relationship between the refugee event and founder social identities of nascent entrepreneurs after the event, rather than the formation of initial founder social identities as such.
3. GUESSS (Global University Entrepreneurial Spirit Students' Survey) investigates student entrepreneurship across the world, see [www.guesssurvey.org](http://www.guesssurvey.org).
4. Asylum applicants refer to those who are seeking refugee status (Gale 2004) and is a more appropriate reflection of the refugee challenge than the refugee number itself because refugee status takes a long time to be determined (Hultin and Introna 2019).
5. Identity theory includes three theoretical lenses to examine an individual's identity, depending on how one defines the meaning of identity: *social identity* depends on one's belonging to a social group (e.g. being native or immigrant); *role identity* is based on the one's expected role in society (e.g. being a father or an entrepreneur); and *personal identity* relies on personal attributes (e.g. being honest or friendly) (Stets and Burke 2000; Stets et al. 2005). Compared to social identity theory, personal identity focuses on intrapersonal attributes and goals, while role identity is grounded in role-related views embedded in groups (Brewer and Gardner 1996). However, these two lenses fail to systematically capture the other-oriented motivation and activities of entrepreneurs (Pan, Gruber, and Binder 2019). Thus, we find social identity theory (focusing on social relationships) more suitable than the other two lenses for our purposes, as our research question examines the impact of the refugee challenge on local entrepreneurs' social relationship and, in turn, self-definition.
6. Specifically, the data collection period lasted from March to September 2016, whereby the start and end dates of the data collection varied between the different countries.
7. The sample size is distributed in the following countries: Albania (10), Austria (139), Belgium (37), Croatia (134), Czech Republic (127), England (65), Estonia (85), Finland (47), France (43), Germany (551), Greece (62), Hungary (843), Ireland (46), Italy (204), Lithuania (23), Poland (1,716), Portugal (268), Russia (708), Slovakia (272), Slovenia (90), Spain (482), Sweden (23), Switzerland (111), and Ukraine (10). Detailed descriptive statistics about all included countries in terms of means and standard deviations of founder social identity strengths and asylum numbers are available upon request. To test the representativeness of our sample, we compared several indicators of the GUESSS survey to a similar sample from the Global Entrepreneurship Monitor (GEM) of the same year. We identified three variables that are shared by both datasets: the founder-to-nascent entrepreneur ratio, the attitude towards entrepreneurship, and post-school entrepreneurial education and training. We found no significant differences between the two survey samples, mitigating selection bias concerns.
8. See <http://popstats.unhcr.org/>.
9. See <https://data.worldbank.org/>.
10. From the UN Global Migration Database (UNGMD), which has collected comprehensive data on international migrants every five years since 1990; see <https://esa.un.org/unmigration/>.
11. The 12 dummy variables capture 13 industry sectors: (1) advertising, design, and marketing; (2) architecture and engineering; (3) construction; (4) consulting (HR, law, management, or tax); (5) education and training; (6) financial services; (7) human health and social work activities; (8) information technology and communication;

- (9) manufacturing; (10) tourism and leisure; (11) trade (wholesale and retail); (12) other services (e.g. transportation); and (13) other.
12. We manually reviewed the international newspapers reporting the election results of the sampled countries in the targeted period through the Factiva database. The variable was coded '1' if the political party to which the head of the state of a given country belonged changed after an election between 2015 and 2016 or the majority party of the parliament changed after an election in the same period. If there was no change or no election in the same period, the variable was coded '0'.
  13. We assume that our measures of governmental change and European regions have captured potential media effects of reporting about the refugee event since prior studies have shown that media coverage tends to focus on governments and their opposing parties in addressing the issues; also, it varies between Western and Eastern countries (Georgiou and Zaborowski 2017). Additionally, our Google Trend analysis did not report a significant variation of media awareness across the sample countries as the refugee topic experienced a consistent peak of internet attention in most of the sampled countries in September 2015.
  14. We also tested a larger set of control variables including (1) individual level: *study level*, *study field*, *university environment*, *study influence* and (2) country level: *country commonly found in the migration route*, *fragile state index*, *human development index*, *power distance* (Hofstede), *masculinity* (Hofstede), *liberalizing trade interventions*, and *harmful trade interventions*. Our findings did not change direction. Since the VIF exceeded the thresholds when including these additional controls, we excluded them in our main analyses. We also tested a smaller set of country-level controls (including only GDPPC, unemployment rates, European regions) in addition to the four individual level variables; the results were consistent with those of the main analysis.
  15. In the results tables, the 'LR test vs. linear model' tested whether the multi-level approach is significantly better suited than a linear model. This is confirmed in all models ( $p$  is always  $<.05$ ).
  16. Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Ecuador, El Salvador, Japan, Kazakhstan, Malaysia, Mexico, Pakistan, Panama, Peru, South Korea, Uruguay, and the U.S.
  17. Austria, Belgium, England, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Russia, Slovenia, Spain, and Switzerland.
  18. The detailed results of all the robustness checks and further analyses are available from the authors upon request.

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