

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

# Technological Forecasting & Social Change

journal homepage: [www.elsevier.com/locate/techfore](http://www.elsevier.com/locate/techfore)

## Early bird or early worm? First-mover (dis)advantages and the success of web-based social enterprises

Jantje Halberstadt<sup>a</sup>, Sophia Kollhoff<sup>a</sup>, Sascha Kraus<sup>b,d</sup>, Amandeep Dhir<sup>c,e,f,\*</sup>

<sup>a</sup> University of Vechta, Business and Ethics, Faculty of Education and Social Sciences, 49377 Vechta, Germany

<sup>b</sup> Free University of Bozen-Bolzano, Department of Economics and Management, Piazza Università 1, 39100 Bolzano, Italy

<sup>c</sup> Department of Management, School of Business & Law, University of Agder, Kristiansand, Norway

<sup>d</sup> University of Johannesburg, Department of Business Management, Johannesburg, South Africa

<sup>e</sup> Norwegian School of Hotel Management, Faculty of Social Sciences, Stavanger, Norway

<sup>f</sup> Optentia Research Focus Area, North-West University, Vanderbijlpark, South Africa

### ARTICLE INFO

#### Keywords:

Web-based social business  
Social entrepreneurship  
First mover  
Early followers

### ABSTRACT

Achieving the optimal market entry time is of immense strategic importance for entrepreneurs, especially in online markets, where web-based social entrepreneurial activity continues to grow. This raises the question of whether first-mover market entry actually pays off or if market entry as a (later) follower might be the better option. First-mover research has so far not adequately answered this question. Our work contributes to closing this gap by transferring first-mover theory to web-based social enterprises. We expand upon first-mover theory by reflecting on the winner-take-all hypothesis to better illuminate the mechanisms of market structure development and entry decisions. Our empirical data was gathered on various types of web-based social enterprise models in a sample of 12 national markets. Our results show that first-mover advantages are available not only to those who are the very first to market but also to early followers. In addition, the speed of market entry matters. Our work also indicates, however, that first-mover advantages should not be overestimated; market structures and network effects may explain varying results. Furthermore, both business models studied exhibited high market concentration at a mature stage, implying that the winner, although perhaps not taking *all*, does take *most*.

### 1. Introduction

Social entrepreneurship has evolved into a growing research domain of key importance for academia and practice (Dwivedi and Weerawardena, 2018; Kannampuzha and Hockerts, 2019). While every entrepreneurial activity has a social function, and entrepreneurs are requested to manage their companies in a socially effective and responsible way (Bygrave and Minniti, 2000; İyigün, 2015), social entrepreneurs directly address social issues as the core aim of their work (Bedi and Yadav, 2019; Kraus et al., 2017; Mair and Noboa, 2006). Social entrepreneurs typically act as agents of change by working to solve societal problems. Their work consists of accessing resources and opportunities, developing skills and building cohesive networks (Goduscheit et al., 2021). This means that social entrepreneurship differs from business entrepreneurship because the former's primary mission is

generating a positive social impact, while the latter's is generating maximum profit (Bedi and Yadav, 2019; Kraus et al., 2017; Mair and Noboa, 2006). According to Tomás et al. (2019), social entrepreneurs do not primarily strive for private economic benefit; rather, they act as catalysts for social change. Nevertheless, economic aspects do not need to be separated from the creation of societal value. In fact, economic considerations are central in entrepreneurial activity (Schramm, 2011). Hence, social entrepreneurship merges the pursuit of societal impact with the economic tools and techniques of for-profit companies (Urbano et al., 2010). Not to be ignored is the critical challenge for social enterprises to raise the financial resources required to fulfil their social mission (Do Adro et al., 2021). Including financial performance and social impact in strategic decision-making is thus critical (Gali et al., 2020).

However, earning money is often seen as a means to an end—in other

\* Corresponding author.

E-mail addresses: [jantje.halberstadt@uni-vechta.de](mailto:jantje.halberstadt@uni-vechta.de) (J. Halberstadt), [sophia.kollhoff@uni-vechta.de](mailto:sophia.kollhoff@uni-vechta.de) (S. Kollhoff), [sascha.kraus@zfke.de](mailto:sascha.kraus@zfke.de) (S. Kraus), [amandeep.dhir@uia.no](mailto:amandeep.dhir@uia.no) (A. Dhir).

<https://doi.org/10.1016/j.techfore.2022.121784>

Received 19 September 2021; Received in revised form 24 April 2022; Accepted 31 May 2022

Available online 9 June 2022

0040-1625/© 2022 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

words, as a means for serving society. Social entrepreneurship activities can be for-profit or nonprofit. To be considered social *entrepreneurial* activities, social activities that are nonprofit must have a certain entrepreneurial income strategy (Halberstadt et al., 2020). According to most work, social entrepreneurs must generate sufficient income on their own, e.g. by selling products or services, to cover the majority of their costs (Defourny and Nyssens, 2006; Halberstadt and Hölzner, 2018). To be considered *social* entrepreneurs, those working for-profit must not distribute their profits to shareholders but reinvest them in the future/additional generation of social benefits (Bacq and Janssen, 2011; Spiegler and Halberstadt, 2018). In the case of (social) investments, the criterion for still being defined as social entrepreneurship is that the focus stays on generating societal impact instead of making money. There are different ways of assessing if the focus of entrepreneurial endeavors is on societal improvement or personal wealth creation—with relevance for research as well as practice, e.g., when politics supports social ventures. In addition, social enterprise models require legitimacy from their audiences, especially their customers (Bouncken and Tiberius, 2021). The involvement of these stakeholders enhances this social legitimacy and facilitates the management of social problems (Ceasay et al., 2021). Gupta et al. (2020, p. 209) explain ‘[A]s defined within the larger system, entrepreneurship, opportunity and philanthropy generate a sustainable cycle for social as well as economic, institutional development.’ This is in line with Robinson (2006, p. 95), who defines ‘[...] social entrepreneurship as a process that includes the identification of a specific social problem and a specific solution [...] to address it; the evaluation of the social impact, the business model and the sustainability of the venture; and the creation of a social mission-oriented for-profit or a business-oriented non-profit entity that pursues the double (or triple) bottom line.’

This simultaneous pursuit of economic, social and environmental goals through entrepreneurial ventures has generated significant international interest in social entrepreneurship as a human response to social and environmental problems (Noruzi et al., 2010). Consequently, social entrepreneurship is closely related to sustainability entrepreneurship, sustainable entrepreneurship and sustainability-related entrepreneurship (Halberstadt and Hölzner, 2018; Konys, 2019; Terán-Yépez et al., 2020). While some scholars reduce sustainability to ecological sustainability (Koe et al., 2015; Moya-Clemente et al., 2020), most authors employ a more holistic view on sustainability entrepreneurship. In the later view, entrepreneurial activity (economic perspective) aims to generate a positive social and/or ecological impact (Parrish and Foxon, 2006; Schaltegger and Wagner, 2011). Social and ecological consequences are often interrelated, however, and this can hinder efforts to clearly distinguishing between social and ecological entrepreneurship. Therefore, sustainability or sustainable entrepreneurship can be used as an umbrella term for all social entrepreneurial activities. According to Terán-Yépez et al. (2020), sustainable entrepreneurship leads a cluster that includes other keywords, such as social entrepreneurship, environmental entrepreneurship, sustainable business and entrepreneurial orientation. They state that this cluster has formed based on the principal theories related to social entrepreneurship.

At the same time, technological innovations play an increasing role in this area, also contributing to sustainable development (Huang et al., 2021; Guo et al., 2018; Morrar et al., 2017). The continuous development of information and communication technologies (ICT) is particularly apparent. It is, moreover, crucial for solving social and ecological problems and thereby benefitting society (Majchrzak et al., 2016; Van Rensburg et al., 2008). First, innovative ICT can be used to support social entrepreneurial activities. Innovative technologies, such as social media analytics, big data or blockchain, have the potential to increase the financial and operational sustainability of social enterprises (Soni et al., 2021). For example, ICT allows social entrepreneurs to connect with more people and share information more quickly and readily (Fraizer and Madjidi, 2011). ICT can also improve social entrepreneurs’

marketing strategies by enabling them to include social media channels and increase their online presence (Bonomi et al., 2017; El-Den et al., 2017).

Second, ICT can also be the basis of innovations developed by social entrepreneurs. Some work shows how social entrepreneurs contribute to the development of technological innovations—for example, in the fields of renewable energy, social welfare and healthcare (Gerli et al., 2021; Surie, 2017). In addition, social entrepreneurial business model innovation itself can be built on ICT. By revolutionising the economic landscape, the Internet has also laid the foundation for the development of social enterprise model innovations. Current prominent examples of web-based social enterprises include crowdfunding or sharing platforms (Rey-Martí et al., 2016; Vaska et al., 2021). Although these web-based social enterprise models continually emerge, they have thus far rarely been the subject of scientific debate (Gregori and Holzmann, 2020).

Thus, the extant literature requires additional research to understand the emergence and successful diffusion of web-based business models, especially for web-based social enterprises. Because the diffusion of innovations (especially social innovations) in a market often requires institutional change—including a change of values, work on social entrepreneurship is often closely related to institutional entrepreneurship (Tiberius et al., 2020). However, learning which factors positively impact success is crucial. Wang and Lestari (2013), for instance, identify the time of market entry as a key success factor by examining the relative benefits and drawbacks of early market entry by so-called ‘first movers’ and later market entry by ‘followers’. First movers create new markets by the time of their market entry, while followers enter existing markets (Robinson and Fornell, 1985); both strategies have certain advantages and disadvantages. In entrepreneurship theory, strong empirical and theoretical evidence supports the theory of first-mover advantages (Boulding and Christen, 2003; Gomez et al., 2016). However, other work suggests no relationship—or at least a limited one—between the time of market entry and any resulting long-term competitive advantages (Lieberman and Montgomery, 2013; Varadarajan et al., 2007). Studies point at differences between business models, which helps to explain the varying results regarding the first-mover hypothesis (e.g. Remane et al., 2016). Underlining the noticeable differences between social and traditional business entrepreneurship, we aim to analyze whether first-mover advantages exist for social entrepreneurs in Internet markets. The overarching question that results is as follows: *Are web-based social enterprises that enter the market earlier (first movers) more successful than later followers?*

To answer this question, we transfer first-mover theory to web-based social enterprises and expand upon it by reflecting on the winner-take-all hypothesis to better understand the mechanisms of market structure development and entry decisions. The following section provides a brief introduction to the first-mover theory, including its possible advantages and disadvantages. Based on the specifics of web-based social enterprises, we then derive our first-mover hypotheses. We add thoughts on market structure development and winner-take-all markets where a single player or only a small handful of players (the first mover[s]?) take most of the market share. We then present the results of a quantitative study based on a sample of two social enterprise models in 12 national markets with 274 cases. Conducting OLS regression analyses delivers results on the first-mover question, while market structure comparisons offer insights on the existence of winner-take-all developments. Based on the results of our quantitative research, we derive implications for future research and practice. Our study is the first to connect the time of market entry with the success of web-based social enterprises. It thus contributes to research at the intersection of sustainability, ICT and innovation as well as the management and entrepreneurship literature.

## 2. Theoretical framework and hypotheses

### 2.1. First-mover (dis)advantages on the Internet

Analogous to the notion that ‘the early bird catches the worm’, existing first-mover research offers numerous arguments that early market entry offers significant advantages, especially for web-based businesses. First movers, for example, can gain a head start in terms of experience, while followers cannot easily catch up or assume technological leadership (Cleff and Rennings, 2012; Lieberman and Montgomery, 1988; Varadarajan et al., 2007). In addition, the variable costs for the production of digital goods are quite low, often eliminating storage and transport expenses (Bakos and Brynjolfsson, 1999; Shapiro and Varian, 1999). Pioneers can, therefore, particularly benefit from fixed cost degression through economies of scale (Markides and Sosa, 2013; Lieberman and Montgomery, 1988; Lambkin, 1992). Furthermore, the more users an offer attracts, the better the fixed costs can be distributed. In addition, asymmetric marketing can create a positive image with (potential) customers and increase brand awareness and trust. This is considered a critical success factor for both local and web-based business models (Cottrell and Sick, 2002; Ho et al., 2015; Lieberman, 2007). Within Internet markets, in particular, a head start in search engine optimization is likely to provide a key advantage. In addition, although geographic positioning likely plays a subordinate role for web-based offerings, first movers are best positioned to secure a business name and certain domains.

Other advantages include the appropriation of scarce resources (Lieberman, 2007; Rajgopal et al., 2003). Depending on the proportion of a product’s physical components, various resources can be considered in terms of first-mover advantages. In the area of human resources, the early retention of competent employees can also promote success. Path dependencies come into play as well (Liebowitz and Margolis, 1994; North, 1990; Schreyögg et al., 2003). These can also (and especially) apply to Internet business models if users become accustomed to the initial offer and maintain their relationship with the original provider in the long term—even if later alternatives from other suppliers are superior according to objective criteria. Although it is relatively easy for customers to switch providers in digital markets (Porter, 2001), first movers can benefit from the switchover costs users incur, which may encourage them to remain with their current provider (Barney, 1997).

Furthermore, the type of financing may play a role. In the area of (for-profit) online business models, venture capital funding matters. For online start-ups, the position of pioneers may better equip them to raise venture capital due to the innovativeness of the business idea. At the same time, the value of obtaining venture capital is greater for first-mover companies. This is because as innovators, they are likely to face a wider set of challenges on many fronts, which venture capitalists may be able to support with expertise. For example, venture capitalists might offer management resources to enable first movers to understand new technologies and markets, identify promising start-ups, and secure funding (Davila et al., 2003; Hellmann and Puri, 2000).

In contrast to the above adage and evidence, some research suggests that the ‘the early worm gets eaten by the bird’. In other words, later market entry may be a better business decision. First-mover disadvantages become advantages for followers in some cases. A key factor here includes reduced market uncertainty. The high number of failed Internet start-ups (Razi et al., 2004; Remenyi et al., 2004) makes digital markets appear particularly volatile. Thus, anticipating which business models will work and which will not is challenging (Liang et al., 2009; Suarez and Lanzolla, 2005). Unlike first movers, followers have the advantage of implementing an already-proven business model for which there is, at least in principle, an existing market. First movers typically shoulder the risk of a business failure, while followers benefit by free-riding on first movers’ investments (Kodama et al., 2016; Markides and Sosa, 2013). This free-rider effect can be another significant advantage for followers, allowing them to save resources and run their businesses more

efficiently. Here, entry barriers for followers can be lowered, even allowing them to outsmart their first-mover counterparts. Rather than lagging behind and focusing solely on catching up, followers can capitalise on their individual strengths and even overtake first movers (Deng and Wang, 2016). Upon entering the market, moreover, followers entering the market at a later stage can avoid so-called ‘teething troubles’ by observing and learning from existing businesses. Leapfrogging can also be particularly relevant for web-based offerings. This occurs when individual development stages are skipped (Kranz and Picot, 2016)—for example, when a technology changes or technological innovation occurs. Thus, followers may be able to directly enter a market using the latest technology, while first movers may still be operating with older technology. Followers, in this case, can enjoy developmental and/or cost advantages over first movers. Finally, although first movers are the first to ask for (financial) support and expertise, they may also encounter greater difficulties in attracting investors or supporters. This may be due to a lack of accountability at the early stages and/or the difficulty of understanding products and services that are new to the market (Hellmann and Puri, 2000).

As the above discussion reveals, various theoretical arguments favor both first movers and followers. Empirical studies regarding early market entry’s impact on success likewise fail to deliver consistent results (Chang et al., 2015; Robinson et al., 1994). Nevertheless, a number of studies do confirm the first-mover hypothesis, stressing the importance of early market entry (Boulding and Christen, 2003; Lieberman and Montgomery, 2013). Some meta-work even asserts that most empirical studies offer significant support for the positive influence of early market entry on a firm’s performance (Gomez et al., 2016). Other studies similarly support the notion that early market entry makes sense. Zhao et al. (2020), for example, analyze the impact of experiences and networks on market entry decisions in strategic entrepreneurship, which integrates both opportunity- and advantage-seeking activities. The underlying assumption here is that early market entry is promising.

However, these results appear to depend on various factors, such as market structures, network effects or industry types. As Lieberman and Montgomery (2013, p. 320) explain, ‘Advantages to early movers often exist but are by no means inevitable’ It thus remains unclear whether the conditions of social enterprise markets strengthen or weaken possible first-mover advantages.

### 2.2. The relevance of market entry barriers and time of market entry for web-based social enterprises

A common definition of social entrepreneurship is still lacking, and this affects the terms and concepts associated with it (Choi and Majumdar, 2014; Dacin and Matear, 2010). However, most authors agree on one core criterion: The main focus of entrepreneurial activity must lie in solving societal problems and creating social value (Bacq and Janssen, 2011; Halberstadt and Hölzner, 2018). Earning money and generating profits are among the vehicles for achieving these goals (Spiegler and Halberstadt, 2018). According to Bacq and Janssen (2011, p. 378), ‘[Social entrepreneurs’] ideas are limited by their mission; they see profit as a means in people’s service that has to be reinvested in future profit rather than an end to be distributed to shareholders’.

Even if having a social impact is the basis of social entrepreneurship and a priority over making a profit, it is unclear whether social entrepreneurs should and do establish market entry barriers. With the key element of social entrepreneurship in mind, social entrepreneurs ought to share as much information as possible regarding their innovative products, services and business model ideas. In this way, they can contribute to the rapid diffusion of their concepts and thereby maximize the overall positive sustainability/social effects. This sharing enables followers to copy tested solutions. When social first movers share their experiences, assist other players and provide them with access to relevant resources, followers are able to operate under comparable or even superior preconditions. Thus, they may benefit from existing structures

and networks and avoid early mistakes. This counteracts the notion that first movers aim to build market entry barriers or maximize their own advantages. Rather, from this perspective, first movers generate advantages for followers. At the very least, if social entrepreneurs interact more cooperatively than do business entrepreneurs, these efforts may reduce the impact of early market entry. This may be particularly true for web-based business models because in that context, the Internet facilitates information sharing and the comparison of concepts.

Thus, on the one hand, when looking at the core of social entrepreneurial endeavors, cooperative behavior would be most expected, leading to low market entry barriers with reduced advantages for first movers. Follower advantages then are also likely to be more pronounced in social enterprise markets. Followers may profit from reduced risk by observing and possibly adopting the proven solutions generated by first movers. The more socially first movers disseminate information, the easier it becomes for later entrants to leapfrog as described above or to free-ride on first movers' investments.

With this being said, however, this information would then be available to everyone—which means that followers then might have to develop other competitive advantages to attract users and customers. The question here thus remains: Is entrepreneurial activity (even social entrepreneurial activity) possible without competition? Competition among enterprises has been identified among the most important drivers of performance and development because it stimulates the creation of innovative solutions and offerings (Katane, 2010; Kassalis, 2010). This appears to hold for both business and social entrepreneurship. Indeed, the current literature finds various examples of competitive behavior in social entrepreneurship practice (Dobele and Pietere, 2015; Carraher et al., 2016; Tan, 2004). One explanation for this could be that typical entrepreneurial traits or individual entrepreneurship orientation, such as striving for autonomy and being proactive and competitive (Brandstätter, 2011; Kollmann et al., 2007; Vantilborgh et al., 2015), come into play and dominate social motivations. Another reason for social entrepreneurs' competitive behavior may be found in the ways they secure information within their social enterprise model and in their 'formula for success'. This competition can occur when social entrepreneurs are convinced that their solutions are best and that they/their teams are uniquely suited to implement and lead their development and diffusion. In other words, depending on a social entrepreneur's character, (s)he might desire to maintain control over the business due to a general, strong need for control or an internal locus-of-control personality trait, which exists when people believe that (the success of) an event is contingent upon their own behavior or characteristics (Kaufmann, 1995; van Praag et al., 2004). This can be the case, moreover, without necessarily counteracting the focus on the primary generation of societal benefits.

However, even if entry barriers are lower within social markets and such markets thus appear more attractive to followers at first glance, early market entrants may retain advantages. In fact, early studies offer evidence of first-mover effects even in markets with low entry barriers (Makadok, 1998). Indeed, the key arguments for and against early market entry can be transferred to social enterprise markets. Although pre-emption of critical resources may not necessarily be a strategic move in social entrepreneurship, it may still be advantageous for first movers. For instance, a web-based social enterprise might enter the market early and secure a relevant and easy-to-remember name and website; this advantage, in turn, becomes unavailable to followers. The same is true for building a strong brand and high awareness levels when reaching and obtaining customers. The scarcity of human resources can also play a role for social first movers. Even in social enterprises, the best personnel and managers can only be hired once, and the same applies to key partners, such as venture capitalists (Kaminski et al., 2019). The above explanations regarding advantaged access to financial support can be transferred to the field of social entrepreneurship as well, where placing capital in businesses and funds that generate social and/or environmental impact is termed impact investing (Vecchi et al., 2015).

The same accounts for support from incubators or accelerators and crowdfunding—all of which play an increasing role in fostering social enterprises (Lehner, 2013; Sansone et al., 2020). Early access to these forms of support and money might, in turn, promote self-reinforcing effects (e.g. attracting talent, finding strategic partners, increasing growth rates, etc.) that enable a company to drive home its first-mover advantage.

The most convincing argument in favor of first-mover advantages in (probably) less competitive social markets, however, may be switching costs and lock-in effects. The commitment of users to a social enterprise could turn out to be greater due to emotional connections to an offering that achieves a social and/or ecological impact. Studies here underline the importance of stakeholders' emotional responses in social entrepreneurship (Roundy, 2014). Early entrants enjoy an earlier and longer window in which to (emotionally) attract customers and beneficiaries. Depending on the strength of network effects, the probability that users of an Internet product or service will switch to an alternative decreases with a growing number of additional users (Afuah, 2013; Lieberman, 2007; Parker and van Alstyne, 2005). Thus, if first movers manage to attract a critical number of users, they can create a lock-in effect; in other words, they can keep users loyal to the Internet product or service they are currently consuming. We expect these network effects to be particularly prevalent in social markets. After all, many web-based social enterprise models are founded upon collaboration, e.g. sharing apps or crowdfunding platforms (Medina-Molina et al., 2019; Murillo et al., 2017), which require a critical mass of users.

It remains unclear, however, which effects have a stronger influence on the success of Internet social enterprise models. Because the first-mover hypothesis appears to offer stronger arguments, we formulate the following hypothesis:

**H1.** *Early market entry positively influences the performance of web-based social enterprises.*

### 2.3. Winner-take-all markets

Closely linked to the first-mover question is the assumption of the formation of highly concentrated markets in which a single supplier prevails over the long term. Winner-take-all markets can be defined as those in which one participant or only a few participants attract a majority of the demand volume (Frank and Cook, 2010). In many markets, a single technology prevails in the long run, even if, initially, numerous alternatives were available (Fischbacher and Thöni, 2008). In the extreme case, this results in a monopoly, with an unrivalled winner registering a market share of up to 100 %. Monopolies, however, typically lead to excessive prices, undesirable distributional effects and allocative inefficiencies. Therefore, governments enforce regulations to ensure that markets function properly and that consumers benefit from the efficiencies and productivity that result from effective competition among firms (Baran et al., 2015).

When a first mover enters a market, its market share is 100 % because it is the only company active within the market. Market concentration decreases, however, as additional players enter the market and the market grows (early expansion phase). If first-mover advantages exist, this effect is only limited to an early market phase since successfully operating companies will prevail in the long run, and market concentration rises again accordingly. A kind of snowball effect occurs here, enabling the most successful provider to dominate the market. The winner-take-all hypothesis was derived from this effect in the late 1990s. As Scherer and Ross (1990) note, pure monopolies do not actually form in these kinds of situations. In markets where first-mover advantages exist, however, it is quite common for a clear winner to emerge, with a residual market share distributed among several significantly smaller suppliers. In such a case, the winner-take-all hypothesis can be confirmed with a correspondingly lower market concentration. Nevertheless, as the market matures in network markets, market

concentration is likely to increase over time, with a clear winner ultimately prevailing in the competition for market share.

Assuming that rapid market entry and rapid growth are associated with increased chances of success, some authors connect the winner-take-all hypothesis to first-mover advantages (Coltman et al., 2001; Eisenman, 2007; Lee et al., 2006). This ‘winner’, however, need not be the first mover. Moreover, market concentration appears to depend on the type of market (Glick and Campbell, 2007). In the case of web-based social enterprises, we often find two-sided or multi-sided markets, such as selling, sharing or funding platforms. Here, two (or more) groups of agents interact with one another via an online platform, with the value of participating in the network for agents in one group depending on the number of participants in the other group (Lacan and Desmet, 2017; Sun and Tse, 2007). In such situations, market concentration seems to vary. According to Sun and Tse (2007, p. 16), ‘An interesting phenomenon in two-sided markets is that in some of them, the winner seems to take the entire market, whereas in other markets, multiple networks can co-exist and share the market.’ Discussing Internet business models and sharing platforms in particular, Wirtz et al. (2019) state that many of these markets are perceived as winner-take-all markets (Akbar and Tracogna, 2018).

However, current examples show that rivalry among competitors in sharing economy can be high leading to several players sharing a market. One reason may be that entry barriers to Internet markets tend to be relatively low, with access to service providers being easy (Van Alstyne et al., 2016). Platforms’ competitive advantage is, therefore, less powerful than is widely assumed (Wirtz et al., 2019). Considering the specifics of social enterprises discussed above, this may hold even truer for social entrepreneurs in Internet markets. It can be argued that due to their joint focus on societal impact and tendencies towards more cooperative behavior, market share will be more distributed among various players. Furthermore, monopolies are associated with several negative societal effects, which social entrepreneurs with societal aspirations, in particular, may wish to avoid. Therefore, we do not expect winner-take-all markets with monopoly tendencies in social enterprise markets. These considerations lead to the following hypotheses:

**H2a.** *In web-based social enterprise markets, market shares are distributed among a large number of companies.*

**H2b.** *Even if first-mover advantages exist, web-based social enterprise markets do not turn out to be winner-take-all markets.*

### 3. Methods

#### 3.1. Method and sample

Based on quantitative data analysis, this paper evaluates the influence of the time of market entry on the performance of web-based social enterprise models. We utilised ordinary least squares (OLS) regression analyses to estimate the relationship between different variables in linear functions. OLS regression is particularly suitable for analysis here, because it allowed the dependent variable ‘market share’ to be explained by several independent variables described in Section 3.2. To analyze the winner-take-all hypotheses, we compared market structures with the help of the Herfindahl–Hirschman Index (HHI), as explained in Section 3.2.

Our sample consists of selected social enterprises in Internet markets. We collected data on web-based social enterprise models in six national markets. In this way, we aimed to include German- and English-speaking countries. Our selection of the corresponding countries’ markets was based on gross domestic product, among other factors. Germany and Switzerland rank among the top 20 German-speaking countries in terms of overall GDP (Statista, 2021). We selected Austria as the third German-speaking country. These three countries form the so-called ‘DACH’ region (D [Germany], A [Austria] and CH [Switzerland]), which is one of the most developed regions in the world (Statista, 2020). Our English-

speaking countries were the UK, the USA and South Africa. The USA has the world’s largest economy by GDP, while the UK is ranked fifth with a GDP of >2.35 trillion dollars (Statista, 2021). At first glance, social rather than economic figures might appear more appropriate for examining social entrepreneurship. However, we chose countries based on their economic power for two reasons. First, economic strength does not mean the absence of social issues. In fact, myriad societal problems and injustices also afflict prosperous countries. These issues, including gender inequality, unfair distribution of wealth and insufficient education systems, may require social entrepreneurial solutions. Second, social entrepreneurial business ideas often target customers from wealthier countries. Our market definition, moreover, is customer-based because customers utilising web offerings are those paying for a product or service and not necessarily the beneficiaries of social entrepreneurial solutions who can be from other countries.

We added South Africa, finally, to include the specific features of an additional continent and more clearly distinguish between national markets. Although, at first glance, the Internet does not appear to have any geographical boundaries, national markets are, in fact, formed online by their country-specific characteristics, such as cultural conditions or language barriers. We thus examined our data by taking into account country-specific markets. For these, we researched two different web-based social enterprises. Accordingly, our research examined 12 markets with a sample of 165 companies. At the national level, this allowed us to analyze a total of 274 cases.

We define social entrepreneurship as entrepreneurial activity targeting societal issues and, as a result, see web-based social enterprises as income-generating organizations whose core activity is online and that aim at the generation of positive societal benefit. We selected sustainable marketplaces (SMP) as an example of a social enterprise model in the so-called trade brokerage category (Lieberman, 2007). Here, the main business offers opportunities for other businesses to supply their goods to customers (B2C2C). An online marketplace operating in the business of trade intermediation can be considered a ‘networking site or application on a gadget that provides online trading facilities from various sources. In the marketplace, application owners or website networks only provide facilities for users to display products sold. In addition, the marketplace owner also provides facilities in the form of bridging online transactions between sellers and buyers’ (Ade et al., 2020, p. 345). In SMP, we considered only those portals that offered trading space for goods that were sustainably produced and/or generate positive societal impact. One example is the platform ‘GoodBuy’. The founders of GoodBuy claim to seek social and ecological value on various levels—for example, by investing in political education as well as neighborhood or refugee projects.<sup>1</sup> Under the main criterion, however, the products offered had to be designed to solve societal problems—for example, by selling products made by underprivileged people or making a donation to a chosen community (typically, but not necessarily, a community in an economically disadvantaged country) following a customer’s purchase. These schemes often operate within the ‘buy-one, give-one’ model (Marquis and Park, 2014; McMullen, 2018). An example is the ‘Ruby Cup’, where every menstruation cup purchased also provides a cup to a person without access to safe period products and finances educational workshops.<sup>2</sup> HEYHO, a social granola manufactory, utilises another approach to create social value. The company operates under a specific hiring philosophy that gives jobs primarily to people with troublesome resumes who would otherwise experience difficulties in the labor market.<sup>3</sup> Because sustainable marketplaces are creating (additional) distribution channels for products or services with social value and are, therefore, associated with generating societal impact via business mechanisms, we consider them to be social

<sup>1</sup> <https://www.goodbuy.eu>.

<sup>2</sup> <https://rubycup.com/>.

<sup>3</sup> <https://goheyho.com/>.

entrepreneurial. However, as stated in the theoretical section, they can also be defined as sustainability entrepreneurship.

In addition, we selected peer-to-peer sharing platforms (PPSP), which are a part of the sharing economy that is currently gaining prominence and generating significant economic impacts on traditional markets and businesses (Reuschl et al., 2021). PPSP are an example of social enterprises that enable private users to connect and exchange goods or services with other private users (B2C2C). By enabling private individuals to swap, give away, lend, rent or co-use common products, PPSP seek to promote these products' extended or more intensive use. Private individuals act either as resource providers ('peer providers') or as consumers ('peer consumers') (Andersson et al., 2013). Peer-to-peer platforms are often considered the core of the new sharing economy because unlike the sharing concepts of commercial providers, they establish markets where previously no market-based exchange relationships existed (Botsman, 2013; EC, 2013; Frenken et al., 2015). In addition, they generate a societal impact by promoting the more efficient use of resources and increased cooperation (Jiang and Tian, 2018; Piscicelli and Vaskelainen, 2018).

Since information on (the existence of) Internet business models should all be available on the Internet, we followed the process below to identify the platforms and their time of market entry. We developed this complex process using a Wayback Machine search to ensure a complete set of data that encompasses all web offerings, including older ones that may no longer exist or are not being used anymore (Fig. 1).

### 3.2. Analytical approach and measures

We used OLS regression analyses to test the first-mover hypothesis. The models included one consistent dependent variable measuring the social enterprises' performance, various first-mover variables as independent variables and additional control variables. To fulfil the assumptions of the OLS regression, the X values had to be fixed and non-random, and the errors had to be uncorrelated random variables with a mean of 0 and constant variance (homoscedasticity) (Hayes and Cai, 2007).

#### 3.2.1. Dependent variable

To measure the dependent variable of success, we calculated na-

tional market shares based on web traffic data. Web traffic is particularly suitable for measuring the performance of sustainability-oriented web-based business models that target both financial and social goals. It is important to note, however, that Internet traffic is not the same as revenue (as a financial measure) or societal impact (as a social measure); therefore, it appears less than optimal for measuring market share. Nevertheless, a close relationship between the relative performance of the business models in this study and their traffic levels can be assumed. Because we only compared business models that were more or less identical, the conversion rates (i.e. the conversion of traffic to revenue and impact) for the social enterprises examined here are likely to be similar. Accordingly, highly frequented sites can be considered more successful than little- or unused ones. We utilised the *Similarweb* database to generate traffic data. Based on the traffic data obtained, we calculated the respective providers' individual market shares as follows:

$$MV_n = \sum_{x=1}^N (S_{nx} * r_x) = \sum_{x=1}^N U_{nx}$$

$$MA_{nx} = \frac{(S_{nx} * r_x)}{\sum_{x=1}^N (S_{nx} * r_x)} = \frac{U_{nx}}{\sum_{x=1}^N U_{nx}} = \frac{U_{nx}}{MV_n}$$

with

$MV_n$  = national market volume

$MA_{nx}$  = national market share website x

$s_{nx}$  = national user share website x in country n

$r_x$  = reach website x

$U_{nx}$  = country-specific user intensity

#### 3.2.2. Independent variable

Acknowledging the possibility that our results could be influenced by the first-mover definition (e.g. Lieberman, 2007; Lieberman and Montgomery, 1988), we controlled for seven different first-mover variables: first in market, order of entry, time to market, time in market, fastest 10 %, fastest 20 % and fastest 30 %. Following Robinson and Min (2002) as well as Urban et al. (1986), we initially defined first movers only as those who were the first to enter a market were initially defined as first-movers (Model 1). We formed dummy variables for first movers and for second and third movers. An additional model based on Carpenter and

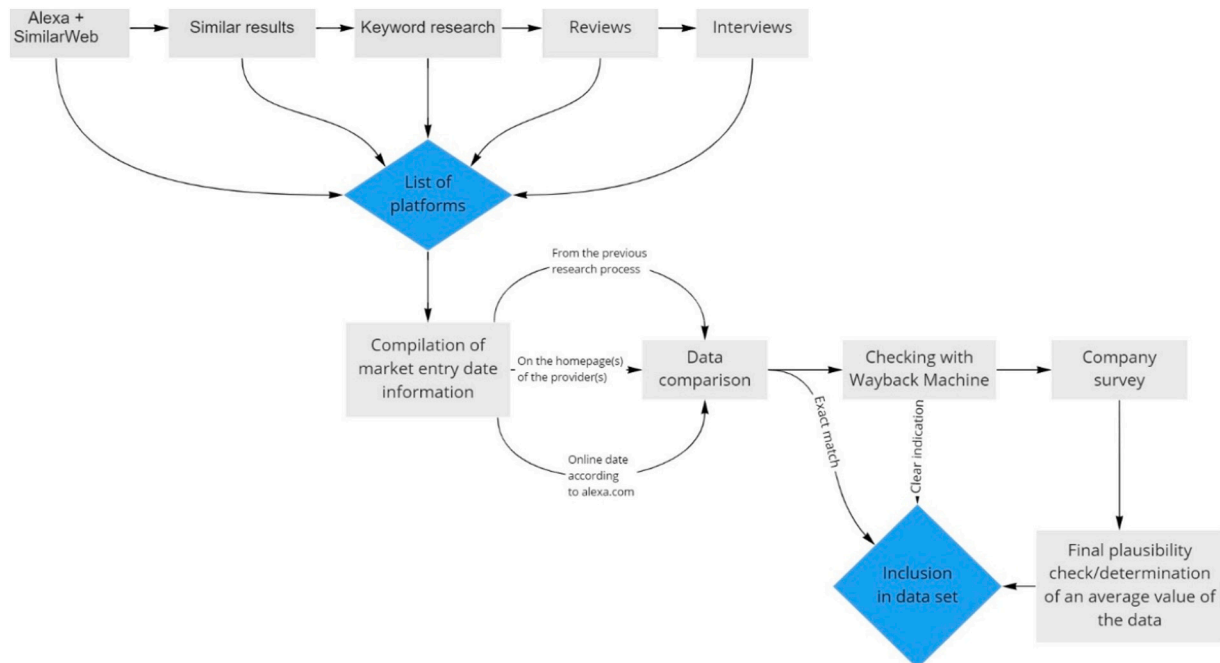


Fig. 1. Research process of the platforms and their market entry data.

Nakamoto (1989) and Kalyanaram and Urban (1992) used the numerical market entry sequence (Model 2) as an alternative variable. Furthermore, the speed of market entry can play a role. Von Hippel (1979, p. 41) explains ‘During the lead time period, an innovating firm, by definition, has a monopoly and is in a position to capture output-embodied innovation benefits by increasing its rate of profit and/or its market share’. To consider this temporal aspect of the speed of market entry, we included adoption time as the variable time to market (Model 3). Time to market was defined as the time span between market emergence (with the national first movers’ time to market as 0) and the market entry of subsequent companies measured in days. In turn, we also included the time in the market (Model 4), which measures the number of days a social enterprise had already been active. Because we lacked information on the markets’ life cycles (i.e. because the markets were still active, no ex-post observation was possible), the market phases could not directly be considered in a model. Instead, on the basis of a broader first-mover understanding, we tested the fastest 10 % (Model 5), 20 % (Model 6) and 30 % (Model 7) as first-mover variables. We referred to these as the fastest X%.

3.2.3. Control variables

To maximize internal validity, we extended the models by including various control variables with the potential to influence the performance of web-based social enterprises. The variable ‘subsidiary’ indicated whether a company was newly founded or an offshoot of an existing company; the variable ‘merger/acquisition’ indicated whether we found any consolidations (leading to formerly different pages being combined after consolidation); the variable ‘sale’ specified whether a company was sold in the period under review; the variable ‘import’ showed whether a business was of international origin and thus imported; finally, the variable ‘domain name quality’ was based on factors evaluating whether the name was easy to remember, generic and indicative of a connection to the business’ core offerings.

3.2.4. Winner-take-all measures

To test the second hypothesis regarding winner-take-all markets, we examined market concentrations using the Herfindahl–Hirschman Index (HHI). Often used to measure concentration, the HHI takes into account both market size (number of firms in the market) and the relative size of firms (market shares) (Brezina et al., 2016). It is calculated as the sum of squared market shares and can take values between  $\frac{1}{N} < HHI \leq 1$  (Chen and Chang, 2010). The following gradation is typically used as a guideline for interpreting HHI values in this context (Constantinos and Theodore, 2019):  $HHI < 0.1$  is considered an unconcentrated market;  $0.1 \leq HHI \leq 0.18$  is considered a moderately concentrated market;  $HHI > 0.18$  is considered a highly concentrated market. In the context of the first-mover question, however, these levels appear to be too low. The winner-take-all hypothesis assumes that in the long run, a single supplier will prevail in the market and will typically then occupy (approximately) the sole monopoly position. In this case, the HHI would be equal to or close to 1. Nonetheless, the number of companies operating in the market, market age, market size and type of market also influence the HHI (Glick and Campbell, 2007) and must be taken into account when interpreting the results.

4. Results

4.1. Descriptive statistics and correlations

Our research examined 12 markets. >500 websites were identified and subjected to a detailed review. Of these, 303 ultimately met the criteria and were included in the initial data set. After further revision—for example, combining merged or purchased offerings and companies operating several websites, 165 companies remained for the final analysis. This number included 44 SMP and 121 PPSP. This resulted

in a total of 274 cases for analysis at the national level. Of these, 74 had an SMP and 200 had a PPSP business model. Table 1 shows the average market sizes and market shares as well as the respective minimum and maximum values.

Table 2 reveals, while the PPSP markets are older (>24 years on average, while the mean SMP market is approximately 17 years of age), they are also more dynamic. While almost 6.5 years of time elapsed between the market entry of the first and second movers among the SMP, the second mover among the PPSP entered the market only 250 days after the first mover. Other followers also entered the national markets faster in the PPSP market than in the SMP market. In the SMP market, more than eight years passed before four companies had entered, while it took more than three years for four players to share the PPSP market. In other words, the early movers were all in business for years without competitors or with only a few competitors.

Pearson correlation analyses were performed to rule out perfect multicollinearity as an assumption of the OLS regression and to make first suppositions regarding the first-mover hypothesis. Table 3 shows the variable means and their correlations in the SMP and PPSP data sets. Not surprisingly, significant correlations between the first-mover variables were particularly frequent. However, this did not affect the regression quality because these variables were used in separate models. In most cases, correlations did not appear between the independent and control variables. Exceptions here included the correlations between ‘domain name’ and selected first-mover variables in the SMP markets. Because significant correlations between the independent variables indicated multicollinearity, we performed a collinearity diagnosis. The variance inflation factor (VIF value) was below the threshold of 10, which enabled us to rule out problems with the interpretability of the coefficients (Field, 2018).

4.2. Hypothesis 1

Examining the average market shares of the early movers in the different markets provides initial impressions regarding first-mover advantages. Table 4 shows that in the SMP market, the first movers had the highest average market share (60.6 %), followed by the second movers with 17.1 %. A downward trend appeared among the companies that followed. The fastest 10 % of the cases together accounted for almost half of the total market share.

The results from the PPSP market differed. Here, the market share of the fastest 10 %, as well as the first three providers, was very low, with a joint average market share of no >3.2 %. At first glance, the average market share of the fourth mover in the market appeared quite high at 18.1 %. As the standard deviation indicates, however, this can be explained by a sole exception.

The regression analysis delivered more detailed information. Table 5 presents the results for the SMP. All seven models meet the model quality criteria. Each of these analyses considered 74 cases. The F-values revealed significant levels of  $p < 0.001$ , and the  $R^2$  explained approximately 22.5 % and 53.2 % of the variance. For all first-mover variables, the regression coefficients were highly significant. In Models 2 and 6 (market entry order and time to market) we find beta values with negative signs indicating a first mover advantage because a later market entry is expressed in higher values for these variables. The strongest effects appeared in Models 1, 5 and 6 for the first-mover dummy and the speed of market entry/time that a business was active in the market. In

Table 1  
Average national market sizes and market shares.

Business model	Market size (number of suppliers)			Market share (in %)		
	Min	Max	Mean	Min	Max	Mean
SMP	3	26	12.33	0	0.999960686	0.0810810515
PPSP	8	75	36.33	0	0.837092785	0.024497339

**Table 2**  
Average time to market and time in the market in national markets.

	1st mover				2nd mover				3rd mover				4th mover			
	TtM	SD	TiM	SD	TtM <sup>a</sup>	SD	TiM	SD	TtM	SD	TiM	SD	TtM	SD	TiM	SD
SMP	0	0	6122	1445	2358	1708	3764	2044	3076	1686	3047	1798	3089	749	2916	1222
PPSP	0	0	8803	217	251	351	8552	393	766	727	8014	644	1135	698	7668	615

<sup>a</sup> Monopoly market time of the first mover in days.

isolated cases, weakly significant values resulted for the control variables ‘quality of the domain name’ and ‘import’. However, the control variables showed low beta values in comparison. The greatest influence can be attributed to the first-mover parameters in each model. The control variables ‘subsidiary’, ‘merger/acquisition’ and ‘sale’ were not considered in this analysis because the sample did not include any merged or acquired subsidiaries.

Table 6 summarizes the models for the PPSP markets with 200 cases. All seven models tested were significant here as well. However, the models exhibited lower explanatory power for the PPSP than for the SMP, with an R<sup>2</sup> between 0.173 and 0.189 for the PPSP. While four of the models revealed no significant first-mover effects, in at least three cases, the regression analysis showed a significant influence of the first-mover variable on success. The order of market entry was significant at the level of  $p < 0.01$  ( $\beta = -0.171$ ) (Model 2). In Models 6 and 7, the first-mover variables likewise appeared to have a significant influence on success, albeit at the level of  $p < 0.1$  with  $\beta = -0.125$  for ‘time to market’ and  $\beta = 0.129$  for ‘time in the market’. All models considered revealed a significant effect for the control variable ‘sales’. A significant influence of the control variable ‘import’ was evident in Models 2 and 6.

### 4.3. Hypothesis 2

Figs. 2 and 3 show the distribution of market share among all providers for each national market. It indicates the individual market share value for the ten largest providers and summarizes the remaining ‘others’. Suppliers exhibiting a market share of 0 % were included if they had an active website offering products and/or services. However, these sites saw no measurable traffic during the time of observation, leaving them classified as failures. The numbers in front of the market share values indicate their order of entry. We added the overall markets’ HHI values, supplemented with the market size in parentheses after the country codes.

While the SMP national markets, on average, consisted of 12 suppliers and had an average HHI of 0.71, the PPSP markets, on average, included a higher number of suppliers (33) and a lower market concentration (0.45). This suggests that the market shares in the PPSP market were more equally distributed. It should be noted, however, that both business models operated within a highly concentrated market where market shares appeared to be unequally distributed. While clear market leaders accounted for the main market share, a small minority did still hold a visible share. The remaining participants, in contrast, operated below 1 % levels.

For the SMP business models, the United Kingdom exhibited the lowest HHI (0.34). The UK was also the largest market, with 26 suppliers. While it was, therefore, the most fragmented market in the sample, its five most successful players still held >90 % of the market share. South Africa, with an HHI of 0.99, exhibited a near-monopolistic market. Of note here is the existence of only three suppliers in the South African SMP market. In all cases, the early movers (mainly the first two entering the market) appeared to be the market leaders. In the UK market, however, the 14th mover had the highest market share of 35.07 %, closely followed by the third mover (32.38 %) and first mover (11.41 %).

For the PPSP business models, Germany and Austria exhibited the highest HHIs—0.65 and 0.71, respectively. Each of these national markets also had one winner generating market shares above 80 %. The

remaining markets had HHI levels between 0.41 and 0.33. These markets are accordingly more fragmented, also showing three winners sharing the main share, with some suppliers above 2 % levels, and the majority only showing market shares of marginal levels down to 0 %. Although the PPSP markets were larger in terms of the number of suppliers, they nevertheless appeared concentrated. Compared to the SMP business model, the winners in the PPSP markets were not the first movers. In the English-speaking markets and Switzerland, the earlier movers (fastest 30 %) were among the top three performers.

## 5. Discussion

The regressions reveal varying results for the first-mover hypothesis. For SMP markets, we observe a significant influence of every first-mover variable on success, confirming Hypothesis 1 for our sample. A closer look at the first-mover differentiations leads to the following findings. The model with the first-mover dummy, in particular, delivered high values, which enables us to confirm the first-mover hypotheses for the very first company in the observed market. This is consistent with studies confirming the first-mover hypothesis based on the narrow definition of a first mover (e.g. Boulding and Christen, 2003). Early followers, however, also appear to enjoy advantages, thus garnering higher market shares compared to those entering the market at later stages. This is shown in Models 3–5, which include up to the fastest 30 %. Our work thereby also supports studies confirming the first-mover hypothesis for early market entrants (first mover in a broader sense) (e.g. Lieberman, 2007).

In addition, our study highlights the relevance of market entry speed. As the variables for the time in the market exert a significant positive effect on market share and for the time to market show a significant negative effect on market shares, we assert the importance of entering a market as early as possible. In other words, entering a market at the early stages of its development appears critical, while the order of entry within this stage is less essential. First-mover advantages appear to need time to develop. It is somewhat surprising, at first glance, that market entry order (Model 2) significantly influences success—although on a lower level and with lower beta values. This can be explained by a strong effect of entry order at early stages with high relevance of market entry speed. This effect decreases with increasing market age and an increasing number of players in the market. While the order of entry may cease to matter in older markets, it does not counterbalance positive effects in the beginning.

The results of our analysis of the PPSP markets are less clear. While our analysis does not support our hypotheses using a narrow definition of first movers, we do offer varying results for early followers based on the remaining variables. In particular, market entry order (Model 2) and market entry speed (Models 6 and 7) exert a significant influence, albeit on quite low levels and with low beta values. The first-mover hypothesis, therefore, is not fully supported for this business model. With regard to market sizes (PPSP markets include more suppliers than do SMP markets), entry order and market entry speed may be significant because followers’ market shares may still exceed those of subsequent entrants. In any case, social first movers are not shown to realize first-mover advantages in these markets. Nonetheless, the different results for the two social enterprise models suggest that factors other than socialness explain whether first-mover advantages exist or not. The results may also be traced back—or at least should be interpreted against—the



**Table 3**  
Descriptive statistics and correlations of the SMP and PPSP.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Market share	0.081	0.224	1												
	0.027	0.099	1												
2 First in market	0.08	0.275	0.701**	1											
	0.04	0.184	-0.027	1											
3 Order of entry	9.07	6.595	-0.350**	-0.366**	1										
	23.92	18.974	-0.158*	-0.212**	1										
4 Time to market	2247.32	1909.798	0.499**	0.607**	-0.690**	1									
	3716.28	2320.147	0.085	-0.305**	0.737**	1									
5 Time in market	4440.38	2236.952	-0.519**	-0.594**	0.860**	-0.792**	1								
	5078.39	2320.746	0.092	0.306**	-0.721**	-0.996**	1								
6 Fastest 10 %	0.09	0.295	0.448**	0.750**	-0.384**	0.651**	-0.586**	1							
	0.11	0.307	0.025	0.557**	-0.350**	-0.495**	0.495**	1							
7 Fastest 20 %	0.19	0.394	0.590**	0.615**	-0.505**	0.825**	-0.656**	0.669**	1						
	0.21	0.412	-0.047	0.366**	-0.458**	-0.639**	0.637**	0.657**	1						
8 Fastest 30 %	0.27	0.447	0.461**	0.488**	-0.536**	0.814**	-0.618**	0.531**	0.794**	1					
	0.32	0.466	-0.047	0.278**	-0.516**	-0.731**	0.731**	0.499**	0.759**	1					
9 Domain name	2.65	0.560	-0.386**	-0.347**	0.233*	-0.309**	0.298**	-0.294*	0.315**	-0.272*	1				
	2.45	0.670	0.100	-0.045	0.014	0.095	-0.080	-0.105	-0.147*	-0.203**	1				
10 Sub-sidiary	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.		
	0.02	0.122	-0.007	-0.022	-0.116	-0.153*	0.148*	0.228**	0.238**	0.180**	0.100	1			
11 Import	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	
	0.50	0.501	-0.160*	-0.014	-0.165*	-0.131	0.122	0.006	0.045	0.116	-0.048	0.048	1		
12 Merge/acquisi-tion	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.
	0.05	0.208	0.071	-0.039	-0.093	-0.056	0.064	-0.070	0.010	0.063	-0.072	-0.025	0.178**	1	
13 Sold	0.43	0.499	-0.055	0.140	-0.167	0.124	-0.222	0.184	-0.004	-0.040	0.110	n.i.	n.i.	n.i.	1
	0.02	0.122	0.327**	-0.022	-0.024	0.004	-0.009	-0.040	-0.060	-0.080	-0.081	-0.014	0.048	-0.025	1

SMP; PPSP; n.i. = not included in the model.

\* p < 0.05.

\*\* p < 0.01.

6

**Table 4**  
Average market share first mover in national markets.

SMP			PPSP		
FM variable	Mean	Standard deviation	FM variable	Mean	Standard deviation
1	0.6064	0.3941	1	0.0137	0.0265
2	0.1709	0.3104	2	0.0174	0.0389
3	0.0744	0.1136	3	0.0006	0.0008
4	0.0188	0.0178	4	0.1807	0.2480
Fastest 10 %	0.4659	0.4196	Fastest 10 %	0.0309	0.1040

background of network effects, which are particularly relevant in Internet markets (Arroyo-Barrigüete et al., 2010; Zhu and Iansiti, 2012). As we have already based the assumption of early market entrants' advantages on the existence of network effects in general, future work may require a more detailed view of network effects' impact for (different) web-based social enterprises.

Looking more closely at SMP reveals that these platforms serve to two types of users—customers and suppliers—who are connected by B2C exchange. As the number of suppliers on a platform increases, so does the selection available to customers. This increased selection, in turn, makes the platform more attractive to customers. Similarly, for suppliers, more users mean more potential customers. In fact, an increasing number of users—both customers and suppliers—is of increasing value to other users and makes the platform more attractive to them and to future users. These Internet-based network effects can initiate a self-reinforcing process (Dierickx and Cool, 1989; Lieberman and Montgomery, 1988) and a lock-in effect, wherein users do not or will not switch to alternative suppliers once a critical number of users are connected to the platform (Varadarajan et al., 2014). This, in turn, creates a resource that is difficult for later followers to imitate and may explain the pronounced first-mover effects shown for SMP.

Because PPSP likewise provide platforms that facilitate (private) user exchanges, however, the same may apply there as well. In other words, once the number of PPSP users grows, more users will find the network

valuable, which, in turn, will attract new users and thus generate comparable first-mover advantages. One reason for the absence of these in the researched PPSP markets may be the need for the physical exchange of goods or services. PPSP allow for various types of sharing, including the joint use of goods, such as cars or tools, or the exchange of, for example, clothing or sports equipment (Piscicelli and Vaskelainen, 2018; Stofberg and Bridoux, 2019; Wirtz et al., 2019). While sharing digital goods and services requires no physical contact, the exchange or joint use of physical goods and services requires some degree of physical contact or proximity. This may lead to regional or even neighborhood markets based on user structures rather than national markets. If first movers do not fully cover regional specifics, doors may open for additional players that are probably closer to home. Users might also tend to use various websites depending on the various types of sharing, which also leaves room for additional market players.

To summarize, our results verify Hypothesis 1—'Early market entry positively influences the performance of web-based social enterprises'—for SMP but not for PPSP markets.

Our analysis of market structure also delivers divergent results for SMP and PPSP markets. Both SMP and PPSP markets consist of various businesses, and the size of these markets in terms of the number of businesses is quite high (the average SMP market consists of 12 players, while the average PPSP market consists of 33 players). This supports Hypothesis 2a and may suggest that players in social markets are open to new entrants and that market entry barriers are low. At the same time, though, we can also identify clear market leaders. Our HHI analyses reveal medium to highly concentrated markets. One or a few (not more than three) platform operators in each market hold a majority of the respective market share. Although some other operators still attract a respectable number of customers, the rest obtain mere marginal shares. The markets' ages (24 and 17 years, on average, with standard deviations not indicating any major differences) suggest that at least the early development phase is over. Therefore, early development cannot explain the market concentrations. In sum, different platforms co-exist and share the market, but the winners continue to dominate. Nevertheless, early market entry does not necessarily explain this dynamic. In

**Table 5**  
Regression models SMP.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	0.209*	0.513***	0.348**	0.262**	0.328**	0.563***	0.240*
First in market	0.548*** (0.672)						
Market entry order		-0.010* (-0.289)					
Fastest 10 %			0.296** (0.390)				
Fastest 20 %				0.296** (0.521)			
Fastest 30 %					0.193*** (0.385)		
Time to market						-0.00004820*** (-0.481)	
Time in market							0.00005090*** (0.434)
Quality domain name	-0.055 (-0.138)	-0.124** (-0.311)	-0.104* (-0.260)	-0.087** (-0.218)	-0.112** (-0.280)	-0.091* (-0.227)	-0.097* (-0.242)
Subsidiary	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.
Merge/acquisition	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.
Sale	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.
Import	-0.06 (-0.135)	-0.031 (-0.069)	-0.044 (-0.098)	-0.013 (-0.313)	-0.004 (-0.009)	-0.062 (-0.137)	-0.037 (-0.082)
N	74	74	74	74	74	74	74
F	26.536*	6.765***	9.099***	15.103***	9.350***	12.282***	10.706***
R <sup>2</sup>	0.532	0.225	0.281	0.393	0.286	0.345	0.315

n.i. = not included in the model.  
 \*\*\* p < 0.001.  
 \*\* p < 0.01.  
 \* p < 0.1.

**Table 6**  
Regression models PPSP.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	-0.006	0.015	-0.012	-0.006	-0.010	0.009	-0.038
First in market	-0.009 (-0.016)						
Market entry order		-0.001** (-0.171)					
Fastest 10 %			0.020 (0.061)				
Fastest 20 %				-0.002 (-0.010)			
Fastest 30 %					0.004 (0.021)		
Time to market						-0.000005352* (-0.125)	
Time in market							0.000005510* (0.129)
Quality domain name	0.019 (0.131)	0.020* (0.136)	0.021* (0.141)	0.019 (0.130)	0.020* (0.137)	0.022* (0.147)	0.021* (0.145)
Subsidiary	-0.005 (-0.006)	-0.021 (-0.026)	-0.016 (-0.020)	-0.002 (-0.003)	-0.008 (-0.010)	-0.021 (-0.026)	-0.021 (-0.025)
Merge/acquisition	0.058* (0.121)	0.052 (0.110)	0.060 (0.127)	0.058 (0.122)	0.058 (0.121)	0.056 (0.118)	0.056 (0.117)
Sale	0.283*** (0.348)	0.282*** (0.347)	0.286*** (0.352)	0.283*** (0.348)	0.285*** (0.351)	0.285*** (0.351)	0.285*** (0.351)
Import	-0.041** (-0.210)	-0.045** (-0.227)	-0.037** (-0.193)	-0.041** (-0.210)	-0.038** (-0.195)	-0.044** (-0.223)	-0.044** (-0.223)
N	200	200	200	200	200	200	200
F	6.753	8.114	6.903	6.746	6.760	7.456	7.504
R <sup>2</sup>	0.174	0.201	0.177	0.173	0.174	0.188	0.189

\*\*\* p < 0.001.

\*\* p < 0.01.

\* p < 0.1.

fact, the regression results reveal the first movers as winners in SMP markets but the later followers as winners in PPSP markets. First-mover advantages, therefore, cannot explain the success of PPSP market leaders.

Overall, our results verify Hypothesis 2a—*‘In web-based social enterprises markets, market shares are distributed among a large number of companies.’* However, we do not find support for Hypothesis 2b—*‘Even if first-mover advantages exist, web-based social enterprise markets do not turn out to be winner-take-all markets.’*

Finally, the results concerning the control variables deliver some interesting secondary information. Consistent with work underlining the value of name assignment for companies’ image, visibility and recognizability (Bangani and Weideman, 2014; Park and Lennon, 2009), we observe an influence for the quality of the domain name on SMP success. While first movers have the first choice of names, followers may still be able to select a more suitable web domain for their platform. In addition, the PPSP results reveal a significant negative influence for the ‘imported’ variable on success. This indicates that national businesses are more successful, while international offerings may suffer from insufficient expertise in national markets. This finding corresponds with the assumption that PPSP markets are more dependent on specific national or even regional criteria, which businesses must consider.

## 6. Conclusion

Scholars have long investigated the question of whether the time of market entry positively affects firm success. The extant research offers explanations for the existence of both first-mover advantages and follower advantages. Despite a large (and growing) number of studies, however, empirical results are not uniform. Under certain circumstances, first-mover advantages are evident, while followers prove to be more successful in other circumstances. The main criticisms of first-mover studies involve their determination of markets, their failure to consider failed offers, their measurements of success, their applied definition of first-mover status and their (in)correct identification of

market entries. Our study is the first to transfer the first-mover question to the context of Internet markets and social entrepreneurship by analyzing the market entry and success of web-based social enterprises. We address potential criticism by developing a complex research process identifying social enterprises and their times of market entry based on clear criteria that include various first-mover terms.

The results of our study reveal several key insights. First, our work shows that pioneer advantages also exist in web-based social enterprise markets; they are anything but mere myths (Porter, 2001). Second, first-mover advantages are not only available to the very first entrants but also to their early followers. In addition, the speed of market entry matters. Third, our results demonstrate that first movers have ‘no birth right for success’ (Lieberman, 2007, p. 8). First-mover advantages do not appear consistent across either of the social enterprise models investigated here. In fact, first-mover advantages in social Internet markets appear to arise only under certain conditions. Fourth, although we carved out theoretical arguments against the winner-take-all hypothesis for web-based social enterprises, our results surprisingly support it. For both business models, we found highly concentrated markets at a mature phase. This suggests that at that point at least, the winners do, in fact, take most of the market share. Fifth, while, theoretically, social entrepreneurs may not build market entry barriers and may tend to share relevant information due to the social cause of their work, our results regarding both first-mover advantages and winner-take-all market structures indicate that competitive markets do also exist for social enterprises. Future studies should work to determine whether this competition is motivated by the belief that (own) controlled diffusion and growth of a social enterprise leads to higher societal impact or by the nature of the entrepreneurs and entrepreneurial behavior.

Like any empirical study, the present analysis also has limitations that must be considered when interpreting its results. Although the six countries selected encompass vast market activity, we are unable to draw conclusions from an overall global perspective. The analysis of two business models delivers initial insights regarding differences that might occur due to business models and market specifics. However,

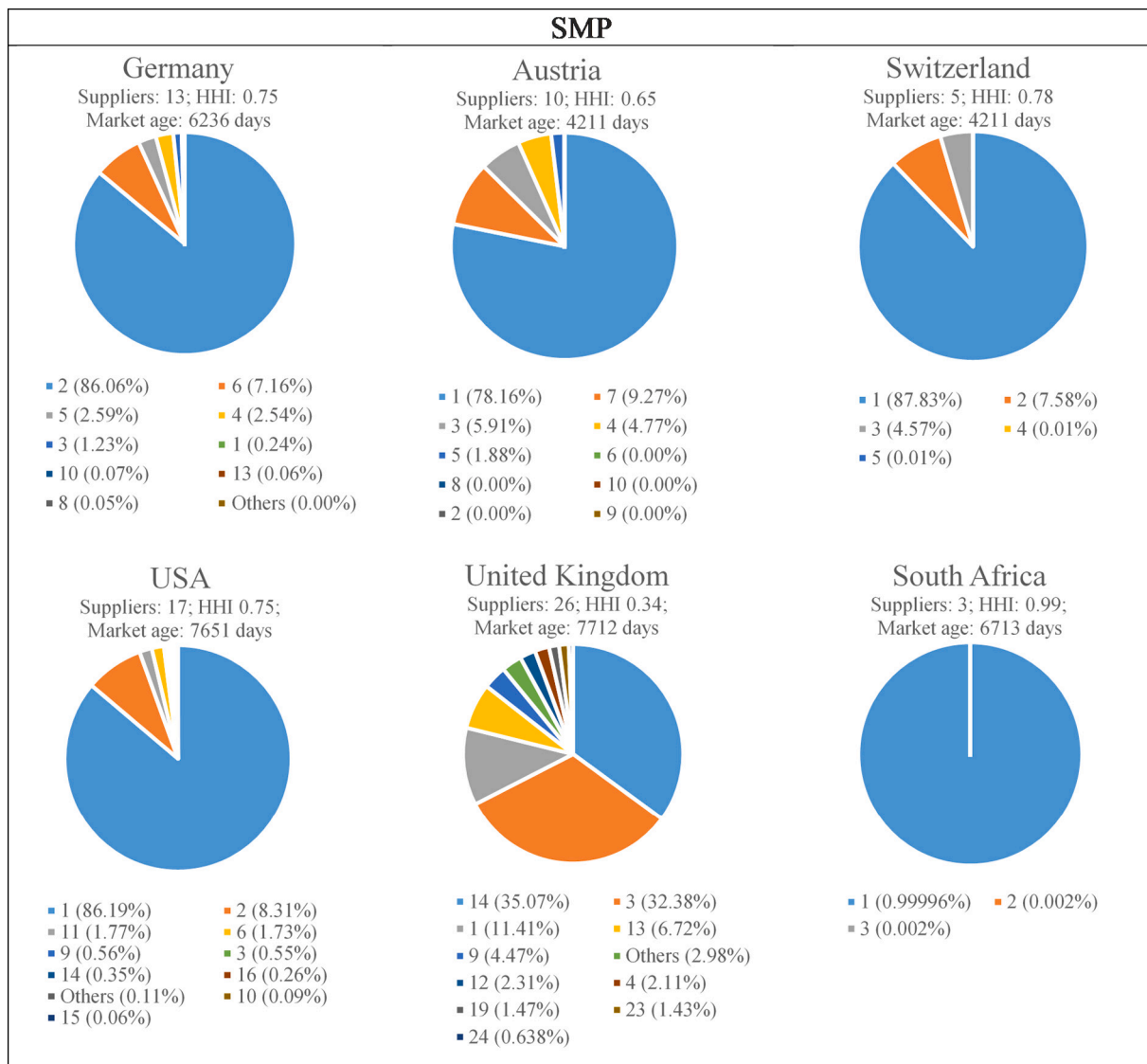


Fig. 2. Market shares of suppliers in national SMP markets.

illuminating first-mover (dis)advantages for various types of social enterprise models and achieving more universally-applicable statements will require the investigation of more than two business models. Future work should thus expand the sample to additional social enterprise models and national markets. The complete identification of all information and previous as well as current players is not possible and must be taken into account. Nevertheless, the research process employed here promises nearly complete coverage of the relevant market participants and related information, especially market entry data. This strength of our study is most notable, moreover, when compared to previous studies, which often determine Internet markets rather superficially and are limited to providers that are currently active in a market. Our method is, therefore, suitable for use in subsequent studies. It should be noted, however, that as in other studies on first-mover advantages (e.g. Magnusson et al., 2012), we only examined successful markets, without highlighting any of the risks associated with first-mover status. Because a considerable number of Internet business models fail (Razi et al., 2004), this risk is clearly anything but trivial.

Some critics argue that first movers may show a higher market share not because they perform better but because they have fewer competitors in their early years (Vanderwerf and Mahon, 1997). Importantly, this critique does not account for our analysis because first- and later-

mover markets are sufficiently mature to render this bias irrelevant. Nevertheless, market share remains an imperfect performance measure. In the Internet sector, in particular, traffic-based market share is not necessarily directly linked to social and financial value generation, which is usually the primary goal of social entrepreneurs. As explained previously, we considered the quantification of social entrepreneurial success via market shares the most suitable approach for our study. By calculating market shares on the basis of user shares, we were able to determine them independently of varying social revenue models and underlying societal goals. Our approach, in turn, might generate the best possible informative value without having to include this kind of inaccessible information. Because scholars continue to struggle to measure social entrepreneurial success, particularly its societal impact, future studies might evaluate and develop our approach further (Halberstadt and Hölzner, 2018; Rawhouser et al., 2019). Improved measures, as well as additional information regarding individual social entrepreneurs' key goals and social performance indicators, would enhance the information currently available.

Further information on social entrepreneurs' motivations and attitudes towards competition and the diffusion of successful social entrepreneurial solutions can also shed light on the development of social enterprise markets. Additional research remains necessary in this field.

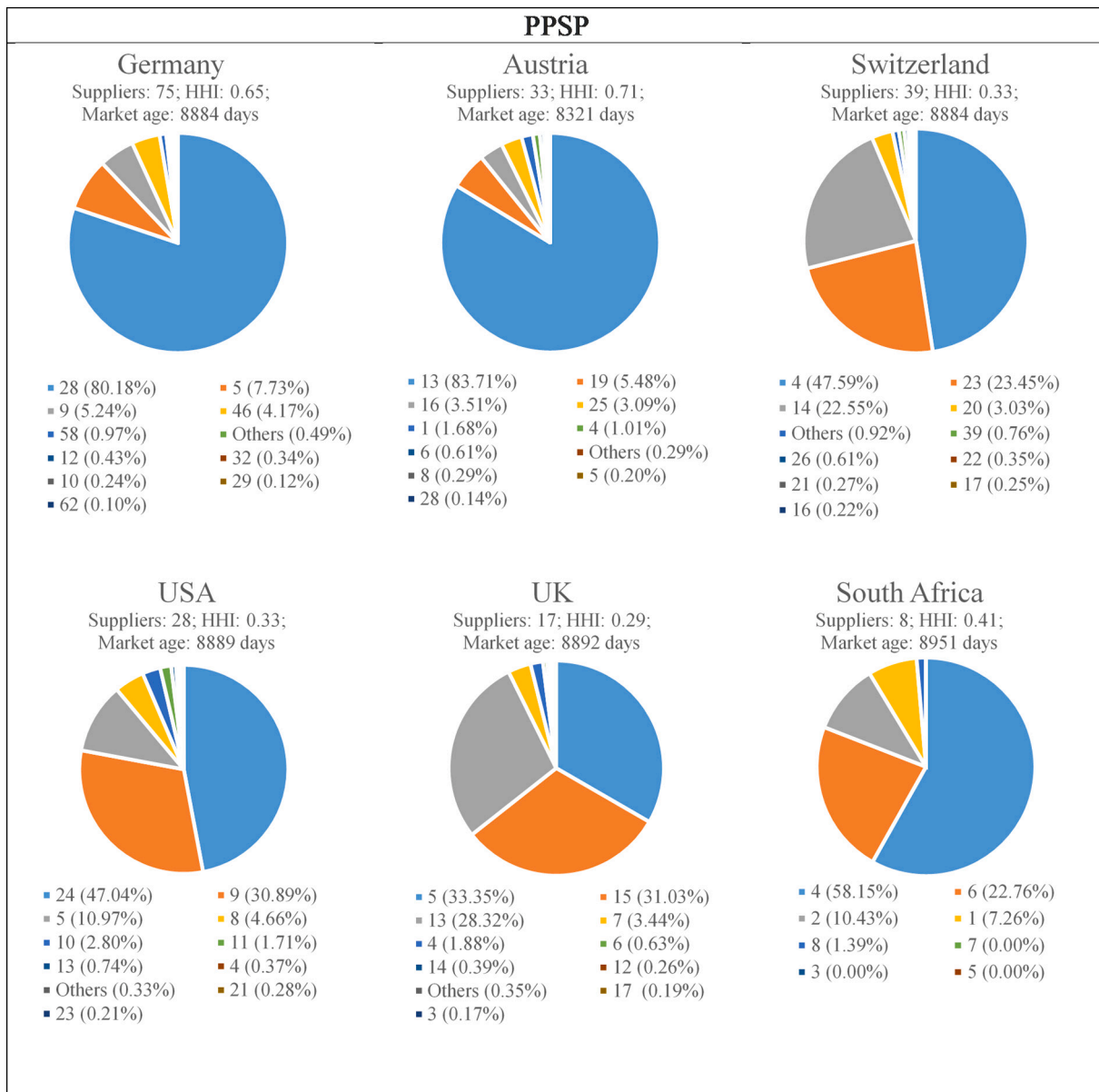


Fig. 3. Market shares of suppliers in national PPSP markets.

Furthermore, research indicates that dynamic capabilities play a critical role in combining economic, ecological and social performance (Tiberius et al., 2021). Future research might analyze the influence of social enterprises’ dynamic capabilities on (the speed of) generating and implementing successful social enterprise ideas.

Along with implications for future research, we can also derive initial implications for entrepreneurial practice, including for social entrepreneurs and social entrepreneurship consultants. Selecting the appropriate strategy leads to considerable success (i.e. significant market shares) for those firms that prevail in their respective markets. According to our results, opting for early market entry is a favorable strategy. Nevertheless, first-mover advantages should not be taken for granted. Rather than blindly trusting in them as they appear, first movers should actively search for and capitalise on first-mover advantages. Depending on market specifics, moreover, follower strategies can also promote success when markets are not saturated. Furthermore, our results indicate that this requires careful analysis to meet existing customer needs while continuing to attract enough new users. The acquisition of (a critical amount of) users becomes more important the stronger network effects

work. If first movers do not ensure that users are committed to their business at an early stage, followers can use this lack of customer loyalty to their own advantage.

Our work also shows that national Internet markets for social enterprises do, in fact, exist. Most proponents of the first-mover hypothesis focus on single national markets or utilize sampling procedures that fail to differentiate between national markets. Scholars devote little attention to companies that are late movers on a global scale but first movers in their respective domestic markets. Because imitation is easy in the Internet context and thus allows business models to diffuse globally, this pioneering may account for a large proportion of entrepreneurial activity on the Internet. Examining existing social enterprises that have been successful in their respective national markets and transferring these ideas to new ones can, therefore, be a promising strategy. Although the risk of failure due to national market characteristics persists, there is at least general proof of the concept. Pioneers here may combine the advantages of both first movers and followers. However, as we have also shown the disadvantages here for international players, it is important to be aware of national markets’ specifics.

Our results not only contribute to research and practice regarding (entrepreneurs') strategic management decisions but also aid the discussion on differences between social and business entrepreneurial activity. With the increasing importance of social entrepreneurial solutions and the strategic relevance of determining the most promising time of market entry, more academic work is required in this as yet under-researched field. Our work offers several starting points for theoretical as well as empirical work—both of which are urgently needed. We, therefore, hope to motivate other researchers to pursue these efforts and thereby achieve deeper insights.

### CRedit authorship contribution statement

**Jantje Halberstadt:** Conceptualization, Methodology, Validation, Writing – Original Draft, Writing – Review & Editing; **Sophia Kollhoff:** Conceptualization, Methodology, Validation, Writing – Original Draft, Writing – Review & Editing; **Sascha Kraus:** Writing – Original Draft, Writing – Review & Editing, Administration; **Amandeep Dhir:** Validation, Writing – Review & Editing.

### References

- Ade, Y., Hermanto, L., Ade Lose Hermanto, Y., 2020. Online marketplace characteristics for freelance designers. *KnE Soc. Sci.* 4 (4) <https://doi.org/10.18502/kss.v4i4.6499>.
- Afuah, A., 2013. Are network effects really all about size? The role of structure and conduct. *South. Med. J.* 34, 257–273.
- Akbar, Y., Tracogna, A., 2018. The sharing economy and the future of the hotel industry: transaction cost theory and platform economics. *Int. J. Hosp. Manag.* 71, 91–101. <https://doi.org/10.1016/j.ijhm.2017.12.004>.
- Andersson, M., Hjalmarsson, A., Avital, M., 2013. Peer-to-peer service sharing platforms: driving share and share alike on a mass-scale. Completed research paper. In: 34th International Conference on Information Systems, Milan, Italy.
- Arroyo-Barrigüete, J., Ernst, R., López-Sánchez, J., Orero-Giménez, A., 2010. On the identification of critical mass in internet-based services subject to network effects. *Serv. Ind. J.* 30, 643–654. <https://doi.org/10.1080/02642060802253850>.
- Bacq, S., Janssen, F., 2011. The multiple faces of social entrepreneurship: a review of definitional issues based on geographical and thematic criteria. *Entrep. Reg. Dev.* 23, 373–403. <https://doi.org/10.1080/08985626.2011.577242>.
- Bakos, Y., Brynjolfsson, E., 1999. Bundling information goods: pricing, profits, and efficiency. *Manag. Sci.* 45 (12), 1613–1630.
- Bangani, A., Weideman, M., 2014. A comparison of the effect of single-word versus hyphenated domain name choices on website visibility. Working Paper. Available online: Cape Peninsula University of Technology, Cape Town <http://www.web-visibility.co.za/website-visibility-abstracts-seo.htm>.
- Baran, K., Stock, W., Fietkiewicz, K., 2015. Monopolies on social network services (SNS) markets and competition law. In: The 14th International Symposium on Information Science (IS), Zadar, Croatia.
- Barney, J.B., 1997. Gaining and Sustaining Competitive Advantage. Addison-Wesley Publishing Co.
- Bedi, H.S., Yadav, N., 2019. Social entrepreneurship: a conceptual clarity. *Our Heritage* 67 (10), 1006–1016.
- Bonomi, S., Ricciardi, F., Rossignoli, C., et al., 2017. Network organisations for externality challenges: how social entrepreneurship co-evolves with ICT-enabled solutions. *Int. J. Knowl. Based Dev.* 8 (4), 346–366.
- Botsman, R., 2013. The sharing economy lacks a shared definition. <http://www.fastcoexist.com/3022028/the-sharing-economy-lacks-a-shared-definition>.
- Boulding, W., Christen, M., 2003. Sustainable pioneering advantage? Profit implications of market entry order. *Mark. Sci.* 22 (3), 371–392.
- Bouncken, R.B., Tiberius, V., 2021. Legitimacy processes and trajectories of co-prosperation services: insights from coworking spaces. *J. Serv. Res.* 0 (0), 1–19, 10946705211050208.
- Brandstätter, H., 2011. Personality aspects of entrepreneurship: a look at five meta-analyses. *Personal. Individ. Differ.* 51 (3), 222–230.
- Brezina, I., Pekár, J., Čičková, Z., Reiff, M., 2016. Herfindahl-hirschman index level of concentration values modification and analysis of their change. *CEJOR* 24 (1), 49–72.
- Bygrave, W., Minniti, M., 2000. The social dynamics of entrepreneurship. *Enterp. Theory Pract.* 24 (3), 25–36.
- Carpenter, G.S., Nakamoto, K., 1989. Consumer preference formation and pioneering advantage. *J. Mark. Res.* 26 (3), 285–298.
- Carragher, S., Welsh, D., Svilokos, A., 2016. Validation of a measure of social entrepreneurship. *Eur. J. Int. Manag.* 10, 386. <https://doi.org/10.1504/EJIM.2016.077421>.
- Ceesay, L.B., Rossignoli, C., Mahto, R.V., 2021. Collaborative capabilities of cause-based social entrepreneurship alliance of firms. *J. Small Bus. Enterp. Dev.* ahead-of-print.
- Chang, J., Bai, X., Li, J.J., 2015. The influence of institutional forces on international joint ventures' foreign parents' opportunism and relationship extendedness. *J. Int. Mark.* 23 (2), 73–93.
- Chen, Y.-S., Chang, K.-C., 2010. The relationship between a firm's patent quality and its market value—the case of US pharmaceutical industry. *Technol. Forecast. Soc. Chang.* 77 (1), 20–33.
- Choi, N., Majumdar, S., 2014. Social entrepreneurship as an essentially contested concept: opening a new avenue for systematic future research. *J. Bus. Ventur.* 29 (3), 363–376.
- Cleff, T., Rennings, K., 2012. Are there any first-mover advantages for pioneering firms? Lead market orientated business strategies for environmental innovation. *Eur. J. Innov. Manag.* 15 (4), 491–513.
- Coltman, T., Devinney, T.M., Latakefu, A., Midgley, D.F., 2001. E-business: revolution, evolution, or hype? *Calif. Manag. Rev.* 44 (1), 57–86.
- Constantinos, I.C., Theodore, S., 2019. Concentration of container flows in the port phase: the case of the US West and East Coast port ranges. *Bus. Manag. Econ.* 7 (1), 1–13.
- Cottrell, T., Sick, G., 2002. Real options and follower strategies: the loss of real option value to first-mover advantage. *Eng. Econ.* 47 (3), 232–263.
- Dacin, M., Matear, M., 2010. Do we need a theory of social entrepreneurship. In: Mair, J., Robinson, J., Hockerts, K. (Eds.), *Social Entrepreneurship*. Palgrave Macmillan, pp. 214–234.
- Davila, A., Foster, G., Gupta, M., 2003. Venture capital financing and the growth of startup firms. *J. Bus. Ventur.* 18 (6), 689–708. [https://doi.org/10.1016/s0883-9026\(02\)00127-1](https://doi.org/10.1016/s0883-9026(02)00127-1).
- Defourny, J., Nyssens, M., 2006. Defining social enterprise. In: Nyssens, M. (Ed.), *Social Enterprise: At the Crossroads of Market, Public Policies and Civil Society*. Routledge, pp. 3–26.
- Deng, Z., Wang, Z., 2016. Early-mover advantages at cross-border business-to-business e-commerce portals. *J. Bus. Res.* 69 (12), 6002–6011.
- Dierckx, I., Cool, K., 1989. Asset stock accumulation and sustainability of competitive advantage. *Manag. Sci.* 35 (12), 1504–1511.
- Do Adro, F., Fernandes, C.I., Veiga, P.M., 2021. Social entrepreneurship orientation and performance in non-profit organizations. *Int. Entrep. Manag. J.* 17, 1591–1618.
- Dobeles, L., Pietere, A., 2015. Competitiveness of social entrepreneurship in Latvia. *Reg. Form. Dev. Stud.* 17 (3).
- Dwivedi, A., Weerawardena, J., 2018. Conceptualizing and operationalizing the social entrepreneurship construct. *J. Bus. Res.* 86, 32–40.
- Eisenman, L.T., 2007. Self-determination interventions: building a foundation for school completion. *Remedial Spec. Educ.* 28 (1), 2–8.
- El-Den, J., Adhikari, P., Azam, S., 2017. Social media in the service of social entrepreneurship: identifying factors for better services. *J. Adv. Hum. Soc. Sci.* 3 (2), 105–114.
- European Commission (EC), 2013. The Sharing Economy: Accessibility Based Business Models for Peer-to-Peer Markets. Business Innovation Observatory. O.O.
- Field, A.P., 2018. *Discovering Statistics Using IBM SPSS Statistics*. SAGE.
- Fischbacher, U., Thöni, C., 2008. Excess entry in an experimental winner-take-all market. *J. Econ. Behav. Organ.* 67 (1), 150–163.
- Fraizer, L., Madjid, F., 2011. ICT and social entrepreneurship: implications of change making for the future ICT workforce. *ACM SIGITE Res. IT* 8 (2), 3–10.
- Frank, R., Cook, P.J., 2010. The Winner-take-all Society: Why the Few at the Top Get so Much More Than the Rest of Us. Random House.
- Frenken, K., Meelen, T., Arets, M., Van De Glind, P., 2015. Smarter regulation for the sharing economy. Available at: <http://www.theguardian.com/science/political-science/2015/may/20/smarter-regulation-for-the-sharing-economy> (last accessed 28.03.2021).
- Gali, N., Niemand, T., Shaw, E., Hughes, M., Kraus, S., Brem, A., 2020. Social entrepreneurship orientation and company success: the mediating role of social performance. *Technol. Forecast. Soc. Chang.* 160, 120230.
- Gerli, F., Chiodo, V., Bengo, I., 2021. Technology transfer for social entrepreneurship: designing problem-oriented innovation ecosystems. *Sustainability* 13 (1), 20.
- Glick, M.A., Campbell, D., 2007. Market definition and concentration: one size does not fit all. *Antitrust Bull.* 52 (2), 229–237.
- Goduscheit, R.C., Khanin, D., Mahto, R.V., McDowell, W.C., 2021. Structural holes and social entrepreneurs as altruistic brokers. *J. Innov. Knowl.* 6 (2), 103–111.
- Gomez, J., Lanzolla, G., Maicas, J.P., 2016. The role of industry dynamics in the persistence of first-mover advantages. *Long Range Plan.* 49 (2), 265–281.
- Gregori, P., Holzmann, P., 2020. Digital sustainable entrepreneurship: a business model perspective on embedding digital technologies for social and environmental value creation. *J. Clean. Prod.* 272, 122817 <https://doi.org/10.1016/j.jclepro.2020.122817>.
- Guo, J.J., Fiore, A.M., Murray, L.T., Jaffe, D.A., Schnell, J.L., Moore, C.T., Milly, G.P., 2018. Average versus high surface ozone levels over the continental USA: model bias, background influences, and interannual variability. *Atmos. Chem. Phys.* 18, 12123–12140.
- Gupta, P., Chauhan, S., Paul, J., Jaiswal, M., 2020. Social entrepreneurship research: a review and future research agenda. *J. Bus. Res.* 113, 209–229.
- Halberstadt, J., Hölzner, H., 2018. Social entrepreneurship. In: Grundwald, K., Langer, A. (Eds.), *Sozialwirtschaft, Handbuch für Wissenschaft und Praxis*. Nomos Verlag, pp. 592–605.
- Halberstadt, J., Niemand, T., Kraus, S., Rexhepi, G., Jones, P., Kailer, N., 2020. Social entrepreneurship orientation: drivers of success for start-ups and established industrial firms. *Ind. Mark. Manag.* 94, 137–149.
- Hayes, A.F., Cai, L., 2007. Using heteroskedasticity-consistent standard error estimators in OLS regression: an introduction and software implementation. *Behav. Res. Methods* 39, 709–722.
- Hellmann, T., Puri, M., 2000. The interaction between product market and financing strategy: the role of venture capital. *Rev. Financ. Stud.* 13 (4), 959–984.

- Ho, C.H., Chiu, K.H., Chen, H., Papazafeiropoulou, A., 2015. Can internet blogs be used as an effective advertising tool? The role of product blog type and brand awareness. *J. Entrep. Inf. Manag.* 28 (3), 346–362.
- Huang, D., Jin, X., Coghlan, A., 2021. Advances in consumer innovation resistance research: a review and research agenda. *Technol. Forecast. Soc. Chang.* 166, 120594.
- Iyigün, N., 2015. What could entrepreneurship do for sustainable development? A corporate social responsibility-based approach. *Procedia Soc. Behav. Sci.* 195, 1226–1231. <https://doi.org/10.1016/j.sbspro.2015.06.253>.
- Jiang, B., Tian, L., 2018. Collaborative consumption: strategic and economic implications of product sharing. *Manag. Sci.* 64 (3), 938–1476.
- Kalyanaram, G., Urban, G.L., 1992. Dynamic effects of the order of entry on market share, trial penetration, and repeat purchases for frequently purchased consumer goods. *Mark. Sci.* 11 (3), 235–250.
- Kaminski, J., Hopp, C., Tykrová, T., 2019. New technology assessment in entrepreneurial financing—does crowdfunding predict venture capital investments? *Technol. Forecast. Soc. Chang.* 139, 287–302. <https://doi.org/10.1016/j.techfore.2018.11.01>.
- Kannampuzha, M., Hockerts, K., 2019. Organizational social entrepreneurship: scale development and validation. *Soc. Entrep. J.* 15.
- Kassalis, I., 2010. Cluster-based Approach: A Tool to Enter Into the Market. <https://doi.org/10.3846/bm.2010.084>.
- Katane, I., 2010. Competitiveness of personality as a new concept in modern education and pedagogy science. In: Proceedings of the 9th International Scientific Conference Engineering for Rural Development, Vol. 9, pp. 327–334.
- Kaufmann, F., 1995. Internationalisation via co-operation—strategies of SME. *Int. Small Bus. J.* 13 (2), 27–33.
- Kodama, N., Javorcik, B., Abe, Y., 2016. Transplanting Corporate Culture Across International Borders: FDI and Female Employment in Japan. In: REITI Discussion Paper Series 16-E-015.
- Koe, W.-L., Omar, R., Sa’Ari, J.R., 2015. Factors influencing propensity to sustainable entrepreneurship of SMEs in Malaysia. *Procedia Soc. Behav. Sci.* 172, 570–577.
- Kollmann, T., Christofor, J., Kuckertz, A., 2007. Explaining individual entrepreneurial orientation: conceptualization of a cross-cultural research framework. *Int. J. Entrep. Small Bus.* 4, 325–340. <https://doi.org/10.1504/IJESB.2007.013255>.
- Konys, A., 2019. Towards sustainable entrepreneurship holistic construct. *Sustainability* 11, 6749.
- Kranz, J.J., Picot, A., 2016. 17. Internet business strategies. In: Handbook on the Economics of the Internet, p. 365.
- Kraus, S., Niemand, T., Halberstadt, J., Shaw, E., Syrjä, P., 2017. Social entrepreneurship orientation: development of a measurement scale. *Int. J. Entrep. Behav. Res.* 23 (6), 977–997.
- Lacan, C., Desmet, P., 2017. Does the crowdfunding platform matter? Risks of negative attitudes in two-sided markets. *J. Consum. Mark.* 34 (3), 472–479.
- Lambkin, M., 1992. Pioneering new markets: a comparison of market share winners and losers. *Int. J. Res. Mark.* 9 (1), 5–22.
- Lee, E., Lee, J., Lee, J., 2006. Reconsideration of the winner-take-all hypothesis: complex networks and local bias. *Manag. Sci.* 52 (12), 1838–1848.
- Lehner, O.M., 2013. Crowdfunding social ventures: a model and research agenda. *Ventur. Cap.* 15 (4), 289–311.
- Liang, T.P., Czaplewski, A.J., Klein, G., Jiang, J.J., 2009. Leveraging first-mover advantages in internet-based consumer services. *Commun. ACM* 52 (6), 146–148.
- Lieberman, M.B., 2007. Did first-mover advantage survive the dot-com crash? In: Working Paper, UCLA Anderson School of Management.
- Lieberman, M.B., Montgomery, D.B., 1988. First-mover advantages. *Strateg. Manag. J.* 9, 41–58.
- Lieberman, M.B., Montgomery, D.B., 2013. Conundra and progress: research on entry order and performance. *Long Range Plan.* 46 (4–5), 312–324. <https://doi.org/10.1016/j.lrp.2013.06.005>.
- Liebowitz, S.J., Margolis, S.E., 1994. Network externality: an uncommon tragedy. *J. Econ. Perspect.* 8 (2), 133–150.
- Magnusson, P., Westjohn, S.A., Gordon, G.L., Aurand, T.W., et al., 2012. Environmental dynamics and first-mover advantages in emerging markets. *Mark. Manag. J.* 22 (1), 17–34.
- Mair, J., Noboa, E., 2006. Social entrepreneurship: how intentions to create a social venture are formed. In: Mair, J., Robinson, J., Hockerts, K. (Eds.), *Social Entrepreneurship*. Palgrave Macmillan, pp. 121–135.
- Majchrzak, A., Markus, M.L., Wareham, J., 2016. Designing for digital transformation: lessons for information systems research from the study of ICT and societal challenges. *MIS Q.* 40 (2), 267–277.
- Makadok, R., 1998. Can first-mover and early-mover advantages be sustained in an industry with low barriers to entry/imitation? *Strateg. Manag. J.* 19, 683–696.
- Markides, C., Sosa, L., 2013. Pioneering and first-mover advantages: the importance of business models. *Long Range Plan.* 46 (4–5), 325–334.
- Marquis, C., Park, A., 2014. Inside the buy-one give-one model. *Stanf. Soc. Innov. Rev.* 12 (1), 28–33.
- McMullen, J.S., 2018. Organizational hybrids as biological hybrids: Insights for research on the relationship between social enterprise and the entrepreneurial ecosystem. *J. Bus. Ventur.* 33 (5), 575–590.
- Medina-Molina, C., Felicio, J.A., Rey, Moreno, M., 2019. Participation in crowdfunding among users of collaborative platforms: the role of innovativeness and social capital. *Rev. Manag. Sci.* 13, 529–543. <https://doi.org/10.1007/s11846-019-00329-4>.
- Morrar, R., Arman, H., Mousa, S., 2017. The Fourth Industrial Revolution (Industry 4.0): a social innovation perspective. *Technol. Innov. Manag. Rev.* 7, 12–20.
- Moya-Clemente, I., Ribes-Giner, G., Pantoja-Díaz, O., 2020. Identifying environmental and economic development factors in sustainable entrepreneurship over time by partial least squares (PLS). *PLoS ONE* 15 (9), e0238462.
- Murillo, D., Buckland, H., Val, E., 2017. When the sharing economy becomes neoliberalism on steroids: unravelling the controversies. *Technol. Forecast. Soc. Chang.* 125, 66–76.
- North, D.C., 1990. Institutions, Institutional Change and Economic Performance. Cambridge University Press.
- Noruzi, M.R., Westover, J., Rahimi, G., 2010. An exploration of social entrepreneurship in the entrepreneurship era. *Asian Soc. Sci.* 6 <https://doi.org/10.5539/ass.v6n6p3>.
- Park, M., Lennon, S., 2009. Brand name and promotion in online shopping contexts. *J. Fash. Mark. Manag.* 13, 149–160.
- Parker, G.G., van Alstyne, M.W., 2005. Two-sided network effects: a theory of information product design. *Manag. Sci.* 51 (10), 1494–1504.
- Parrish, B., Foxon, T., 2006. Sustainability entrepreneurship and equitable transitions to a low-carbon economy. *Greener Manag. Int.* 55, 47–62.
- Piscicelli, L., Vaskelainen, T., 2018. Online and offline communities in the sharing economy. *Sustainability* 10 (8), 2927.
- Porter, M.E., 2001. Strategy and the internet. *Harv. Bus. Rev.* 79 (3), 62–78.
- Rajgopal, S.S., Venkatchalam, M.M., Kotha, S.S., 2003. The value relevance of network advantages: the case of e-commerce firms. *J. Account. Res.* 41 (1), 135–162.
- Rawhouser, H., Cummings, M., Newbert, S., 2019. Social impact measurement: current approaches and future directions for social entrepreneurship research. *Enterp. Theory Pract.* 43, 82–115.
- Razi, M., Tarn, J., Siddiqui, F., 2004. Exploring the failure and success of dotcoms. *Inf. Manag. Comput. Secur.* 12 (3), 228–244.
- Remane, G., Hildebrandt, B., Hanelt, A., Kolbe, L., 2016. Discovering new digital business model types: a study of technology startups from the mobility sector. June. In: Proceedings of the 20th Pacific Asia Conference on Information Systems (PACIS), Chiayi, Taiwan.
- Remenyi, D., Grant, K., Pather, S., 2004. It was a shock when boo went under—the legacy of the e-bubble: lessons for managers. *J. Gen. Manag.* 29 (3), 24–36.
- Reuschl, A., Tiberius, V., Filser, M., Qui, Y., 2021. Value configurations in sharing economy business models. *Rev. Manag. Sci.* 16, 89–112.
- Rey-Martí, A., Ribeiro-Soriano, D., Palacios-Marqués, D., 2016. A bibliometric analysis of social entrepreneurship. *J. Bus. Res.* 69 (5), 1651–1655.
- Robinson, J., 2006. Navigating social and institutional barriers to markets: how social entrepreneurs identify and evaluate opportunities. In: Mair, J., Robinson, J., Hockerts, K. (Eds.), *Social Entrepreneurship*. Springer.
- Robinson, W.T., Fornell, C., 1985. Sources of market pioneer advantages in consumer goods industries. *J. Mark. Res.* 22 (3), 305–317.
- Robinson, W.T., Min, S., 2002. Is the first to market the first to fail? Empirical evidence for industrial goods businesses. *J. Mark. Res.* 39 (1), 120–128.
- Robinson, W.T., Kalyanaram, G., Urban, G.L., 1994. First-mover advantages from pioneering new markets: a survey of empirical evidence. *Rev. Ind. Organ.* 9, 1–23.
- Roundy, P., 2014. The stories of social entrepreneurs: narrative discourse and social venture resource acquisition. *J. Res. Mark. Entrep.* 16, 200–218. <https://doi.org/10.1108/JRME-06-2014-0009>.
- Sansone, G., Andreotti, P., Colombelli, A., Landoni, P., 2020. Are social incubators different from other incubators? Evidence from Italy. *Technol. Forecast. Soc. Chang.* 158, 120132.
- Schaltegger, S., Wagner, M., 2011. Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Bus. Strateg. Environ.* 20, 222–237.
- Scherer, F.M., Ross, D., 1990. *Industrial Market Structure and Economic Performance*. Houghton Mifflin.
- Schramm, C.J., 2011. State of Entrepreneurship Address. SSRN Papers.
- Schreyögg, G., Sydow, J., Koch, J., 2003. Organisatorische Pfade—Von der Pfadabhängigkeit zur pfadkreation. *Managementforschung* 13, 257–294.
- Shapiro, C., Varian, H.R., 1999. *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business School Press.
- Soni, G., Mangla, S.K., Singh, P., Dey, B.L., Dora, M., 2021. Technological interventions in social business: mapping current research and establishing future research agenda. *Technol. Forecast. Soc. Chang.* 169, 120818.
- Spiegler, A.B., Halberstadt, J., 2018. SHEstainability: how relationship networks influence the idea generation in opportunity recognition process by female social entrepreneurs. *Int. J. Entrep. Ventur.* 10 (2), 202–235.
- Statista, 2020. DossierPlus: Wirtschaftsraum DACH.
- Statista, 2021. Ranking der 20 Länder mit dem größten Bruttoinlandsprodukt (BIP) im Jahr 2020.
- Stofberg, N., Bridoux, F., 2019. Consumers’ choice among peer-to-peer sharing platforms: the other side of the coin. *Psychol. Mark.* 36, 1176–1195.
- Suarez, F., Lanzolla, G., 2005. The half-truth of first-mover advantage. *Harv. Bus. Rev.* 83 (4), 121–127.
- Sun, M., Tse, E., 2007. When does the winner take all in two-sided markets? *Rev. Netw. Econ.* 6 (1), 16–41.
- Surie, G., 2017. Creating the innovation ecosystem for renewable energy via social entrepreneurship: insights from India. *Technol. Forecast. Soc. Chang.* 121.
- Tan, N.-T., 2004. Social entrepreneurship: challenge for social work in a changing world. *Asian Pac. J. Soc. Work* 14 (2), 87–98.
- Terán-Yépez, E., Marín-Carrillo, G.M., Del Pilar Casado-Belmonte, M., De Las Mercedes Capobianco-Uriarte, M., 2020. Sustainable entrepreneurship: review of its evolution and new trends. *J. Clean. Prod.* 252.
- Tiberius, V., Rietz, M., Bouncken, R.B., et al., 2020. Performance analysis and science mapping of institutional entrepreneurship research. *Adm. Sci.* 10 (3), 69.
- Tiberius, V., Stiller, L., Dabić, M., 2021. Sustainability beyond economic prosperity: social microfoundations of dynamic capabilities in family businesses. *Technol. Forecast. Soc. Chang.* 173, 121093.

- Tomás, D., Castelló, I., Bakker, F., Zietsma, C., 2019. Energizing through visuals: how social entrepreneurs use emotion-symbolic work for social change. *Acad. Manag. J.* 62 <https://doi.org/10.5465/amj.2017.1488>.
- Urban, G.L., Carter, T., Gaskin, S., Mucha, Z., 1986. Market share rewards to pioneering brands: an empirical analysis and strategic implications. *Manag. Sci.* 32 (6), 645–659.
- Urbano, D., Toledano, N., Domingo, Soriano, R., 2010. Analyzing social entrepreneurship from an institutional perspective: evidence from Spain. *J. Soc. Entrep.* 1 (1).
- Van Alstyne, M.W., Parker, G.G., Choudary, S., 2016. Pipelines, platforms, and the new rules of strategy. *Harv. Bus. Rev.* 94, 16.
- van Praag, H., de Kloet, E., van Os, J., 2004. Stress hormones and depression. In: De Kloet, E.R., van Praag, H.M., van Os, J. (Eds.), *Stress, the Brain and Depression*. Cambridge University Press, pp. 144–224.
- Van Rensburg, J., Veldsman, A., Jenkins, M., 2008. From technologists to social enterprise developers: our journey as 'ICT for development' practitioners in southern Africa. *Inf. Technol. Dev.* 14 (1), 76–89.
- Vanderwerf, P.A., Mahon, J.F., 1997. Meta-analysis of the impact of research methods on findings of first-mover advantage. *Manag. Sci.* 43 (11), 1510–1519.
- Vantilborgh, T., Joly, J., Pepermans, R., 2015. Explaining entrepreneurial status and success from personality: an individual-level application of the entrepreneurial orientation framework. *Psychol. Belg.* X, 1–25. <https://doi.org/10.5334/pb.be>.
- Varadarajan, R., Yadav, M.S., Shankar, V., 2007. First-mover advantage in an internet-enabled market environment: conceptual framework and propositions. *J. Acad. Mark. Sci.* 36 (3), 293–308.
- Varadarajan, R., Yadav, M., Shankar, V., 2014. First-mover advantage in the internet-enabled market environment. In: Martínez-López, F.J. (Ed.), *Handbook of Strategic E-business Management*, pp. 157–185. [https://doi.org/10.1007/978-3-642-39747-9\\_7](https://doi.org/10.1007/978-3-642-39747-9_7).
- Vaska, S., Massaro, M., Bagarotto, EM., Dal Mas, F., et al., 2021. The digital transformation of business model innovation: A structured literature review. *Front. Psychol.* 11, 3557. <https://doi.org/10.3389/fpsyg.2020.539363>.
- Vecchi, V., Casalini, F., Balbo, L., Caselli, S., 2015. Impact investing: a new asset class or a societal refocus of Venture Capital? In: Caselli, S., Corbetta, G., Vecchi, V. (Eds.), *Public Private Partnerships for Infrastructure and Business Development*. Palgrave Macmillan, pp. 275–293.
- Von Hippel, E., 1979. Appropriability of Innovation Benefit as a Predictor. Working Paper.
- Wang, K., Lestari, Y.D., 2013. Firm competencies on market entry success: evidence from a high-tech industry in an emerging market. *J. Bus. Res.* 66 (12), 2444–2450.
- Wirtz, J., Kam Fung So, K., Mody, M., Liu, S.Q., Chun, H.H.E., et al., 2019. Platforms in the peer-to-peer sharing economy. *J. Serv. Manag.* 30 (4), 452–483. <https://doi.org/10.1108/JOSM-11-2018-0369>.
- Zhao, E., Ishihara, M., Jennings, P., 2020. Strategic entrepreneurship's dynamic tensions: converging (diverging) effects of experience and networks on market entry timing and entrant performance. *J. Bus. Ventur.* 35, 1–23. <https://doi.org/10.1016/j.jbusvent.2019.04.001>.
- Zhu, F., Iansiti, M., 2012. Entry into platform-based markets. *Strateg. Manag. J.* 33, 88–106. <https://doi.org/10.1002/smj.941>.

**Jantje Halberstadt** is Full Professor of Economics and Sustainability at the University of Vechta, Germany, where she is also Dean of Studies at the Faculty of Education and Social Sciences. Her main research interests are in the field of entrepreneurship and management, particularly transformational sustainability entrepreneurship. She holds a PhD from the Carl von Ossietzky University of Oldenburg and was Junior Professor for Social Entrepreneurship at the Leuphana University in Lüneburg where she still is Guest Professor. Prof. Halberstadt lectures abroad at different universities and leads several trans- and interdisciplinary research projects within international networks.

**Sophia Kollhoff** is Junior Researcher at the University of Vechta, Germany. She completed a Master's degree in Agriculture and Food Science at the University of Osnabrück, Germany. Her research focuses on (sustainability) entrepreneurship.

**Sascha Kraus** is Full Professor of Management at the Free University of Bozen-Bolzano, Italy, and Distinguished Visiting Professor (SARChI Entrepreneurship Education) at the University of Johannesburg, South Africa. He holds a doctorate in Social and Economic Sciences from Klagenfurt University, Austria, a Ph.D. in Industrial Engineering and Management from Helsinki University of Technology and a Habilitation (Venia Docendi) from Lappeenranta University of Technology, both in Finland. Before, he held Full Professor positions at Utrecht University, The Netherlands, the University of Liechtenstein, École Supérieure du Commerce Extérieur Paris, France, and Durham University, United Kingdom, as well as Visiting Professor positions at Copenhagen Business School, Denmark and at the University of St. Gallen, Switzerland.

**Amandeep Dhir** is Full Professor of Research Methods at University of Agder, Norway. He is also a visiting professor at Norwegian School of Hotel Management, University of Stavanger, Norway. His research appears in the *Journal of Retailing and Consumer Services*, *International Journal of Information Management*, *Computers in Human Behaviour*, *Computers in Industry*, *International Journal of Hospitality Management*, *Journal of Cleaner Production*, *Food quality and preferences*, *Appetite*, *Information Technology & People*, *Australasian Marketing Journal*, *Enterprise Information Systems* and others.