

Value-based bricolage

Resource mobilization in the circular economy

Sascha P. Klein¹ | Verena Liszt-Rohlf² | Patrick Spieth¹ 

¹Technology, Innovation Management and Entrepreneurship, University of Kassel, Kassel, Germany

²Department of Business Studies, FH Burgenland, Eisenstadt, Austria

Correspondence

Patrick Spieth, Technology, Innovation Management and Entrepreneurship, University of Kassel, Mönchebergstr. 1, 34109 Kassel, Germany.

Email: spieth@uni-kassel.de

Editor Managing Review: Xin Tong

Abstract

Circular-born firms face resource constraints first, as they emphasize the use and reuse of materials as an opposite to the linear production system of taking, making, and disposing of resources, and second, due to systemic challenges like lack of scale and information on resources. Given these challenges, entrepreneurs need to find novel solutions for resource mobilization in the circular economy (CE). This study aims to identify how entrepreneurs mobilize resources to accomplish these challenges. With qualitative, multiple-case study research in circular-born firms developing a CE business model (CEBM), we identify four patterns of resource mobilization serving different purposes in the development of a CEBM. While three patterns—resource seeking, material bricolage, and ideational bricolage—are established concepts in entrepreneurship, we identify and conceptualize a fourth unique pattern in the CE: value-based bricolage. By conceptualizing the activity domains of value-based bricolage and examining the motivation and outcomes of each pattern in designing CEBMs, we provide new insights into how solutions to challenges concerning the use of resources in the CE enable circularity.

KEYWORDS

bricolage, circular economy, circular economy business model, multiple-case study, resource mobilization, value-based bricolage

1 | INTRODUCTION

The circular economy (CE) describes a cyclic system of closed loops in industrial ecosystems, turning goods at the end of their lifecycles into resources for other products or services, aiming to minimize waste with system-level change. However, most companies stick to the linear production system of taking, making, and disposing of resources (Lüdeke-Freund et al., 2018). While established firms struggle with implementing truly circular products for various reasons like supply limitations or inferior quality of secondary resources (Corvellec et al., 2022), entrepreneurs increasingly found new ventures to address circularity (Suchek et al., 2022), resulting in the development of CE business models (CEBMs). However, entrepreneurs in the CE face distinct challenges regarding resource constraints stemming from two separate but interacting mechanisms: First, material constraints are emphasized by the self-imposed circularity values and principles that guide the use and interpretation of materials (Kolpinski et al., 2022). Second, entrepreneurs lack resource information on residuals that stem from other industries and also face a lack of scale (Patala et al., 2022; Suchek et al., 2022), that is, there is a lack of established and continuous supply chains that meet the entrepreneur's

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2023 The Authors. *Journal of Industrial Ecology* published by Wiley Periodicals LLC on behalf of International Society for Industrial Ecology.

requirements (Johansson & Krook, 2021). While the first challenge arises from internal circularity values, the latter stems from external environmental contingencies, representing a systemic challenge (Patala et al., 2022). Hence, CE represents a distinct entrepreneurial setting of designing a viable business that hampers traditional ways of resource mobilization (i.e., acquisition of standard resources).

Mobilization of resources, that is, the processes of resource assembly for opportunity execution (Clough et al., 2019), represents a decisive strategic activity to design viable, innovative CEBMs (Susur & Engwall, 2022). Prior research largely neglected how to deal with challenges in circular-born firms (Corvellec et al., 2022), mainly focusing on established firms (Suchek et al., 2022). Therefore, exploring how entrepreneurs in circular-born firms approach resource mobilization represents a blind spot in past research but is essential for understanding how different CEBMs evolve and how entrepreneurs implement circularity (Lüdeke-Freund et al., 2018; Susur & Engwall, 2022). Given these challenges in this special context of resource mobilization, we seek to answer the following research question: How do CE entrepreneurs mobilize resources for encountering self-imposed and systemic resource challenges?

With the findings from the multiple-case study in 25 circular-born firms, we contribute substantially to understanding how entrepreneurs mobilize resources in the CE. The analysis resulted in a novel conceptualization of bricolage that we introduce as *value-based bricolage* that entrepreneurs mainly use by reinterpreting resources and giving new meaning to secondary resources (i.e., residuals) to overcome systemic and self-imposed resource constraints. Value-based bricolage enables workable solutions for designing a CEBM. We directly contribute to the statement by Susur and Engwall (2022) that resource mobilization represents a mechanism for circular business model innovation by specifying concrete activities of value-based bricolage. We also identified other patterns of resource mobilization: material bricolage, resource seeking, and ideational bricolage resulting in a framework of resource mobilization in the CE, which offers explanations for how circular-born firms find solutions to self-imposed resource constraints, shifting attention to trade-offs and constraints in CE, as requested by Corvellec et al. (2022). The findings regarding entrepreneurial resource mobilization in the CE complement research regarding enabling factors of circularity from an ecosystem or incumbent perspective (Patala et al., 2022; Salmi & Kaipia, 2022). Consequently, we contribute to understanding how CE can be an “actual solution to actual problems” Corvellec et al. (2022, p. 429).

2 | LITERATURE REVIEW

2.1 | Resource mobilization in the circular economy

To exploit opportunities through entrepreneurial activities, entrepreneurs need to mobilize resources—“the processes by which entrepreneurs assemble the resources used to execute on an opportunity” (Clough et al., 2019, p. 240), while Susur and Engwall (2022) suggest resource mobilization as an important mechanism for circular innovation. Patala et al. (2022) identified several specific challenges associated with resources in the CE: mutual lack of resource information, lack of scale, and disconnected governance of residuals. These challenges are more prevalent in entrepreneurial settings, as incumbents possess information on the resources and residuals they use and are also the owners of residuals, resulting in control over resources (Patala et al., 2022; Salmi & Kaipia, 2022). Incumbents striving for circularity also possess the human, financial, and material resources needed, whereas circular-born firms often lack the time and experience for external investments from governments and investors (Kolpinski et al., 2022). Furthermore, most studies concentrate on established firms transforming their business for CE, while there is still much research needed to understand circular-born firms (Suchek et al., 2022) and how circular-born firms mobilize resources.

Our literature review reveals that entrepreneurial resource mobilization can be achieved through different resource mobilization behaviors. At the same time, the concept of bricolage is useful in resource-scarce settings, as indicated by prior research (Reypens et al., 2021). Bricolage is an experiential, not predictive approach leading to new uses for and novel combinations of existing resources (Busch & Barkema, 2021). Bricolage can be defined as “making do by applying combinations of the resources at hand” (Baker & Nelson, 2005, p. 333), and involves using resources in a novel way, enabling new sources of value with novel combinations for problem solving (Welter et al., 2016). Another feature of bricoleurs represents their refusal to be constrained by resource limitations and rules on how to use these resources (Reypens et al., 2021). Thus, bricolage is directly related to the reuse of resources that have little or no value to others (Senyard et al., 2014), which is inherently intertwined with the core values in the CE. From its initial definition of bricolage, Lévi-Strauss (1967) describes two types: ideational and material. While ideational bricolage describes a process of recombining “elements of older myths to create new myths serving new functions” (Baker, 2007, p. 697), ideational bricolage often serves to develop innovative strategies in munificent entrepreneurial settings (Senyard et al., 2014). Conversely, material bricolage emphasizes the recombination of resources at hand for opportunity exploitation (Baker & Nelson, 2005). Bricolage is often applied in the early stages of ventures, but difficult to scale, as it might constrain the growth of ventures (Busch & Barkema, 2021). It has been studied in diverse contexts like social businesses (Desa & Basu, 2013), family businesses, and high-tech ventures, which “hints at the potential for broader application of this concept in future research” (Clough et al., 2019, p. 256).

However, although being a practical approach to overcoming resource constraints, bricolage may not be helpful in some situations as it may result in second-best solutions (Shepherd et al., 2020). Entrepreneurs might also seek to “acquire standard resources” (Baker & Nelson, 2005,

p. 353), which is known as resource-seeking behavior (Reypens et al., 2021). Thus, resource-seeking behavior describes a “traditional” approach to mobilizing resources and aims at finding standard resources for its intended purpose, contrasting the focus of bricolage (Baker & Nelson, 2005).

Our literature review highlights that CE entrepreneurs face several distinct challenges associated with resource flows that stem from both—values and principles in the CE and systemic challenges (Patala et al., 2022; Vermunt et al., 2019), requiring entrepreneurs to engage in resource mobilization beyond the goal-directed acquisition of standard resources. For the practical implementation of circularity values and principles, entrepreneurs need to design viable CEBMs, representing how firms create, capture, and deliver value in the CE (Lüdeke-Freund et al., 2018). Although researchers lately engaged in identifying barriers and enablers of CEBMs, ranging from internal capabilities (Kolpinski et al., 2022), to administrative and governmental barriers (Suchek et al., 2022), studies regarding how entrepreneurs mobilize resources remain scarce (for an overview, see Appendix Table A.1).

3 | METHOD

3.1 | Research design and sample

For exploring the research question, we used a qualitative research approach with a multiple-case study analysis, investigating entrepreneurs (in Schumpeter's sense of destroying the old structure [linear production] to create a new one) and their ventures developing their CEBMs from scratch. We chose circular-born firms that aim to deliver circular value propositions by exploring CE opportunities from their foundation (Suchek et al., 2022), as circular-born ventures face unique challenges associated with the lack of resource information, lack of scale, and self-imposed idealistic restrictions (Suchek et al., 2022). This is less of a challenge for incumbents with broader access to and ownership of resources (Salmi & Kaipia, 2022). For instance, incumbents like H&M possess information on their resources and do not restrict their use for ideological reasons. Therefore, we use a theoretical sample serving multi-case theory building (Eisenhardt, 1989; Glaser, 2017).

Consequently, identifying the phenomenon of interest, that is, resource mobilization approaches in the CE, guided the sampling approach. We screened several websites to build an initial list of German CE firms, resulting in a total of 180. We checked the list for specific criteria to identify the phenomenon of interest (Patton, 1990): entrepreneurs needed to operate in the CE from the beginning of foundation, provide evidence for lack of established resource flows (identified in secondary data), and have a viable CEBM indicating successful resource mobilization. This strategy resulted in a final sample of 25 firms, described in Table C.1 (Appendix).

3.2 | Data collection

We collected 32 semi-structured interviews with entrepreneurs and executives in the CE. All interviews were recorded and transcribed and lasted, on average, 45 min. We used a semi-structured interview guide consisting of open questions related to specific events, decisions, and actions to gather open-ended narratives on the role resource play in their CEBM (Eisenhardt & Graebner, 2007). Theoretical saturation occurred when we identified how entrepreneurs approach trade-off decisions concerning resource constraints. For analyzing the CEBMs, we collected rich archival data comprising BM descriptions, news media articles, social media channels, blogs, and website documents in 148 pages. We used this data to verify CEBMs and the possibility of established supply chains.

3.3 | Analysis

The process of analyzing consisted of several iterations between data sources, prior research, and emerging concepts (Eisenhardt & Graebner, 2007). Triangulating data enabled writing detailed case descriptions to familiarize ourselves with each case (Eisenhardt, 1989) and further understand the CEBMs and resource flows of the firms. We began with inductive coding, using *in vivo* codes that build first-order codes (Miles et al., 2014). Based on these inductively derived codes, similarly to Reypens et al. (2021), we developed a coding scheme for values, bricolage, and resource seeking, as described in Tables 1 and 2. For the further cross-case analysis (Eisenhardt, 1989), we compared patterns of values weaving into strategy and patterns of resource mobilization by comparing firms with different extents of values (low, moderate, and high) based on the number of codes for each value category (for a detailed explanation please see Table A.2) with associated resource mobilization approaches.

4 | FINDINGS

The interview and secondary data analysis reveal that all firms engaged in resource mobilization behavior, while circularity values weave into these processes to different degrees. We found circularity values to weave into decisions at the operational level, whereas in some cases, values

TABLE 1 Coding scheme for resource mobilization behaviors.

Construct	Textual indicators	Representative quote
A text segment is coded as evidential for bricolage when at least one of the following conditions is met:		
<i>Bricolage</i>	Entrepreneurs making do. The entrepreneurs use their own or already existing resources to be able to act or find a way to deal with a problem (Baker & Nelson, 2005; Ott et al., 2017).	“Especially the university and the institute don’t have any, just don’t have the need to be involved any further. They really only do it because they want to support us. We can just use all that. We can use their materials. They also buy us chemicals and they don’t want anything in return.” (Firm B)
	Entrepreneurs use minimal resources (Ott et al., 2017).	“because of the situation right now financially and so on, um, of course, because of what’s going on right now. So everything that is possible right now, I try to do. For example, I even tore down the warehouse where the T-shirts were [...] in order to lower just first my fixed costs as far as possible. To go into hibernation, so to speak.” (Firm N)
	Entrepreneurs use resources previously undervalued or underused but readily available resources (Busch & Barkema, 2021; Lévi-Strauss, 1967) and use the resources in a way which was not originally intended for.	“But we also see, for example, that this has also met us, that this topic of ghost nets is somehow a big one for us and now we are in the process of doing a project together with NGO A on the topic of ghost nets, where we actually collect ghost nets on the high seas, so that also exists.” (Firm R)
	Entrepreneurs disregard the limitations of commonly accepted definitions of practices, material inputs, and standards (Lévi-Strauss, 1967) and make plans and do something to overcome those limitations (Di Domenico et al., 2010).	“... and then try it first. Okay, what is the result if we simply transfer the process that we are currently using to this, to this raw material? And then we will see accordingly: Okay, how is that? What is the result?” (Firm B)
A text segment is coded as evidential for resource seeking when at least one of the following conditions is met:		
<i>Resource seeking</i>	Entrepreneurs focus on goal-directed acquisitions of resources to planned applications which fit the requirements (Busch & Barkema, 2021; Desa & Basu, 2013).	“So in our case it was just that we wanted to acquire these recycling systems ourselves, and then to really go specifically to companies and ask, ‘Hey, okay, look, how much do you actually pay for your garbage collection? I’ll make it five percent, ten percent cheaper for you.’ Accordingly, I would even get money for the actual raw material.” (Firm N)
	Entrepreneurs take opportunities without regard to the resources they currently control they acquire new resources (Baker & Nelson, 2005).	“Raw materials play a major role. That’s why we also plan to invest part of our profits in land or in areas, so that we can sustainably generate our own supply of raw materials and become independent” (Firm A)
Coding approach: Inspired by Reypens et al. (2021), we developed a coding scheme for bricolage and resource-seeking behavior for analyzing the use of different resource mobilization behaviors. We aggregated the codes from the initial in vivo coding to codes for bricolage and resource seeking, which we developed based on prior categorizations (Baker & Nelson, 2005; Reypens et al., 2021) and the initial coding categories. The codes have been discussed in the research team (between two authors) and negotiated.		

weave into more strategic decisions. The cross-case analysis allows us to derive patterns of resource mobilization behavior and circularity values (Eisenhardt, 2021). We synthesized each pattern’s distinct motivation and outcome. We found four patterns of resource mobilization behavior, which we term in line with prior research resource seeking (Busch & Barkema, 2021), material bricolage (Welter et al., 2016), and ideational bricolage (Lévi-Strauss, 1967) and outline these patterns, motivation, and outcomes in the context of CE. Proof quotes for the coding schemes are presented in Table 1 regarding resource mobilization, Table 2 regarding circularity values, and Table 3 regarding the purposes of the resource mobilization patterns. However, we also found a novel pattern outlined below, which we conceptualize as value-based bricolage. The patterns do not occur in isolation but can be combined, although our coding scheme and the categorization into low and high levels of value-embedding and resource mobilization behavior allowed us to subdivide four patterns (Figure 1).

We will outline the patterns in the following. We will briefly present the concepts of resource seeking, material bricolage, and ideational bricolage while presenting value-based bricolage and its implications in more depth.

4.1 | Resource-seeking, material bricolage, and ideational bricolage patterns

The first pattern of *resource seeking* we identified emphasizes the goal-directed acquisition of standard resources for their intended purpose in which resources are not used in novel ways. It is motivated by a lack of necessary resources for running the business, characteristic of entrepreneurial

TABLE 2 Coding scheme for value categories.

Value category	Textual indicators	Representative quote
V3: <i>Defined ideas of what is desirable (ideology) (high influence on CEBM design (81 mentions)</i>	Sustainable values are formulated as core conceptions of the desirable way of doing business following sustainable or circular thoughts (Rindova & Martins, 2018).	"Our main mission is that we want to sell sustainable products to reduce waste. And this idea that you&that this is important, that you do something like this, that you do something for the environment or at all about&dealing with the fact that there is the problem: climate change." (Firm D)
V2: <i>Values influence selection of modes of action, means and goals (medium influence on CEBM design) (83 mentions)</i>	Sustainable values influence strategic choices of modes of action, means, and goals (Ott et al., 2017; Rindova & Martins, 2018).	"The special thing about the concept is that I work exclusively with sustainable and ecological materials and recycles that come exclusively from Europe, although the cotton does not grow in Europe, but of course in the warmer regions". "But there I just also pay attention to ecologically produced goods. The whole thing is produced in Germany." (Firm F)
V1: <i>Criticism of linear economy and politics (low influence on CEBM) (67 mentions)</i>	Sustainable values are deeply held and have powerful impacts on cognition. Sustainable values constitute cognitive resources with pervasive effects on attention and interpretation (Rindova & Martins, 2018).	"Of course, you can now also shred textiles, so to speak, and then make new fibers out of them somehow. The big companies are also advertising this. With their great, sustainable campaigns, that you make something out of old things again and so. But it's also kind of questionable when you hear that H&M is burning their collections because there's so much overproduction or something. So that's more greenwashing than anything else, I think." (Firm Q)

Coding approach:

We developed a coding scheme similar to the approach of coding resource mobilization behaviors. The evolved coding scheme captures how values concern specific strategic decisions in the strategy formation and CEBM design of the firm. As presented above, the codes comprise text segments criticizing politics, customer behavior, and society in general regarding consumption and linear production with no reference to business practices or activities, values influencing specific single firm activities like product development, and text segments reflecting the overall mission of each firm affecting the whole CEBM design.

settings. Intended purposes are, for example, for growing the business, mainly considering financial resource acquisition approaches (e.g., crowdfunding).

"Of course, I am still looking for investors. (...) Accordingly, (...) I can also say quite clearly that the financial resources are simply lacking for further expansion". (Firm N)

In this pattern, circularity values did not influence resource mobilization beyond providing financial prerequisites for entrepreneurial activities and producing circular products.

Most cases that mentioned material bricolage engaged in upcycling resources and used them for product design and development. Thus, discarded resources representing waste for other companies are used at no or low costs. Material bricolage in our study focuses on product development by using and recombining resources (personal skills, knowledge, and network) at hand for designing and producing circular products, as the example from firm F shows:

"I am an apparel engineer. I also worked in the apparel industry for a long time and did all the product development, etc. myself." (Firm F)

Material bricolage is mainly motivated by a lack of human (knowledge, skill) resources required for product development. Both—resource seeking and material bricolage—help to overcome resource constraints, but their outcomes are instead targeted at the operational level.

Conversely, we found the pattern of ideational bricolage in the form of questioning activities in the linear economy to develop a mission emphasizing circularity in all strategic activities (driven by idealistic values, see category V3 in Table 2). In this pattern, entrepreneurs did not use ideational bricolage to solve resource challenges but to create new myths about the firm's mission, creating an organizational identity.

"Sustainability is important to me personally. (...) And for me, that doesn't stop with food but also transfers to clothing and to my own lifestyle, and that's why it was always important to me personally that the business model is also like that." (Firm P)

In our examples, ideational bricolage is motivated by the failure of the linear economy and creates the mission and mindset within the firm, which subsequently can triple down to other strategic and operational activities. Thus, instead of focusing on using specific resources, ideational bricolage

TABLE 3 Proof quotes for resource mobilization patterns.

Pattern	Purpose of resource mobilization	Representative quotes
<i>Resource seeking</i>	Acquisition of standard resources for improving products/services	"So, with semiconductors, I'm looking at it a bit right now, because there are organic semiconductors. And that would actually enable us, through this electronic support that you would actually have or could (...) support the movement, for people who have a muscle weakness, genetic or disease-related and so on. So it also goes a bit into the medical field, but there is still a lot of research to be done." (Startup N)
	Acquisition of standard resources for enhancing production	"Of course, I am still looking for investors. (...) Accordingly, I'm keeping the company going for the time being because, as I said, I can also say quite clearly that the financial resources are simply lacking for further expansion." (Startup N)
	Acquisition of standard resources for initiating production	"The crowdfunding campaign was then finally about getting a first small production on its feet or is it still about getting the first small production on its feet, which is now also going very well." (Startup F)
<i>Material bricolage</i>	Use of existing networks for product development	"My research for manufacturing plants (...) I have to be honest and say that I don't yet know exactly how best to research this. But one point was that I'm now just reviving my old contacts from the textile world via social media. And from this, perhaps something else will arise again. And that is now the point of how I proceed." (Startup H)
	Use of resources at hand for product development	"And we also have the bow ties& Well, these are the kind you know when you're wearing a suit, for example. One of the seamstresses from [Startup D] came up with the idea at a Christmas party, who just wanted to make something chic for the Christmas party and took cuttings from the airbags and sewed bow ties from them." (Startup D)
	Adaption of skills and knowledge from other industries (use of resources at hand) for product development	"I am an apparel engineer. I also worked in the apparel industry for a long time and did all the product development, etc. myself. Basically, I do everything in this company myself." (Startup F)
<i>Ideational bricolage</i>	Establishing a collective sustainability mindset	"We'll have to see whether [...] investors will also join in, or whether they will perhaps only catch up at some point. But we are completely driven by our sustainable mindset. We are problem solvers, do-gooders, whatever you want to call it." "We are very, very idealistically driven and absolutely not economically." (Startup B)
	Building beliefs on the CE business model design	"Sustainability is important to me personally. I've been vegan for, God, seven years or so in the meantime or six years and for me that goes hand in hand. (...) And for me that doesn't stop with food, but also transfers to clothing and to my own lifestyle, and that's why it was always important to me personally that the business model is also like that." (Startup P)
	Circularity principles guiding organizational identity	"The second core principle of ours: Huge quantities, high quality, low prices. And of course, many people in the industry don't like that. So we're totally disruptive, because we say that only when prices are low can farmers afford our substrate, or plastics processors, and so on. If you talk to the industrial companies, they all say: "Of course we want to save mankind. But it must not cost more than before." (Startup A)

supports the creation of "organizational uniqueness stories" (Baker, 2007), which is supported by the data in our cases. Table 3 displays proof quotes for the patterns.

4.2 | Value-based bricolage

Value-based bricolage builds on a strategic level and is associated with finding workable solutions to self-imposed and systemic resource constraints (driven by a combination of value categories V2 and V3, Table 2). In contrast, ideational bricolage emphasizes building an overall mission. In contrast to material bricolage, value-based bricolage is motivated by overcoming the challenges of resource constraints created by self-imposed ideational values *and* systemic challenges. Value-based bricolage aims at finding novel solutions with resources at hand. It leads to solutions in trade-offs between linear and CE thinking and is directly associated with value creation for circularity. Furthermore, shared (circularity) values represent a resource being recombined with principles from other logics (commercial) to construct new meanings for resources. We found value-based bricolage to span around four activity domains, presented in the following. These activity domains are likely to occur in parallel but can also occur in isolation.

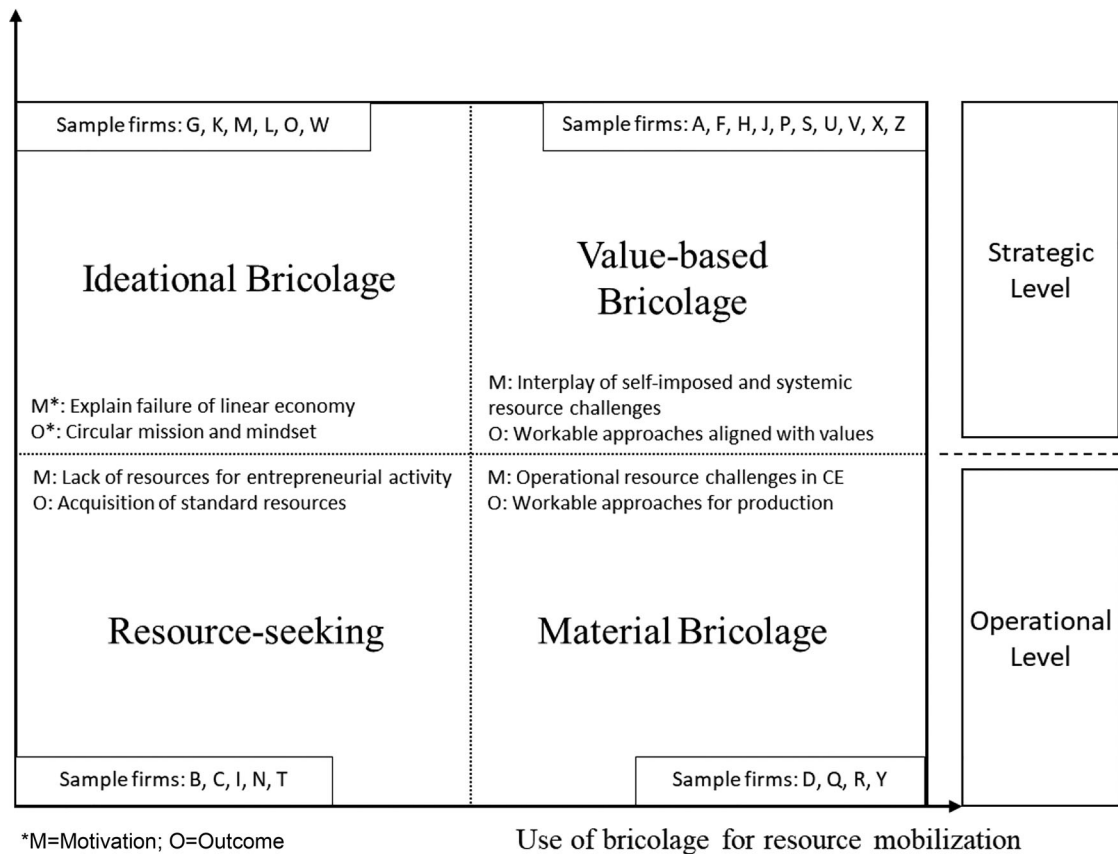


FIGURE 1 Patterns of resource mobilization behavior.

4.2.1 | Making do with the right resources and using resources at hand

First, value-based bricolage is goal directed. Although prior conceptualizations describe the goal-directed use or acquisition of resources as a cornerstone of resource-seeking behavior (Busch & Barkema, 2021), value-based bricolage differs from both. Whereas resource seeking is directed at using standard resources for their intended purpose, value-based bricolage concerns making do with resources at hand that are “right” considering circularity values. In this sense, resources must align with circular values and fulfill specific criteria. This aspect is vital to distinguish between material and value-based bricolage, as the former does not restrict the “making do” of resources. Therefore, value-based bricolage emphasizes *goal-directed* resource use—that is, serving the goal of circular value creation—without acquiring or using standard primary resources. Firm A offers an example on its website (“Our solidarity-based approach means openness to all comrades-in-arms in the fight against climate escalation. To this end, we use old knowledge, combine it with our own experience and bring it into a new, industrial context”). Thus, bricolage activities are guided by ideational values and requirements for resource use that can result in novelty. Firm D (emphasizing on their website fair production in Europe and upcycling of waste) which incorporates circularity values into their strategy, the founder explains how the circularity principles enabled them to create further value despite the initial product (i.e., backpacks made from waste) by relying on resources at hand (from customers):

“And we have also introduced a recycling system within our products, so that we take back backpacks that are no longer covered by the warranty and that are no longer appealing. (...) So we have also introduced a new circular economy.” (Firm D)

This statement meaningfully exemplifies the outcome of value-based bricolage, as it encounters the systemic challenges in the CE (established supply chains, scalability, and lack of information on secondary resources) under consideration of circularity values. Ultimately, the interplay enables an innovative solution to solve systemic challenges in the CE. Furthermore, value-based bricoleurs also acknowledge the advantages of making do with resources at hand determined by circularity values:

“That is perhaps the great advantage of upcycling and locally made, because ... well I have none, almost no investment. The material is practically free. So I don’t have to buy it.” (Firm J)

Moreover, despite material input provided at low or no costs, value-based bricolage emphasizes using existing networks and partners to create solutions. Consequently, value-based bricolage also spans the activity domain of using resources at hand. However, as for the resources, network

partners must also fulfill certain criteria, share values, and/or jointly contribute to value creation. Despite circularity values being a source of opportunities and being vital for collaboration with network partners, the circularity values can be an approach to overcoming systemic challenges of scale, as the founder of firm J mentions:

"I keep getting new calls and new requests. And I have so many ties. So (...), I don't know if I'll ever be able to handle all the resources that I have" (Firm J)

Also, other cases report receiving resources from customers for free, while this aspect also underlines the lack of a continuous supply chain. Another example of value-based bricolage can be found in the case of firm A, which struggled to finance the cost-intensive manufacturing plants for their pyrolytic carbonization technology to produce biocarbon. After relying on resource-seeking behavior at the beginning, that is, the search for investors ("We wanted to have investors in"—Co-founder firm A), firm A did not find new investors for further production plants. However, firm A developed a novel approach to overcome the resource constraints that center around giving a resource new meaning by relying on sustainability values. In detail, despite producing biocarbon that can be used as a raw material for other products, firm A came up with a recombination of circularity values and economic logic to finance new production plants by certifying CO₂ sinks in the future and selling CO₂ certificates to firms. In this approach, values of circularity and sustainability became a resource to recombine with elements from commercial logic to create solutions.

Hence, value-based bricolage emphasizes making do with resources that might not result in economically optimal solutions. In contrast, value-based bricolage supports finding solutions that need to be aligned with circularity values. Consequently, circular values shared with stakeholders like suppliers, networks, and customers represent an essential activity domain of value-based bricolage, as like-minded stakeholders actively support value creation with resources at no cost. This also makes resource-seeking behavior at some point obsolete.

4.2.2 | Giving new meaning to undervalued resources

Another important activity domain of value-based bricolage is to give new meaning to resources, which comes along with using undervalued or discarded resources and results from entrepreneurs' interpretation of resources. This approach mostly spans another activity domain of value-based bricolage: using resources at hand to give new meaning. However, giving new meaning to resources rests on the values and assumptions of circularity shared by various stakeholders, as the value offered by the firms is partially enabled by the fact that these resources are discarded by others:

"So the added value is, of course, that we use, let's say, product that actually can no longer be used. These car tire soles." (Firm K)

In consequence, the benefit of using discarded resources needs to be transparently communicated. It especially needs to be perceived as a benefit by stakeholders, that is, values and interpretations of resources need to be shared across various stakeholders to represent a comparison to the competition by the linear economy. Hence, values determine a prerequisite for value-based bricolage, as discarded resources have no or low value in the linear economy per definition. Consequently, an important difference between material and value-based bricolage is that value-based bricolage enables solving systemic resource challenges by relying on circularity values. Beyond giving discarded resources a new meaning, the example of cases in our sample shows that the value proposition centers around the broader contribution to society. Specifically, "giving a new meaning" to resources needs to be appreciated by customers, meaning that customers need to share circularity values and resource interpretation to understand the value contribution.

4.2.3 | Refusal to be constrained by limitations of the linear economy

The quotes above also indicate a fourth aspect of value-based bricolage: the refusal to be constrained by the limitations of the linear economy. However, in contrast to material bricolage, value-based bricolage is used not only to overcome systemic restrictions of resource scarcity but also to overcome restrictions by norms. Refusing to be constrained by the assumptions and principles of the linear economy is intertwined with the other activity domains based on the entrepreneurs' interpretation of resources. Moreover, refusing to be limited by assumptions of the value of resources in the linear economy can be described as a vital asset for value creation ("revolution"):

"To fight the climate crisis, it is necessary to fuse nature, technology and science. [Firm Z] is the result of this sum. Together, we are starting a sustainable revolution in the textile industry." (Firm Z, corporate document)

In sum, value-based bricolage spans four activity domains associated with circularity values (Table 4). However, value-based bricolage differs from material and ideational bricolage regarding the underlying motivation and outcomes. Consequently, value-based bricolage results in workable

TABLE 4 Concepts of bricolage and value-based bricolage.

	<i>Bricolage</i>	<i>Value-based bricolage</i>
<i>Motivation</i>	Resource scarcity	Interplay between values of sustainable/social value creation and systemic resource challenges
<i>Activity domains</i>	<ol style="list-style-type: none"> 1. Making do with what is available (Baker, 2007) 2. Use of undervalued resources and recombination of resources in novel ways (Baker & Nelson, 2005) 3. Use of resources "at hand" (Baker & Nelson, 2005) 4. Refusal to be constrained by limitations of resource scarcity (Di Domenico et al., 2010) 	<ol style="list-style-type: none"> 1. Making do with "right" resources that are aligned with values, fulfilling criteria based on circularity principles 2. Use of resources "at hand" 3. Giving new meaning to undervalued resources 4. Refusal to be constrained by limitations of linear economy and conventional resource use
<i>Outcomes</i>	Finding workable, but imperfect approaches to opportunities and problems (Baker, 2007)	Finding workable approaches that are aligned with values for social value creation

solutions that can fulfill the requirements based on circularity and not economic criteria. In contrast to material bricolage, value-based bricolage does not favor second-best solutions regarding value alignment. Moreover, value-based bricolage relies on networks, customers, and other stakeholders that share values, meaning that value-based bricolage emphasizes an ecosystem (systemic) perspective within the CE. Table 4 contrasts bricolage and value-based bricolage to highlight its conceptualization and difference from the bricolage concept in the linear economy.

Figure 1 presents the resulting framework of entrepreneurial resource mobilization in the CE based on two dimensions: the use of bricolage for resource mobilization and the extent (circularity) of values weaved into these patterns. This allows us to distinguish between the behaviors regarding the motivation and intended outcomes affecting operational and strategic levels. While material bricolage mainly affects product development and improvements, ideational bricolage builds the firm's mission. The framework also offers the assignment of the circular-born firms to the predominant use of these patterns. In sum, the analysis indicates that value-based bricolage is motivated by and helps to overcome the interplay between systemic resource challenges (e.g., lack of scale) and self-imposed restrictions (based on circularity principles), resulting in approaches that influence the CEBM design.

5 | DISCUSSION

In our analysis of how circular-born firms mobilize resources in a self-imposed resource-constrained context, we find that entrepreneurs may employ four different patterns of resource mobilization behavior. We identified three of these patterns—resource seeking, material bricolage, and ideational bricolage—that have been conceptualized and investigated in prior research in conventional commercial organizations in the linear economy (Reypens et al., 2021). We confirm prior literature that identified different purposes of these resource mobilization behaviors in resource-scarce environments (Baker & Nelson, 2005; Di Domenico et al., 2010; Reypens et al., 2021). However, we contextualized the motivation and outcomes of these behaviors and mapped them to the challenges in the CE. Furthermore, we identified a fourth pattern, which does not fit established concepts. This pattern stems from entrepreneurial reinterpretations of resources based on circularity values to encounter (systemic) resource challenges in the CE, which we conceptualize as value-based bricolage. We used the original definition and elements of bricolage (Baker & Nelson, 2005; Di Domenico et al., 2010) and adapted these according to the analysis of the empirical findings in the CE context. Finally, we define value-based bricolage as *the process through which entrepreneurs and/or executives use shared values of various stakeholders to recombine resources at hand as a means for finding solutions to opportunities and organizational problems to create social and/or sustainable value*. It spans four specific activity domains derived from the empirical findings: the "making do" of entrepreneurs and executives with the "right" resources (1) that need to comply with circularity values to find solutions for social value creation by giving new meaning to discarded resources according to linear economy principles (2). Thereby, value-based bricoleurs use resources at hand that comply with circularity values (3), refusing to accept limitations that arise from norms and principles in the linear economy (4). For these activity domains, we used the terms and wording from the original bricolage concept (Baker & Nelson, 2005), but conceptualized these within the context of CE based on our empirical findings.

By employing a BM perspective (Lüdeke-Freund et al., 2018), we found that the behaviors are differently motivated (i.e., what is the problem addressed) and result in different outcomes regarding the CEBM. Material bricolage and resource-seeking behavior are predominantly used for operational activities like product development, supporting the effective operational execution of the CEBM's activities. Ideational bricolage and value-based bricolage address strategic challenges (creating a mission, lack of scale resources, and self-imposed restrictions) in the CE (Patala et al., 2022; Vermunt et al., 2019). Value-based bricolage enables entrepreneurs to find solutions for exploiting opportunities, supporting the design and development of a CEBM. Moreover, the findings indicate that ideational bricolage builds the venture's identity and mission, while value-based bricolage addresses the interplay of self-imposed resource constraints and systemic resource challenges that influence the development of a CEBM.

5.1 | Theoretical implications

The findings offer novel insights and contribute to extant research in two major realms: solutions for systemic challenges in entrepreneurial resource mobilization in the CE and bricolage in entrepreneurial settings.

First, we extend research regarding CE by showing positive approaches that help to accomplish possible trade-offs between resource availability and circularity values instead of making one-sided assumptions of a win-win-win solution in the CE (Corvellec et al., 2022). However, the CE faces several systemic challenges (Patala et al., 2022), causing incumbent firms to struggle to transform their BMs into CEBMs. Therefore, much prior research investigated systemic approaches and strategies for incumbents to promote a transformation to a CE, advocating an ecosystem perspective (Kanda et al., 2021; Patala et al., 2022). As circular-born firms represent an essential part of CE ecosystems contributing with innovative CEBMs (Kolpinski et al., 2022), we complement this research stream first with an individual, entrepreneurial perspective of solving resource challenges. Second, we directly respond to recent calls from Suchek et al. (2022) to investigate how circular-born firms overcome challenges in the CE. With our research focus, we also complement recent suggestions of resource mobilization as a mechanism for circular business model innovation (Susur & Engwall, 2022). Thus, we support and extend this assumption with concrete activities for the transition to CEBMs that also offer practical implications for established firms seeking to transform their business model (Susur & Engwall, 2022).

From the analysis, we can confirm prior research that identified financial (Vermunt et al., 2019) and technological barriers (Kolpinski et al., 2022) in the implementation of CE. We extend research on the barriers to designing CEBMs by suggesting concrete approaches actually to overcome these barriers (Vermunt et al., 2019). Specifically, we extend research that identified internal enablers of developing CEBMs. For instance, the resource mobilization patterns can act as internal capabilities supporting CEBM designs identified by Kolpinski et al. (2022) like mission alignment, culture (i.e., through ideational bricolage), and competencies (i.e., through value-based bricolage). Furthermore, we complement the findings by Kolpinski et al. (2022), who found that “inner drive, mission, vision and motivation” of entrepreneurs help to overcome challenges in the CE by specifying concrete approaches and activities stemming from the interplay of the “inner drive” and systemic challenges. We also found the firms in our sample to rely on shared values with stakeholders to recombine resources when using value-based bricolage. This is in line with prior research in the CE context, highlighting the role of network building (Susur & Engwall, 2022) in enabling CEBMs and stakeholder coordination for implementing CE ecosystems (Kanda et al., 2021; Patala et al., 2022). We add to this ecosystem perspective with the notion that circular-born firms rely on stakeholder relationships to overcome resource constraints like lack of scale. Thus, firms that developed their CEBM with value-based bricolage will likely emphasize network building in a CE ecosystem. Therefore, value-based bricolage supports the notion of Perey et al. (2018), who found that revaluing waste requires joint actions between actors. We contribute to the recent findings of Patala et al. (2022) by suggesting an approach that might support polycentric governance of resources, as value-based bricolage emphasizes leveraging shared values between stakeholders and diverse actors.

Despite the contribution to CE research, we extend research concerning bricolage (Baker, 2007; Reypens et al., 2021) and offer a new theoretical perspective on bricolage by conceptualizing value-based bricolage. In detail, by defining the concept and determining the activity domains spanned by value-based bricolage, we extend established concepts like material bricolage (Baker & Nelson, 2005) and ideational bricolage (Lévi-Strauss, 1967) and explain the conceptual differences between these concepts (Table 4). With the approach of value-based bricolage, we complement prior research that seeks to understand how hybrid organizations develop viable BMs (Smith & Besharov, 2017) by explaining how ideational and value-based bricolage support the development of the CEBM. As prior research mainly considers bricolage to be helpful in resource-scarce environments (Ciambotti & Pedrini, 2021), we challenge assumptions about the use of bricolage as none of our cases operated in a resource-scarce environment in terms of resource availability for general entrepreneurial activities, low quality, or high costs (Ciambotti & Pedrini, 2021; Di Domenico et al., 2010). However, firms in the CE restrict their use of resources for ideational reasons, which is reinforced by systemic resource challenges (Patala et al., 2022). Thus, we show that bricolage is also typical in the CE. Value-based bricolage can also contribute to understanding BM development in other entrepreneurial settings characterized by heterogeneous value logics (Laasch & Pinkse, 2019), including governmental, religious, and family logics (Thornton & Ocasio, 1999). In sum, with the concept of value-based bricolage and identifying the purpose of different resource mobilization patterns, we answer calls to shed light on how resource mobilization in circular-born firms helps to design CEBMs (Kolpinski et al., 2022; Susur & Engwall, 2022).

5.2 | Managerial implications

We provide evidence for how entrepreneurs overcome systemic and self-imposed resource challenges with resource mobilization patterns and show how value-based bricolage enables entrepreneurs to design CEBMs. Thus, we give entrepreneurs a better understanding of managing constraints and creating value. By defining the activity domains of value-based bricolage with concrete examples from our data, we offer managers guidelines on how circularity or social values can be leveraged to develop creative solutions, adding to the strategies suggested by Ciambotti

and Pedrini (2021). This might also help established firms to transform their BM into a CEBM. We also offer insights for entrepreneurs in both resource-constrained environments and self-imposed resource-constrained contexts by explaining how different forms of bricolage and resource seeking can serve different functions in strategy formation in entrepreneurial settings, which helps entrepreneurs to use patterns for specific purposes.

5.3 | Limitations and future research

Although we sought to increase the generalizability of our findings with an appropriate sampling strategy to rule out other explanations for our findings, this study is not without limitations. As case-based research with small sample sizes is context-specific, future research should investigate the concept of value-based bricolage in other contexts to test the generalizability of the concept. For instance, how does value-based bricolage occur in different contexts of hybrid logics, in which commercial logic is combined with family or religious logic (Laasch, 2017)? Furthermore, as the usefulness of bricolage for scaling has been questioned by many researchers, being a temporary approach, we encourage future researchers to investigate the consequences of value-based bricolage. For doing so, the development of a measurement scale to test relationships between value-based bricolage and venture performance or other outcomes can increase the generalizability of the concept and create novel insights regarding the outcomes of value-based bricolage.

Furthermore, we conducted interviews at one point, relying on narratives from past events. Although we sought to mitigate this issue by constantly checking narratives with secondary material like media reports and website documents, we cannot fully eliminate retrospective biases. Thus, we encourage future research using longitudinal qualitative data to investigate and verify the use of the patterns we found over time.

ACKNOWLEDGMENTS

Open access funding enabled and organized by Projekt DEAL.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Patrick Spieth  <https://orcid.org/0000-0002-4408-1768>

REFERENCES

- Baker, T. (2007). Resources in play: Bricolage in the Toy Store(y). *Journal of Business Venturing*, 22(5), 694–711. <https://doi.org/10.1016/j.jbusvent.2006.10.008>
- Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, 50(3), 329–366.
- Busch, C., & Barkema, H. (2021). From necessity to opportunity: Scaling bricolage across resource-constrained environments. *Strategic Management Journal*, 42(4), 741–773. <https://doi.org/10.1002/smj.3237>
- Ciambotti, G., & Pedrini, M. (2021). Hybrid harvesting strategies to overcome resource constraints: Evidence from social enterprises in Kenya. *Journal of Business Ethics*, 168(3), 631–650. <https://doi.org/10.1007/s10551-019-04256-y>
- Clough, D. R., Fang, T. P., Vissa, B., & Wu, A. (2019). Turning lead into gold: How do entrepreneurs mobilize resources to exploit opportunities? *Academy of Management Annals*, 13(1), 240–271. <https://doi.org/10.5465/annals.2016.0132>
- Corvellec, H., Stowell, A. F., & Johansson, N. (2022). Critiques of the circular economy. *Journal of Industrial Ecology*, 26(2), 421–432. <https://doi.org/10.1111/jiec.13187>
- Desa, G., & Basu, S. (2013). Optimization or bricolage? Overcoming resource constraints in global social entrepreneurship. *Strategic Entrepreneurship Journal*, 7(1), 26–49. <https://doi.org/10.1002/sej.1150>
- Di Domenico, M., Haugh, H., & Tracey, P. (2010). Social bricolage: Theorizing social value creation in social enterprises. *Entrepreneurship Theory and Practice*, 34(4), 681–703. <https://doi.org/10.1111/j.1540-6520.2010.00370.x>
- Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, 14(4), 532–550.
- Eisenhardt, K. M. (2021). What is the Eisenhardt method, really? *Strategic Organization*, 19(1), 147–160. <https://doi.org/10.1177/1476127020982866>
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25–32.
- Glaser, B. (2017). *The discovery of grounded theory*. Routledge. <https://doi.org/10.4324/9780203793206>
- Johansson, N., & Krook, J. (2021). How to handle the policy conflict between resource circulation and hazardous substances in the use of waste? *Journal of Industrial Ecology*, 25(4), 994–1008. <https://doi.org/10.1111/jiec.13103>
- Kanda, W., Geissdoerfer, M., & Hjelm, O. (2021). From circular business models to circular business ecosystems. *Business Strategy and the Environment*, 30(6), 2814–2829. <https://doi.org/10.1002/bse.2895>

- Laasch, O. (2017). Beyond the purely commercial business model: Organizational value logics and the heterogeneity of sustainability business models. *Long Range Planning*, 51, 158–183. <https://doi.org/10.1016/j.lrp.2017.09.002>
- Laasch, O., & Pinkse, J. (2019). Explaining the leopards' spots: Responsibility-embedding in business model artefacts across spaces of institutional complexity. *Long Range Planning*, 53, 101891. <https://doi.org/10.1016/j.lrp.2019.101891>
- Lévi-Strauss, C. (1967). *The savage mind*. University of Chicago Press.
- Lüdeke-Freund, F., Gold, S., & Bocken, N. M. P. (2018). A review and typology of circular economy business model patterns. *Journal of Industrial Ecology*, 23(1), 36–61. <https://doi.org/10.1111/jiec.12763>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE.
- Ott, T. E., Eisenhardt, K. M., & Bingham, C. B. (2017). Strategy formation in entrepreneurial settings: Past insights and future directions. *Strategic Entrepreneurship Journal*, 11(3), 306–325. <https://doi.org/10.1002/sej.1257>
- Patala, S., Albareda, L., & Halme, M. (2022). Polycentric governance of privately owned resources in circular economy systems. *Journal of Management Studies*, 59, 1563–1596. <https://doi.org/10.1111/joms.12810>
- Patton, M. (1990). *Qualitative evaluation and research methods*. SAGE.
- Perey, R., Benn, S., Agarwal, R., & Edwards, M. (2018). The place of waste: Changing business value for the circular economy. *Business Strategy and the Environment*, 27(5), 631–642. <https://doi.org/10.1002/bse.2068>
- Reypens, L., Bacq, S., & Milanov, H. (2021). Beyond bricolage: Early-stage technology venture resource mobilization in resource-scarce contexts. *Journal of Business Venturing*, 36(4), 106110. <https://doi.org/10.1016/j.jbusvent.2021.106110>
- Rindova, V. P., & Martins, L. L. (2018). From values to value: Value rationality and the creation of great strategies. *Strategy Science*, 3(1), 323–334. <https://doi.org/10.1287/stsc.2017.0038>
- Salmi, A., & Kaipia, R. (2022). Implementing circular business models in the textile and clothing industry. *Journal of Cleaner Production*, 378, 134492. <https://doi.org/10.1016/j.jclepro.2022.134492>
- Senyard, J., Baker, T., Steffens, P., & Davidsson, P. (2014). Bricolage as a path to innovativeness for resource-constrained new firms. *Journal of Product Innovation Management*, 31(2), 211–230. <https://doi.org/10.1111/jpim.12091>
- Shepherd, D. A., Parida, V., & Wincent, J. (2020). The surprising duality of jugaad: Low firm growth and high inclusive growth. *Journal of Management Studies*, 57(1), 87–128. <https://doi.org/10.1111/joms.12309>
- Smith, W. K., & Besharov, M. L. (2017). Bowing before dual gods: How structured flexibility sustains organizational hybridity. *Administrative Science Quarterly*, 7, 000183921775082. <https://doi.org/10.1177/0001839217750826>
- Suchek, N., Ferreira, J. J., & Fernandes, P. O. (2022). A review of entrepreneurship and circular economy research: State of the art and future directions. *Business Strategy and the Environment*, 31(5), 2256–2283. <https://doi.org/10.1002/bse.3020>
- Susur, E., & Engwall, M. (2022). A transitions framework for circular business models. *Journal of Industrial Ecology*, 27, 19–32. <https://doi.org/10.1111/jiec.13363>
- Thornton, P. H., & Ocasio, W. (1999). Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958–1990. *American Journal of Sociology*, 105(3), 801–843. <https://doi.org/10.1086/210361>
- Vermunt, D. A., Negro, S. O., Verweij, P. A., Kuppens, D. V., & Hekkert, M. P. (2019). Exploring barriers to implementing different circular business models. *Journal of Cleaner Production*, 222, 891–902. <https://doi.org/10.1016/j.jclepro.2019.03.052>
- von Kolpinski, C., Yazan, D. M., & Fraccascia, L. (2022). The impact of internal company dynamics on sustainable circular business development: Insights from circular startups. *Business Strategy and the Environment*, 32(4), 1931–1950. <https://doi.org/10.1002/bse.3228>
- Welter, C., Mauer, R., & Wuebker, R. J. (2016). Bridging behavioral models and theoretical concepts: Effectuation and bricolage in the opportunity creation framework. *Strategic Entrepreneurship Journal*, 10, 5–20.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Klein, S. P., Liszt-Rohlf, V., & Spieth, P. (2023). Value-based bricolage: Resource mobilization in the circular economy. *Journal of Industrial Ecology*, 27, 1476–1487. <https://doi.org/10.1111/jiec.13431>