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Openness to knowledge: does corporate social responsibility mediate the relationship between familiness and absorptive capacity?

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Abstract Being open to absorb external knowledge is a key competitive advantage for small- and medium-sized family firms. In this study, we propose and test a model in which corporate social responsibility is the key feature linking family-specific resources (i.e., familiness) to the family firm's ability to absorb external knowledge. By integrating different theoretical perspectives, we argue that family firms use corporate social responsibility activities as signals to build trust and long-term relationships with internal and external stakeholders, incentivizing these groups to share their knowledge with the family firm. The empirical analysis is based on data from 327 German small- and medium-sized family firms. The results of the analyses support our main hypotheses that the relationship between familiness and absorptive capacity is positively mediated by employee- and customer-oriented corporate social responsibility activities. Although hypothesized, we find no mediation effect of community-oriented corporate social responsibility activities. In sum, the study contributes to the understanding of how and why family firms employ their family-specific resources to establish corporate social responsibility activities, which, in turn, are used as a strategic instrument to strengthen their dynamic capabilities.

Plain English Summary Family firms can capitalize on specific corporate social responsibility activities because these incentivize stakeholders to share their knowledge with the family firm. Corporate social responsibility can be used by family firms as a strategic management tool to open up the family business to knowledge sharing with internal and external stakeholders. This is particularly important for family firms because family-specific resources positively affect the execution of the firm's corporate social responsibility activities. In other words, the ability to leverage family resources through corporate social responsibility activities contributes to the ability to implement absorptive capacity in the family firm. However, while executing corporate social responsibility measures can be economically worthwhile, a distinction must be made between different corporate social responsibility activities, as not all of them are beneficial with respect to the implementation of absorptive capacity in family firms.

Keywords Family firms · Familiness · Corporate social responsibility · Dynamic capabilities · Absorptive capacity · Signaling theory

JEL Classification M14 · D8 · L14 · L21

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1 Introduction

Organizations today are part of "knowledge-based economy" (Melnikas, 2010). Knowledge and information have become the heart of economic growth, and companies must be able to dynamically absorb and use this knowledge (David & Foray, 2003; Malerba & McKelvey, 2020). Teece et al.'s (1997) dynamic capabilities theory provides a framework that addresses how collective learning patterns enable firms to change their resource base, using absorptive capacity (AC) to deal with knowledge (Barreto, 2010; Teece et al., 1997; Zollo & Winter, 2002). Absorptive capacity is defined as a set of organizational routines and processes, by which firms acquire, assimilate, transform, and exploit new external knowledge, adding it to the firm's knowledge base to produce dynamic capabilities. By doing so, firms can gain and sustain competitive advantages, especially in very dynamic environments (Cohen & Levinthal, 1990; Lewin et al., 2011; Volberda et al., 2010; Zahra & George, 2002). However, to absorb external knowledge, companies must not only be open to their environment (Lane et al., 2001), but they must also ensure that external and internal stakeholders share knowledge with them, for example, by being perceived as trustworthy organizations (Jansen et al., 2005; Lane et al., 2006). In an organizational context, stakeholders assess the trustworthiness of the focal organization (Mayer et al., 1995). Accordingly, for a company to be considered trustworthy (Abrams et al., 2003; Chowdhury, 2005; Gausdal, 2015), credible information must be available.

The majority of companies in Germany is small- and medium-sized family businesses (SMEs), which are economically very successful (De Massis et al., 2018). Because AC is an important prerequisite for remaining innovative and competitive in a globalized world (Chen et al., 2009; Lane et al., 2006; Nagati & Rebolledo, 2012; Volberda et al., 2010), the study at hand analyses if and how the influence of the family members on the family firm affect AC. This research question has not yet been sufficiently studied either theoretically or empirically in family businesses research. Moreover, the few studies analyzing the antecedents of AC in a family business context have mostly ignored the heterogeneity of family businesses (Andersén, 2015; Daspit et al., 2019; Kotlar et al., 2020). Exceptions are the studies of Andersén (2015), Daspit et al. (2019), and Kotlar et al. (2020) who analyze the relationship between familiness and AC in a conceptual level. Our article intends to fill an important gap in research literature by incorporating familiness in an empirical analysis as a unique impact factor reflecting the heterogeneous influence of the family members on the family business, which—according to our theoretical and empirical model—will have an effect on AC via corporate social responsibility (CSR). Accordingly, the companies in our study are all family-owned SMEs—however, they differ in their degree of familiness.

Drawing on signaling theory, we propose that family businesses must send credible signals, that they are ready to absorb information and convert them into knowledge (Connelly et al., 2011; Spence, 1973). In this context, appearing trustworthy as a firm will be an advantage. This trustworthiness can stem from family businesses characteristics relating to their long-term orientation, their understanding of values, or the responsibility that comes with matching the family's name with the business. Specifically, we follow Frank et al. (2017) and their understanding of familiness. Frank and colleagues focused their analysis on the question, how the family members can influence the firm. Family expectations not only guide the relationship between the family members, they also function as manageable "rules of the game" and create guidance by reducing complexity, that can make the organization run more efficiently. Picking up the discussion at this point, we argue that such decision premises "have the potential to become resources and capabilities in the sense of the RBV [resource based view] if they meet the VRIN [valuable, rare, inimitable, and non-substitutable] criteria" (Frank et al., 2017, p. 714). However, we also argue that family firms have to use observable signals reflecting their family-specific intentions to build trust and long-term relationships with internal and external stakeholders, incentivizing these groups to share their knowledge with the family firm.

At the same time, family firms have a greater need for control and are reluctant to open up (De Kok & Uhlaner, 2001; Feranita et al., 2017; Memili et al., 2015). They show less cooperation in order to avoid incongruent actions and a dependence on external partners (Brinkerink, 2018; Daspit et al., 2019; Kotlar et al., 2020). Because of this, family firms create an insularity in which they primarily use their existing

knowledge (Belkhodja & Daghfous, 2020; Daspit et al., 2019) and only supplement this with long-standing (external) knowledge sources that they trust (Brinkerink, 2018). Family businesses therefore need to execute observable measures with which they convey their openness as well as their trustworthiness, which recipients and potential stakeholders who want to share knowledge perceive and interpret. These measures can lie in the area of CSR (Kim, 2019; Martínez & Rodríguez del Bosque, 2013) and, as we will argue, reflect the bundle of family expectations, which manifest themselves in the different dimensions of familiness. The dynamic ability to respond to stakeholder needs is particularly important for SMEs to maintain business relationships and reach new markets (Gancarczyk & Gancarczyk, 2016). In this context, we posit that if family businesses with these specific characteristics do not succeed in signaling them to internal and external stakeholders, they will be unable to open the boundaries of the family firm to overcome their lack of knowledge resources (e.g., through communicating and building shared values and knowledge sharing with external stakeholders) (Brinkerink et al., 2017; Zerbini, 2017). Moreover, according to signaling theory, especially the signal observability is important (Connelly et al., 2011). Consequently, concrete, perceptible, and, if necessary, costly signals are needed that can be perceived by potential stakeholders and evaluated as credible to establish trustworthy relationships with their internal and external stakeholders gain and sustain competitive advantages by building dynamic capabilities pertaining to new knowledge creation (Bangerter et al., 2012; Chowdhury, 2005).

While CSR activities are sometimes argued to be an important influencing factor that may also enable the acquisition of external knowledge (Belyaeva et al., 2020; Forcadell et al., 2021; Zahra & George, 2002), little is known about the extent to which family firms employ CSR to increase trust-based communication and their visibility to support knowledge transfer activities like (open) innovation (De Massis et al., 2018; Kim, 2019). While current research on CSR in family business literature is focused on image, reputation, and financial performance (Faller & zu Knyphausen-Aufseß, 2018; Van Gils et al., 2014; Vazquez, 2018), we posit that CSR activities are not only directed outwards, but can also have internal effects within companies as well. These can be closely related to the "long-run mindset" (p. 132) and "superior employee relations" (p. 133) described by De Massis et al. (2018). Similarly, De Massis and colleagues indicate that "the values and culture of families that own a Mittelstand firm often translate into a higher sense of community involvement […] and greater social responsibility toward the community, resulting in increased visibility and a better reputation in the surrounding community" (also see Cruz et al., 2014; De Massis et al., 2018, p. 136).

Thus, this study also builds on a growing body of research that has recently begun to recognize that family firms' CSR activities may be an important way to emphasize, for example, the unique value orientation and long-term orientation of the family firm (Zientara, 2017). Essentially, we argue that the specific dimensions of CSR, with the focus on external stakeholders (customers and suppliers) and internal stakeholders (employees) (El Akremi et al., 2018), function as credible quality signals to open up the company to and for stakeholders, bridging the gap between family-specific resources and the family firm's capability to absorb external knowledge. While AC is acknowledged as an essential ability to generate competitive advantages by creating new knowledge (Jansen et al., 2005; Lewin et al., 2011; Volberda et al., 2010), it is still underresearched in the context of family businesses (De Massis et al., 2013; Kotlar et al., 2020). Recent literature argues that family-specific characteristics can influence AC in different ways (Andersén, 2015). For example, family involvement seems to be significant and can close or widen the gap between potential and realized AC, depending on the innovation process and the external search strategy (Brinkerink, 2018). Moreover, Kotlar and colleagues present a conceptual model, in which family ownership has both positive and negative influences on AC (Kotlar et al., 2020). Emotional attachment and fear of losing power causes a lower external view, but promotes a focus on tacit knowledge and internal sharing (Kotlar et al., 2020). However, research on AC and family-specific resources in family firms is still in its infancy, especially concerning overcoming the negative effect of family-specific resources to efficiently use them in relation to AC (Andersén, 2015; Brinkerink, 2018; Daspit et al., 2019; Kotlar et al., 2020).

We propose that specific CSR activities utilize and open up the family firm's resources (i.e., familiness)

to successfully use AC. In sum, the paper considers the following research question: *How (and to what extent) does CSR mediate the relationship between family-specific resources (i.e., familiness) and AC in small and medium-sized family businesses?*

Based on in-depth mediation analysis with data from 327 German family SMEs, we show that CSR is the key feature linking family firms to the willingness and capability to explore, assimilate, and exploit new external knowledge. Specifically, we find that the relationship between familiness and potential AC is partially mediated by customer-oriented CSR. Realized AC is fully mediated by employee- and customer-oriented CSR. Interestingly, although hypothesized, we find no empirical support for a mediated relationship through community-oriented CSR. We conclude that family businesses practicing CSR gain and sustain dynamic capabilities and competitive advantages because CSR also enhances their family firm's ability to recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends (Zahra & George, 2002).

Our study can contribute to the literature in several ways:

Firstly, the results of the analysis show that the relationship between familiness and AC is mediated by CSR activities. This suggests that familiness combined with the practice of CSR can create a competitive advantage—the transfer of knowledge is easier for this type of firm if familiness is pronounced and used to activate CSR. This leads to a faster reaction to market changes, which enhances the capability to survive (Eisenhardt & Martin, 2000; Ramachandran, 2011; Zahra & George, 2002). In other words, we contribute to familiness literature by showing that a high degree of familiness alone may not be enough: measures such as CSR activities must be taken to actively utilize the family-specific resource base (Andersén, 2015; Daspit et al., 2019).

Secondly, we contribute to the discussion on the extent of the capability and willingness paradox in family firms (Chrisman et al., 2015; Debellis et al., 2020; Veider & Matzler, 2016) in the context of AC. We demonstrate that through CSR activities, family-owned companies can make their ability visible by sending out external signals or by promoting superior employee relations (Uhlaner et al., 2004). Corporate social responsibility activities can help to open the boundaries of the family business; to enhance the dynamic capabilities of the family business; and, above all, to make the company more permeable for information and knowledge without having to relinquish too much control (Luo & Du, 2015; Turker, 2009). However, this requires active investment in CSR as a strategic instrument, which in turn creates new intangible resources like social capital and networks (Memili et al., 2015; Price et al., 2013).

Thirdly, we contribute to the AC literature by enhancing the limited knowledge available to date about family businesses. We also show that CSR improves the boundary conditions for successful AC and can thus function as a precursor to AC in the family business context. Thereby, a high level of familiness has a positive effect on this relationship. In addition to direct management decisions, shaping the boundary conditions and firm culture creates an environment fruitful for knowledge absorption. Existing barriers in the implementation of AC can be bridged through CSR. Since specific CSR activities are internally and externally oriented (Farooq et al., 2017; Lewin et al., 2011), they can promote both potential and realized AC. This suggests that a high degree of familiness combined with the practice of CSR can create a competitive advantage—the transfer of knowledge is easier for these family firms if familiness is pronounced and used to activate CSR, which is observable to the stakeholders and incentivizes these groups to share their knowledge with the family firm.

The remainder of the paper is structured as follows: In the next two sections, the theoretical framework and hypotheses are introduced. Sections 4 and 5 discuss the empirical design and the results. The final section discusses key findings, limitations, and potential future research opportunities.

2 Theoretical framework

2.1 Familiness

While a majority of all companies in the world are family firms (Gersick et al., 1997; Schulze & Gedajlovic, 2010), the definitions of family firms differ in their components. Nevertheless, they all show that the role of the family and the specific family culture are relevant to differentiate family businesses from non-family businesses or the differences between different

family firms. Therefore, the role of the family and the family members influence on the family firm is strongly reflected in the concept of familiness introduced by Habbershon and Williams (1999). Familiness is embedded in the framework of the resource-based view and can be defined as "the unique bundle of resources a particular firm has because of the system interaction between the family, its individual members, and the business." (Habbershon & Williams, 1999, p. 11). Consequently, the concept of familiness—widely recognized in the context of family business research—considers both the family and its influence over ownership and management (Chrisman et al., 2003; Pearson et al., 2008; Santos et al., 2020; Zellweger et al., 2010). Frank et al. (2017) introduced the "family influence familiness scale" (FIFS), which measures family member's influence in its heterogeneity. Defined from a resource-based perspective, familiness is a bundle of capabilities and valuable, rare, inimitable, and non-substitutable resources specific to a family business, which result from family involvement. Through the system interaction of the family, its individual members, and the business, family members can influence the firm through their decision premises. This in turn guides the relationship between the family members, can therefore function as manageable "rules of the game," and can create guidance by reducing complexity, which makes the organization run more efficiently. Moreover, Daspit et al., (2019) argue that familiness can affect innovation outcomes via AC. In their conceptual model, they propose that familiness both enhances and constricts the components of AC.

2.2 Dynamic capability and absorptive capacity

Family firms must continuously adapt to changing conditions to stay in business for the long term and to be able to hand the business over to the next generation (Chrisman et al., 2005; Eisenhardt & Martin, 2000; Zahra & George, 2002). The dynamic capability perspective developed by Teece et al. (1997) addresses the process of adaptation to a dynamic environment. It consists of two components: "dynamic," which is based on the fact that companies need to renew and develop their competencies to survive in a dynamic environment; and "capability," the use of internal and external skills and resources to respond to changing environmental conditions (Eisenhardt & Martin, 2000; Teece et al., 1997), to generate competitive advantages (Eisenhardt & Martin, 2000; Teece et al., 1997). We define dynamic capability according to Teece et al. (1997) "as the firm's ability to integrate, build, and reconfigure internal and external competences to rapidly changing environments" (p. 516). Dynamic capabilities include various characteristics that usually influence different routines (organizational and strategic). These can be external resource acquisition and integration, learning mechanisms, or local abilities; AC unites these mechanisms (Barros et al., 2016; Eisenhardt & Martin, 2000; Zahra & George, 2002; Zollo & Winter, 2002).

Nowadays, because of the changes in the economy to a knowledge-based society, AC is especially important for companies as a dimension of dynamic capabilities (Belitski et al., 2019; Malerba & McKelvey, 2020; Siegel & Renko, 2012). Cohen and Levinthal (1990) introduced AC to research literature as the ability of firms to explore external knowledge. Zahra and George (2002) modify the construct and defined AC as "a set of organizational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic capability" (Zahra & George, 2002, p. 186). Thus, they differentiate between potential AC (i.e., acquisition and assimilation abilities) and realized AC (transformation and exploitation capabilities). Together, the model can be used to map the complete process of knowledge transfer, from the identification of the relevant knowledge to its use in the company (Zahra & George, 2002). In this paper, we follow (Zahra & George, 2002, p. 185) and define AC "as a dynamic capability pertaining to knowledge creation and utilization that enhances a firm's ability to gain and sustain a competitive advantage." In line with these arguments and the dynamic capability perspective, we emphasize that there are both internal and external dimensions of AC. Both orientations—internal and external—are designed to make the firm open to exploring new ideas and willing to back the most promising of them with resources and talents (Denning, 2005).

2.3 Corporate social responsibility and signaling theory

Businesses must be open to remain competitive and build the dynamic capability to adapt to the needs

of their stakeholders (Fang et al., 2010; Ramachandran, 2011). Due to globalization, climate change, and risk management, stakeholders such as investors, banks, insurance companies, and customers are increasingly paying attention to whether companies are implementing CSR strategies and measures (Ali et al., 2017; Haack et al., 2020; Haski-Leventhal et al., 2017; Matten & Moon, 2020). In this paper, we follow the World Business Council for Sustainable Development (2000) and define CSR as "the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life" (World Business Council for Sustainable Development, 2000, p. 10). In the last two decades, CSR has developed from being defensive to being opportunity oriented; the current focus is on generating competitive advantages in a dynamic environment through intangible, CSR-related assets (Davies & Crane, 2010; Stoian & Gilman, 2017). Family firms use internal and external CSR to build trust, trustworthiness, and long-term relationships with external and internal stakeholders, incentivizing these groups to share their knowledge and build new resources to develop dynamic capability.

Based on this, it can be seen that companies use CSR as a positive signal, a fact that can be explained by the findings of the signaling theory. Therefore, the theoretical basis of dynamic capability is supplemented by the signaling theory in connection with CSR. Signaling theory attempts to solve the problem of principal agent theory and serves to reduce information asymmetries (Connelly et al., 2011; Spence, 1973). Signals must be observable. However, beyond mere observability, the fit of signals plays an important role. Connelly et al. (2011) describe the signal fit as "the extent to which the signal is correlated with unobservable quality" (p. 53). Scholars differentiate between costly signals and hard-to-fake signals (Bangerter et al., 2012). Hard-to-fake signals are beyond conscious control. Costly signals require investing in resources to acquire and display (Bergh et al., 2014). To ensure that these signals are credibly perceived by the receiver, such signals should be costly and difficult to obtain to show that only highly qualified firms can perform them in the long run (Connelly et al., 2011; Spence, 1973). The sender tries to send a signal with a certain intention (here CSR) to generate a corresponding intension of the receiver (here building trustworthiness). These signals are sent out to create a relationship between the company and its stakeholders, to open up the boundaries of the company and to encourage its stakeholders to transfer information. However, these signals must be credible. These measures can be of various kinds, such as high product quality, equal employment, safe working conditions, or certificates for sustainable corporate governance (Zhang et al., 2020). It is also crucial that the company is at a disadvantage if these measures are not communicated properly. These negative effects are more severe for family businesses, especially SMEs with a high level of familiness. Through the integration of the family, the negative image also falls back on them, especially if the company and the family bear the same name, from which both can only recover with difficulty due to the lower resources (Astrachan et al., 2018; Du, 2015; Kim et al., 2017). However, family businesses with a high level of familiness can also obtain the CSR signals more cost-effectively than family businesses with a lower level of familiness. A high level of familiness reflects a strong family bond and a strong identification of the family members with the company, whereby family and company become "one" (Frank et al., 2017). This results in strong values and a moral focus that are lived out by the family members in the company (O'Boyle et al., 2010). Thus, high degrees of familiness constituting the basic structure of the organization and the way decisions are made by the family members conveys a higher level of trust towards stakeholders, as negative events have a negative impact on long-term orientation and also affect the family through the organizational identity (Astrachan et al., 2018; Frank et al., 2017). Thus, CSR signals reflecting otherwise unobservable family decision premises are more cost-effective to produce through family businesses with high familiness, as they have better resource allocation through family cohesion (Frank et al., 2017; McGrath & O'Toole, 2018). Since especially family-owned SMEs often have few resources, costly investments in CSR only pay off through long-term orientation and are only then sustainably integrated into the company's strategy (Lee et al., 1999; Stoian & Gilman, 2017). This sustained implementation is also accomplished more cost-effectively because family members are heavily involved in the events and strategies of the family business and, because of the family's better interaction with stakeholders, more targeted CSR measures can

be deployed (McGrath & O'Toole, 2018). If signals are honestly signaled, CSR is a popular instrument for companies to build trust and be viewed positively by stakeholders (Forcadell et al., 2021; Zerbini, 2017). Furthermore, the family firms' long-term commitment to its community, channeled by CSR, can lead to a stronger commitment to the company and the willingness to reciprocate behavior among stakeholders, consequently leading to possible economic advantages (Leoni, 2017; Niehm et al., 2008). Ergo, permanent social and environmental CSR activities have a positive impact on the value of the firm, leading to a consistently positive evaluation by an additional stakeholder group potential investors (Noor et al., 2020).

2.4 The relationship between familiness and corporate social responsibility

Corporate social responsibility activities are conducted by family-specific resources to show market partners (e.g., customers, employees, and community partners) that the family business is acting sustainably and fairly (Chung et al., 2015; De Massis et al., 2018; Forcadell et al., 2021; Ismail, 2009; Pérez & Rodríguez del Bosque, 2015; Vlachos et al., 2013). Stock et al. (2020) provide a theoretical framework and empirical evidence that increased integration of the family and its values into the family firm results in the execution of more CSR activities toward employees, customers, and the community. We take their results and arguments as a starting point.

Employee-oriented CSR activities, which focus on the well-being of the employees, increase the motivation of employees to work for the company and their overall well-being (Farooq et al., 2014, 2017; Lee et al., 2013). This, in turn, reduces staff turnover (Farooq et al., 2014), leads to a higher job satisfaction (Luo & Du, 2015), and binds employees to the company by building trust and loyalty among the workforce (De Massis et al., 2018; Luo & Du, 2015; Turker, 2009). In family firms, the owner family is closely connected to the family business through management and ownership, and often also by the fact that the family business bears the name of the family (Astrachan et al., 2018). The more the family is integrated into the company and the family (name) is reflected in the business, the more the owner family wants to maintain its company and family reputation. As a result, such owning families have higher motivation to invest in employee-oriented CSR measures (Binz et al., 2017; Sageder et al., 2018; Zellweger et al., 2013).

Customer-oriented CSR activities can have a positive impact, binding customers to the company and making them more loyal, which leads to better interaction (Luo & Du, 2015). Small- and medium-sized family firms in particular depend on close customer relationships and strong customer loyalty as they often operate in niche markets (De Massis et al., 2018). Moreover, family firms want to keep their businesses competitive to pass them on to the next generation (Chrisman et al., 2005; Churchill & Hatten, 1997). Through this long-term orientation, a stronger bond with the customer can be built (De Massis et al., 2018), which can lead the customers to engage in (open) innovation, for example, through active involvement in the innovation process (Lichtenthaler & Lichtenthaler, 2009). The family is also inclined to conduct more customer-oriented CSR to present the family well to the outside world (Astrachan et al., 2018; Stock et al., 2020).

As family firms are often strongly embedded in the region and rarely relocate (Basco, 2015; Uhlaner et al., 2012), community-oriented CSR activities are important to them. Family firms use community-oriented CSR measures to be recognized as trustworthy business partners (El Ghoul et al., 2016), which also increases the reputation of the firm and the reciprocity between the company and the community (Luo & Du, 2015; Sacconi, 2006). For small- and medium-sized family businesses, reputation is especially important. The family often lives in the area where the company is located (Astrachan et al., 2018; Botero et al., 2019). Thus, a strong sense of familiness and the use of the family firm-specific resources leads to more CSR being exercised in order to strengthen the reputation of the company and the family in the region (Basco, 2015; De Massis et al., 2018). In the next section, we extend the model by focusing on the question of how CSR mediates the relationship between familiness and AC.

3 Hypotheses development

3.1 The relationship between familiness and absorptive capacity

Family firms are characterized by unique resources that result from the interaction between the family and

the business (Daspit et al., 2019; Kellermanns et al., 2012; Minichilli et al., 2010; Weismeier-Sammer et al., 2013). Strong family and generational thinking, which reflects the long-term orientation of the company, is characteristic of familiness (Frank et al., 2017). Consequently, the resources of the family and the company are also used to be able to pass the company on to the next generation. This also includes a good will of the company, or a positive corporate image. Especially if the name of the company matches that of the family (Astrachan et al., 2018). To reach this goal, a strong interaction with the environment and important stakeholder can be a success factor. Small- and medium-sized family businesses often have long-standing ties to the region and can exhibit a strong interaction with their environment and stakeholders (De Massis et al., 2018). As a result, family firms are characterized by long-term relationships with external stakeholders (Brinkerink, 2018) and a distinctive and unique external social capital (Pearson et al., 2008). This can positively influence knowledge transfer from outside the company to the inside by building a common language—based on common knowledge base or background characteristics—which is a key factor for knowledge transfer (Lane & Lubatkin, 1998; Volberda et al., 2010) and can thus enhance the potential AC.

Strong involvement of family members also leads to better knowledge integration (Zahra et al., 2007), as the family members can share deep tacit knowledge with the employees to develop new competencies with new external knowledge (Patel & Fiet, 2011). Family firms in particular take great care to have "a reliable permanent staff" (Frank et al., 2017, p. 728) and "that the family members working in the company have a lively exchange with nonfamily employees" (Frank et al., 2017, p. 728). This lively exchange making knowledge exchange and integration easier (Hotho et al., 2012; Sirmon & Hitt, 2003; Zahra & George, 2002). A pronounced familiness based on family-specific decision premises should therefore positively influence both potential and realized AC.

We therefore propose the following hypotheses:

Hypothesis 1: An increase in familiness is positively related to (a) potential and (b) realized AC.

3.2 The relationship between corporate social responsibility and absorptive capacity

Corporate social responsibility can have different effects, which are reflected both in the different orientations (customer, community, employees) (Block & Wagner, 2014; El Akremi et al., 2018; Farooq et al., 2017) and in the different objectives for which CSR can be used as a strategic management tool. For example, communicating CSR can improve the visibility of the company in the community and for potential customers (Vallaster et al., 2012). The family business invests in and sends (costly) signals in the form of CSR measures, e.g., to underline its value orientation and thus to be a trustworthy partner. Thus, it can increase trustworthiness of the company in the eyes of external stakeholders, such as customers and suppliers (Luo & Du, 2015). Consequently, external stakeholders could be more willing to network and exchange information with companies that conduct CSR measures (Luo & Du, 2015). This exchange of information is an important source for potential AC. Internal, employee-oriented CSR activities in particular lead to a strong bond between employees and the company, resulting in lower employee turnover, increased retention of knowledge in the company, and reciprocal behavior (Luo & Du, 2015; Sacconi, 2006) result in dynamic capabilities and especially realized AC.

3.2.1 Employee-oriented corporate social responsibility activity and absorptive capacity

Employees connect the company with external stakeholders, especially when they work in sales (Cepeda-Carrion et al., 2012; Hotho et al., 2012). Employees are needed to open up the company, identify relevant knowledge, collect information, and establish and maintain networks and contacts. New knowledge can also be identified through continuous knowledge building and a corresponding human and social capital structure in the family firm (Pennings et al., 1998). Such structures are promoted and expanded due to the long-term orientation of family firms, as well as through employee-oriented CSR activities (Cabrera-Suárez et al., 2001; Del Giudice et al., 2011; Turker, 2009).

Employees in SMEs often work across functions and are therefore a central factor in the exchange of knowledge (De Massis et al., 2018). Employee-oriented CSR strengthens the relationship between the company and its employees, which facilitates access to external knowledge and ideas (Luo & Du, 2015). Furthermore, employees are needed to analyze and process the new knowledge and decide what knowledge is relevant for the family firm. To do this, company-specific human capital is required, which is usually provided by employees with many years of experience (Becker et al., 1990; Lehmann et al., 2019). We propose that employees are an important source of potential AC and that CSR measures with the focus of employees as a stakeholder group therefore have a positive impact.

Moreover, it can be argued that employee-oriented CSR activities positively influence realized AC. The transformation of knowledge requires employees who build and establish routines (Jensen et al., 2010; King, 2009). Therefore, low staff turnover, which can be supported by employee-oriented CSR activities, has a positive effect (Ali et al., 2017; De Massis et al., 2018; Werner et al., 2018). Family firms in particular have a special working environment that positively affects employees and builds loyalty to the company (Combs et al., 2018; Habbershon & Williams, 1999). Furthermore, exploitation of knowledge is achieved through the implementation of new routines and processes, which can also be actively exploited through interdepartmental cooperation (Chassang, 2010). To achieve exploitation, employees must exchange information and actively share knowledge, which can be supported by flat hierarchies, particularly in small- and medium-sized family businesses (De Massis et al., 2018). Superior employee relationships can also positively affect knowledge exchange (De Massis et al., 2018). In addition, employee-oriented CSR activities can promote the well-being and the work-life balance of employees (El Akremi et al., 2018). This subsequently leading to a stronger combination of existing knowledge and the newly acquired and assimilated knowledge (Zahra & George, 2002). This in turn positively enhances dynamic capability.

Overall, through employee-oriented CSR activities, employees are better networked, share knowledge better, and can therefore be better integrated into the company. Accordingly, we derive the following hypotheses:

H2: An increase in employee-oriented CSR activities is positively related to (a) potential and (b) realized AC.

3.2.2 *Customer-oriented corporate social responsibility activity and absorptive capacity*

Likewise, customer-oriented CSR activities, such as checking the quality of products or providing help and advice to customers (El Akremi et al., 2018), also expand and develop networks. Through customer-oriented CSR measures trustworthiness is signaled (Martínez & Rodríguez del Bosque, 2013), and the relationship with the customer is strengthened. Customers can reciprocate a firm's CSR through the exchange of knowledge, for example, which the firm needs to build capabilities (Barros et al., 2016). Family firms' long-term orientation can facilitate the development of long-term trust-based relationships with external stakeholders; these relationships increase the transfer of knowledge (Brinkerink, 2018). Through customer-oriented CSR activities, more trust in the company can be built, which in turn promotes the exchange of knowledge between the customer and the company and thus potential AC.

Realized AC—or more specifically, transformation of knowledge—is facilitated by the flow of information, which can also improve the implementation of new products within the company (Moilanen et al., 2014). Increased trust in the company through customer-oriented CSR activities leads customers to be willing to make the company aware that market requirements have changed, for example. The input of customers can be recorded and taken into account by the firm, which can also lead to (open) innovations, for example (Lichtenthaler & Lichtenthaler, 2009). Thus, customers can be involved in the innovation process (Casprini et al., 2017). Exploitation of knowledge can also be promoted through better and more confidential dealings with customers, which is encouraged by CSR activities. (Open) innovations are promoted, for example, through collaboration or with a clear focus on customer benefit, so that both social and economic benefits are included, optimizing the value proposition (Casprini et al., 2017; El Akremi et al., 2018; Feranita et al., 2017). The resulting strengthened relationship with customers can change how customer complaints are evaluated and used to

implement and exploit knowledge (Piller et al., 2011) to create new products and competitive advantages. Therefore, we posit that customer-oriented CSR activities positively influence potential and realized AC:

H3: An increase in customer-oriented CSR activities is positively related to (a) potential and (b) realized AC.

3.2.3 *Community-oriented corporate social responsibility activity and absorptive capacity*

In general, CSR can increase the visibility of the company in the community, for example, by promoting agencies like UNICEF, non-governmental organizations, or the well-being of the regional community through support in schools or sports events (El Akremi et al., 2018). In this context, corporate donations to charities can be seen as a dynamic capability—competitive advantages arise from important stakeholder relationships within the community (Cantrell et al., 2015). The community embeddedness of family firms can help them to overcome their resource constraints (De Massis et al., 2018) and respond to changing environmental conditions (Cantrell et al., 2015). Therefore, network activities and network maintenance are particularly noteworthy. Expanding and strengthening the relationship between the family firm and the region (Basco, 2015), including relationships with universities and local government, can have a positive impact (De Massis et al., 2018). These relationships can be promoted through CSR activities aimed at the community that address potentially relevant stakeholders (Cruz et al., 2014). Thus, embeddedness is strengthened, the company can be more open, information can flow, and knowledge can be exchanged and absorbed. This positively influences the acquisition of external knowledge and potential AC. However, while customers can be actively involved in the innovation process and thus influence realized AC, there seems to be lower potential for community-oriented CSR activities to result in realized AC. Therefore, we derive the following hypothesis:

H4: An increase in community-oriented CSR activities is positively related to potential AC.

3.3 The mediating role of corporate social responsibility on the relationship between familiness and absorptive capacity

Family firms have the advantage of possessing idiosyncratic and potentially valuable resources that are inimitable by other companies (Habbershon & Williams, 1999; Habbershon et al., 2003). These resources arise from a manageable set of family-specific decision premises determining family member influence on the family business and can be sources of competitive advantage (Frank et al., 2017). Consequently, these potential resources of family businesses, namely familiness, must be utilized in a way that positively affects the firm's dynamic capability to explore external knowledge (Barros et al., 2016). By building long-term commitment, companies can create strong internal and external networks. This social capital, which is usually built and transferred over generations, can encourage knowledge transfer (Nooteboom, 2000; Sirmon & Hitt, 2003). However, trust from and to the company is an important factor that influences the transfer of knowledge (Abrams et al., 2003; Chowdhury, 2005; Gausdal, 2015). Therefore, the stakeholders involved in the established network and long-term relationships must be made aware that the family firm is still trustworthy and that it is worthwhile to interact and exchange knowledge with it (Gausdal, 2015; Memili & Dibrell, 2019). Corporate social responsibility activities may help to activate and use familiness through increasing reputation and thereby signaling trustworthiness (Forcadell et al., 2021; Sageder et al., 2018)—such activities can uniformly communicate the company values inside and outside the organization (Vallaster et al., 2012; Zerbini, 2017) and open up the company to knowledge transfer. This can result in (open) innovation activities (Feranita et al., 2017; MacGregor & Fontrodona, 2008). We propose that firms invest in CSR to signal their (otherwise for the stakeholders unobservable) decision premises, which are manifested in the different dimensions of familiness to incentivize external and internal stakeholders to share their knowledge with the company. There are benefits of CSR activities in areas that overlap with the distinctive features of family firms, such as image and reputation, networks, stakeholders, and employees (Sageder et al., 2018; Zellweger et al., 2013). Corporate social responsibility activities in the different

fields legitimize firms in the marketplace and build their reputation as responsible companies (El Ghoul et al., 2016; Khan et al., 2013; Zamir & Saeed, 2020).

One aspect of familiness is the family-employee bond decision premises, which is characterized by "lively exchange," "reliable permanent staff," "secure jobs," or "that family members working in the company are confidants for the employees" (Frank et al., 2017, p. 728). Family-employee bond decision premises can promote employee trust and commitment to the company, which can also positively affect knowledge transfer and the development of capabilities and learning processes (Abrams et al., 2003; Barros et al., 2016; Habbershon & Williams, 1999; Pearson et al., 2008). As a matter of course, the factors influencing family member's decision-making is no active signal and employees may not be able to perceive them as such. Through CSR activities, however, the intentions resulting from familiness will become more visible. Thus, we propose that employee-oriented CSR activities transmit positive signals both internally and indirectly to the outside world, leading to greater corporate visibility (Smidts et al., 2001; Zerbini, 2017). The activities convey family values to employees, which can better be absorbed by them, building trust and identity with the company (Marques et al., 2014; Smidts et al., 2001).

However, the implementation of CSR measures requires an active management decision and resources. The resources of the family business, which are reflected in the family-employee bond, can be harnessed by CSR, which can be used as a strategic management tool, which positively influences AC. In order for these signals to be credible, they must be costly and difficult to obtain (Connelly et al., 2011; Spence, 1973). Family businesses with high familiness can achieve them more cost-effectively. Familiness involves a high level of integration of the family in the company and a high level of interaction with its employees, which builds a family-like mutual trust, also through mostly long-term interaction (Frank et al., 2017). Through this, CSR conveys signals to employees in a more credible way than when family businesses have low familiness and less interaction with employees (Frank et al., 2017). For example, firms with very low familiness important family and non-financial objectives, which imply a long-term temporal approach, play a minor role. In times of crisis, the fluctuation rates of the workforce in these firms will be higher, whereas family firms tend to reduce their new hires instead of increasing the number of layoffs (Bassanini et al., 2013; Werner et al., 2018). Consequently, firms with very low familiness that try to signal a special family-employee bond via employee CSR schemes have a higher risk of losing their reputation in times of crisis than their counterparts characterized by high levels of familiness. Employee-oriented CSR activities, which use resources from the owner family and the family business, improve the work-life balance and strengthen the bond and motivation of employees (Laguir et al., 2016), strengthening the employee relationship (De Massis et al., 2018) and promoting innovative behavior (Laguir et al., 2016). In addition, CSR activities build trust (Forcadell et al., 2021) and strengthen the employee commitment to the company (Turker, 2009). This can result in better interaction between the family and employees, which can lead to a spread of tacit knowledge, whereby relevant knowledge can be better recognized and assimilated, leading to an improved potential AC. Equally, the improvement of internal communication leads to a better integration of external and internal knowledge (Zahra et al., 2007), which also can improve innovative behavior and hence dynamic capability (Cohen & Levinthal, 1990; Daspit et al., 2019; Zahra & George, 2002). The values and goals of the company (and the owner family) are communicated and are thus more transparent, which means that these values and goals can be better followed and realized when transforming and using knowledge (Nooteboom, 2000). This can increase realized AC.

As a result, employee-oriented CSR activities bring the family and nonfamily members closer, which positively affects the external and internal flow of knowledge. We therefore assume that the effect between familiness and potential and realized AC is mediated by employee-oriented CSR activities:

> *H5: Employee-oriented CSR activities positively mediate the relationship between familiness and the (a) potential and (b) realized AC of family firms.*

Family businesses have a strong social capital and long-term relationships with external stakeholders (Brinkerink, 2018; Pearson et al., 2008), which have usually been built and transferred over several

generations (Sirmon & Hitt, 2003). These networks need to be continually reestablished, strengthened, and expanded so that the company remains visible and a basis of trust is maintained, facilitating interactions, knowledge transfer, and the development of dynamic capabilities (Abrams et al., 2003; Cohen & Levinthal, 1990; Zahra & George, 2002). Resources must be invested to increase this visibility. Customer-oriented CSR activities, which use the resources of the family and the family business, act as a positive signal and increase the company's external visibility (Zerbini, 2017). Being a "family firm," reflected through the overlap of the family name with the company name or through "the family [giving] the face to the company" (Seitenzahl Frank et al., 2017 p. 730), can be perceived by consumers as a positive and unique attribute, which contributes to a positive perception (Zellweger et al., 2010). This signal is harder to achieve for family businesses with lower familiness, as they have to spend more on this due to the family's lower integration and attachment to the business (Bergh et al., 2014; Frank et al., 2017). These attributes promote the trustworthiness and identity of the company in the eyes of customers; these factors are basic requirements and drivers for the exchange of knowledge (Abrams et al., 2003; Botero et al., 2019; Gausdal, 2015; Turker, 2009; Zellweger et al., 2012). As a result, consumers behave reciprocally and positively toward the company (Martínez & Rodríguez del Bosque, 2013), which opens up the company to them. Customer-oriented CSR measures can also make the customer feel valued as their needs are met, for example, through good product quality, good advice, or the development of innovations for the customer (El Akremi et al., 2018). This may also lead to customers being willing to open up to the company and share their ideas and knowledge with the company (Bhupendra & Sangle, 2017; Casprini et al., 2017), which positively affects potential AC. It may also lead customers to participate in product development (e.g., through open innovation) through more precise and recurring information (Casprini et al., 2017), which positively affects realized AC.

Based on these arguments, we assume that stronger familiness and customer-oriented CSR activities increase the trustworthiness of the company and consequently the willingness of customers to act reciprocally and share knowledge with the company. Therefore, we propose the following hypothesis:

H6: Customer-oriented CSR activities positively mediate the relationship between familiness and the (a) potential and (b) realized AC of family firms.

Familiness also means that the family is the face of the company and is actively involved in the community and region (Frank et al., 2017). Active involvement can positively influence the transfer of knowledge by demonstrating the company's trustworthiness and activities can strengthen the existing organizational and family social capital, for example. However, for that, these measures must be actively visible to the stakeholders. The altruistic behavior of the family significantly overlaps with CSR activities that relate to the community (Cantrell et al., 2015; El Akremi et al., 2018). For example, the resources of the family and the family business are actively used to engage in social activities and support social projects in the community. If community-oriented CSR measures are understood as a strategic management tool, they can contribute to the region or regions in which the company is active and thereby increase the company's visibility (Cantrell et al., 2015; De Massis et al., 2018). Family businesses with a weak familiness need more resources to achieve these signals, because the connection with the region and the natural exchange anchored in familiness must first be formed. Due to the higher costs, these signals cannot be maintained in the long term and thus achieve only low credibility (Connelly et al., 2011; Frank et al., 2017; Spence, 1973). Through visibility and increased trust and embeddedness, it can be assumed that information and knowledge also flow better, facilitating the development of new competencies to respond to changing environmental conditions. Therefore, if family resources are to be used to contribute to society, CSR measures as a strategic management tool are particularly suitable for making the company externally visible and recognizable, creating benefit for AC.

Thus, we assume that community-oriented CSR activities act as a mediator between familiness and potential AC. We therefore propose the following hypotheses:

H7: Community-oriented CSR activities positively mediate the relationship between familiness and potential AC of family firms.

In general, we argue that the relationship between familiness and AC is mediated by CSR. To use family firm-specific resources (i.e., familiness) and develop competitiveness through AC, CSR is used to signal among other things trustworthiness and open up the boundaries of the family firm (Zerbini, 2017). The theorized relationships are summarized in Fig. 1.

4 Methods

4.1 Data collection and sample

Our empirical analysis is based on data that was collected by an online survey, surveying 73,168 German SMEs (with a 1–500 staff headcount according to the EU commission) between January 2019 and March 2019, of which 2309 companies replied (3.16% response rate). All firms were randomly selected using the German database AIDA-Bureau van Dijk (full version). Of the 2309 responses that were returned, several responses were eliminated from consideration in the present study: 1782 surveys were incomplete and consequently eliminated; as we focus on SMEs, 22 cases were excluded from consideration due to having more than 500 employees; since the present study examines family firms, responses from 177 nonfamily firms were excluded. All exclusions resulted in 327 usable responses from targeted owners and managers of SME family firms. Before data collection, we ensured the suitability of the questionnaire by employing well-tested scales and consulting independent experts in survey design and methodology. As a result, the questionnaire comprised wide-ranging questions about the company's current situation and its structure, family involvement, and employees. Since the survey was conducted in Germany, questions were first translated into German and then back into English for this article.

4.2 Measures

4.2.1 Dependent variables

Absorptive capacity is defined as a set of organizational routines and processes, by which firms acquire, assimilate, transform, and exploit external knowledge to produce a dynamic capability (Zahra & George, 2002). Based on this definition, we build on an established scale (Jansen et al., 2005) that was adapted by

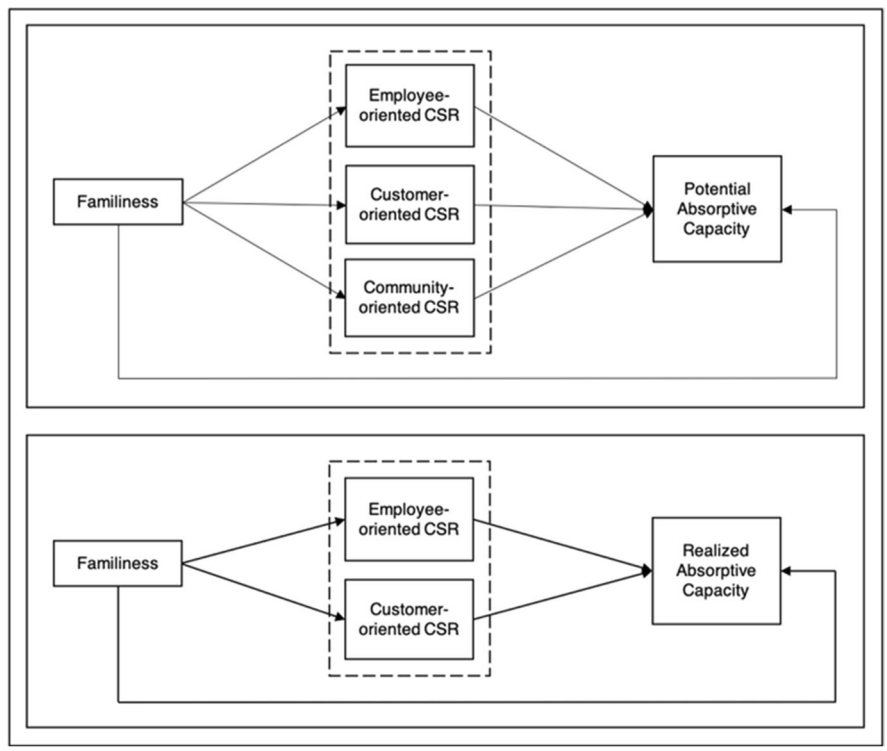

Fig. 1 Conceptual model

Fernhaber and Patel (2012). This measure consists of two subscales capturing potential AC (nine items) and realized AC (12 items). All elements of the subscales were measured on a five-point Likert-type response scale ranked from 1 – "disagree strongly" to 5 – "agree strongly." The standardized loadings for the overall AC measure (i.e., potential and realized AC) ranged from 0.26 to 0.70, Cronbach's alpha was 0.87, and the scale reliability was $p = 0.87$. To obtain the score for the two subscales of potential and realized AC, the respective items were averaged. Principal component factor analysis showed that the nine items of potential AC loaded on one component, with factor loadings of 0.36 or higher—clearly above the suggested 0.30 as the minimum criterion for an item (Costello & Osborne, 2005); Cronbach's alpha was 0.75. The 12 items of realized AC also loaded on one component, with factor loadings of 0.35 or higher; Cronbach's alpha was 0.81. Moreover, confirmatory factor analysis showed that all items loaded significantly and strongly on each of the two subdimensions and were associated with reasonable to good measures model fit (potential AC: CFI = 0.87, RMSEA = 0.086, p-reliability = 0.87; realized AC: CFI = 0.85, RMSEA = 0.088, p-reliability = 0.81.) Although the standardized loading on the overall AC measure was slightly below the minimum criterion of 0.30 in one item (0.26), the scale has been extensively tested and applied in quantitative business research. Moreover, confirmatory factor analysis (CFI = 0.79, RMSEA = 0.08, p-reliability = 0.87) suggested a good reliability and fit for this study's purpose.

4.2.2 Independent variable

One of the central variables in our model is familiness. We measured familiness using the established FIFS scale developed by Frank et al. (2017). This construct encompasses dimensions of ownership, management and control, performance level of active family members, the exchange of information between active family members, transgenerational orientation, family-employee bonding, and the identity of the family business. The scale consists of 20 items. These were also measured on a five-point Likert-type response scale ranked from 1 – "disagree strongly" to 5 – "agree strongly." To obtain the score, the respective items were averaged. All indicators of familiness had a substantial loading that was significant at the 0.001 level. The standardized loadings ranged from 0.39 to 0.69. Cronbach's alpha was 0.89. The scale reliability was $p = 0.88$.

4.2.3 Mediator variables

The mediator variables of the models encompass three specific dimensions of CSR. These were measured by drawing on an established scale developed by El Akremi et al. (2018). Specifically, we drew on community-oriented CSR (seven items), employee-oriented CSR (seven items), and customer-oriented CSR (five items) to generate our three mediator variables (see also Farooq et al., 2017). The seven items of community-oriented CSR include financial measures related to humanitarian projects (e.g., in developing countries), causes and charities, and support for the population and residents in the event of natural disasters or accidents. The seven items of employee-oriented CSR examine the well-being, working conditions, health and safety, and aspects of discrimination and support of the company for its employees. The five elements of customer-oriented CSR focus on the company's responsibility concerning the quality of its products and the company's customer relations. All items were measured on a five-point Likert-type response scale ranked from 1 – "disagree strongly" to 5 – "agree strongly." To obtain a score for each of the three measures, the items of the three scales were averaged.

Principal component factor analysis showed that the seven items of employee-oriented CSR loaded on one component only, with factor loadings of 0.629 or higher. Cronbach's alpha was 0.82. The five items of customer-oriented CSR loaded also on one component only, with factor loadings of 0.519 or higher; Cronbach's alpha was 0.72. Last, but not least, the seven items of community-oriented CSR also loaded on one component only, with factor loadings of 0.665 or higher; Cronbach's alpha was 0.86. Moreover, confirmatory factor analysis showed that all items loaded significantly and strongly on each of the subdimensions and were also associated with reasonable to good measures of model fit (community-oriented CSR: CFI = 0.89, RMSEA = 0.15, p-reliability = 0.86; employee-oriented CSR: CFI = 0.93, RMSEA = 0.11, p-reliability = 0.82; customer-oriented CSR: CFI = 0.99, RMSEA = 0.03, p-reliability = 0.69).

A description of the items of the latent constructs used in this study is reported in Appendix 7, 8, and 9.

4.2.4 Control variables

To rule out alternative explanations and to test the stated hypotheses, the present study included a set of control variables which may affect our dependent, independent, and mediator variables: These are industry sector (manufacturing (ref.), construction, trade services, crafts, other), firm's size (number of employees), firm's age (years), past innovation output (i.e., if the company had introduced new or significantly improved products to the market (i.e., product innovations) and/or has implemented process innovations in the past 3 years), venture performance, generation (first generation firm (ref.), second generation firm, third and more generation firm) and a dummy variable for ownership (with 0 meaning that the share of equity capital owned by the family is less than 50% and 1 meaning 50% and more). Please note that we included two variables to measure current and past performance: First, we measured current venture performance by asking the respondents to assess the current business situation of the company based on the following characteristics: sales, profit, cash flows on a scale from "very bad = 1" to "very good = 5." Based on the answers, we generated a variable capturing these performance dimensions in one variable. Second, we added employment growth in the last three years (number of employees at the interview time point divided by number of employees three years before) to control for the effect of past performance. Moreover, we added two control variables capturing the effect of cooperation with universities and other firms with respect to innovation project as proxies for innovation activities and two controls reflect the education and training levels of employees. Here, we expect that those companies that are not able to fill their vacancies for specialists because the applicants had no suitable training or the applicants had too little relevant work experience are those companies that rely on high levels of experience and training of their staff. Based on prior literature, we also expect formalization and bureaucratization to affect the company's ability to coordinate. Based on these considerations, we added the variables bureaucratization (two items) and cross-functional interfaces in decision-making (one item) on the organizational level, which the respondents are asked to assess on a scale from "agree less = 1" to "agree fully = 5." Specifically, the variables hierarchy ("This company is strongly hierarchically organized"), regulations ("This company has bureaucratic structures with extensive formal regulations"), and participation ("In this company, the employees are fully involved in decisions") are included. Since it can be assumed that "workforce development" can have an influence on AC, we also included this control variable in the analysis of the robustness check (for details, see Appendix Table 6). Please note that we do not include this item in the base models as the family-employee bond subscale already contains this measure, which we removed to test for endogeneity issues.

5 Results

Table 1 and Appendix Table 5 show the descriptive statistics of the variables used in the empirical analysis and the correlation matrix, respectively. The responding family firms are on average 54.4 years old and have hired around 70 employees. In addition, a majority of the firms are still in their first (i.e., founding) generation (36%) and established in the service sector (32%). Moreover, we conducted a Harman's one-factor analysis and calculated loading of all variables used in the regression analysis. In our study, six factors emerged with eigenvalue greater than 1, explaining 64% of variance with the largest factor accounting for 23%, which is less than the suggested 50% threshold.

VIF supports the rejection of collinearity issues among the variables. In fact, VIF range from 1.03 to 2.71, well below the threshold (3) accepted in the literature (Hair et al., 1998). The regression results are described in Table 2. For each of the two measures of AC (i.e., potential and realized AC) and for each of our three measures of CSR (i.e., employee-oriented CSR, customer-oriented CSR, and community-oriented CSR), we used OLS regression models with robust standard errors as the principal method to test our hypotheses. We find that the effect of familiness is significant on both measures of AC (model 1: $\beta = 0.1852$; p-value = 0.000, model 2: $\beta = 0.1566$; p-value = 0.000). This seems to support—at the first sight—H1a and H1b. Moreover, these zero-order effects of our independent variable on the dependent variables can be considered as a first indication that there is an "effect to be mediated" (Collins et al., 1998; Judd & Kenny, 1981; Kenny et al., 1998; Preacher & Hayes, 2004). In models 5–7, we run regressions on the three measures

Table 1 Correlation matrix

Variables	(1)	2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Potential AC	1.00														
Realized AC	*0.66*	1.00													
Familiness	*0.29*	*0.29*	1.00												
Employee CSR	*0.34*	*0.40*	*0.34*	1.00											
Customer CSR	*0.43*	*0.50*	*0.30*	*0.34*	1.00										
Community CSR	*0.27*	*0.25*	*0.29*	*0.88*	*0.25*	1.00									
Firm's size	*0.20*	*0.11*	0.07	*0.18*	*0.14*	*0.16*	1.00								
Manufacturing	−0.02	0.05	0.02	0.09	*0.15*	0.07	*0.10*	1.00							
Construction	−0.05	−0.07	0.03	0.01	*−0.11*	−0.00	*0.15*	*−0.22*	1.00						
Trade	0.06	0.07	0.04	−0.02	0.05	−0.05	*−0.12*	*−0.21*	*−0.15*	1.00					
Services	*0.13*	0.05	−0.03	0.05	0.01	0.08	−0.02	*−0.39*	*−0.27*	*−0.26*	1.00				
Crafts	−0.06	*−0.13*	−0.02	−0.07	−0.02	−0.06	*−0.13*	*−0.21*	*−0.14*	*−0.14*	*−0.25*	1.00			
Other	−0.14	−0.01	−0.05	*−0.15*	*−0.18*	*−0.13*	−0.02	*−0.14*	*−0.10*	*−0.10*	*−0.18*	−0.09	1.00		
Firm's age	0.02	0.05	*0.16*	0.04	0.05	0.03	*0.32*	*0.16*	*0.16*	0.06	*−0.27*	−0.02	−0.05	1.00	
Innovation	*0.27*	*0.30*	*0.12*	*0.29*	*0.27*	*0.28*	*0.18*	*0.19*	*−0.20*	−0.01	0.00	−0.04	0.00	*0.10*	1.00
Performance	*0.27*	*0.29*	*0.21*	*0.21*	0.09	*0.18*	*0.17*	0.02	*0.16*	*−0.12*	−0.02	−0.01	−0.03	0.07	*0.12*
1st Generation	−0.00	0.03	*−0.15*	−0.04	−0.04	−0.05	*−0.23*	−0.14	*−0.12*	−0.02	*0.25*	−0.06	0.05	*−0.53*	−0.03
2nd Generation	−0.00	−0.02	−0.02	0.01	0.07	0.02	−0.02	0.03	−0.03	*−0.10*	−0.01	*0.11*	−0.02	−0.09	0.02
3rd + Gen	0.01	−0.02	*0.18*	0.04	−0.03	0.03	*0.25*	*0.11*	*0.16*	0.12	*−0.25*	−0.06	−0.03	0.66	0.01
Ownership	*0.11*	0.08	*0.15*	−0.03	0.07	−0.03	0.02	−0.02	0.06	−0.01	0.08	−0.08	−0.06	0.07	0.02
Univ. coop	*0.13*	0.23	0.04	*0.17*	*0.19*	0.15	*0.34*	*0.15*	−0.00	−0.10	−0.04	−0.03	−0.02	*0.15*	*0.20*
Firm coop	0.22	0.27	*0.14*	*0.26*	*0.29*	0.22	*0.18*	*0.11*	−0.09	0.01	0.05	*−0.10*	−0.04	0.08	*0.38*
Training	0.08	0.03	0.03	0.06	0.06	−0.02	0.04	*−0.10*	0.01	*−0.11*	*0.15*	0.07	−0.09	−0.08	0.03
Education	0.05	0.02	0.09	0.05	−0.00	0.02	−0.02	−0.09	−0.03	−0.04	*0.15*	0.04	−0.06	−0.06	0.04
Employment gr	−0.02	0.06	0.06	0.00	*0.11*	−0.01	−0.00	0.03	0.08	−0.04	−0.05	−0.05	0.05	0.00	0.06
Hierarchy	−0.06	*−0.10*	0.09	*−0.10*	−0.07	−0.06	−0.05	−0.01	*0.13*	−0.04	−0.09	0.08	−0.05	0.05	*−0.10*
Regulations	0.01	0.03	0.03	*0.12*	0.01	0.07	−0.09	−0.06	0.06	0.07	0.02	−0.02	−0.08	−0.03	−0.09
Participation	*0.25*	*0.39*	*0.17*	*0.24*	*0.18*	*0.17*	*0.11*	0.05	−0.02	−0.01	0.02	−0.09	0.04	0.03	*0.23*
Workforce dev	*0.28*	*0.35*	*0.26*	*0.26*	*0.24*	*0.17*	*0.10*	−0.01	0.06	−0.06	0.08	−0.04	*−0.10*	0.02	*0.11*

Table 1 (continued)

Variables	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Potential AC														
Realized AC														
Familiness														
Employee CSR														
Customer CSR														
Community CSR														
Firm's size														
Manufacturing														
Construction														
Trade														
Services														
Crafts														
Other														
Firm's age														
Innovation														
Performance	1.00													
1st Generation	−0.03	1.00												
2nd Generation	0.01	*−0.54*	1.00											
3rd + Gen	0.03	*−0.49*	*−0.47*	1.00										
Ownership	0.04	−0.08	0.02	0.06	1.00									
Univ. coop	*0.11*	−0.08	−0.07	*0.16*	0.00	1.00								
Firm coop	0.07	−0.03	−0.01	0.04	*0.11*	*0.39*	1.00							
Training	−0.00	−0.04	*0.10*	−0.06	−0.05	−0.07	0.07	1.00						
Education	0.00	−0.08	0.12	−0.05	0.02	−0.07	0.07	*0.64*	1.00					
Employment gr*	−0.03	−0.00	0.01	−0.01	−0.05	−0.02	*0.12*	*0.11*	0.07	1.00				
Hierarchy	−0.08	−0.04	−0.00	0.05	0.07	−0.07	−0.06	−0.02	−0.02	−0.07	1.00			
Regulations	0.03	0.02	0.03	−0.05	−0.08	−0.05	0.04	0.01	0.00	−0.05	*0.21*	1.00		
Participation	*0.17*	0.01	−0.05	0.05	0.06	*0.14*	*0.18*	0.03	0.02	0.07	*−0.23*	*0.11*	1.00	
Workforce dev*	*0.26*	0.03	0.01	−0.04	0.11	*0.10*	*0.15*	0.05	0.09	0.05	−0.01	−0.01	*0.15*	1.00

Italics = $p < 0.05$

* Employment growth, Workforce development

of CSR—our mediator variables. In detail, the results provide empirical evidence that familiness is positive and significant on all three CSR measures (model 5: $\beta = 0.3442$; p-value = 0.000, model 6: $\beta = 0.1885$; p-value = 0.000, model 7: $\beta = 0.3957$; p-value = 0.000). Thus, we can confirm the results documented in Stock

Table 2 Regression results

	1	2	3	4	5	6	7	8	9
	Potential AC	Realized AC	Potential AC	Realized AC	Employee CSR	Customer CSR	Community CSR	Potential AC	Realized AC
Independent variable:									
Familiness	0.1852*** (0.0526)	0.1566*** (0.0467)			0.3482*** (0.0725)	0.1885*** (0.0388)	0.3957*** (0.0904)	0.0908* (0.0520)	0.0328 (0.0431)
Mediator variables:									
Employee CSR			0.1396 (0.0848)	0.1276*** (0.0387)				0.1216 (0.0862)	0.1205*** (0.0395)
Customer CSR			0.3854*** (0.0659)	0.4446*** (0.0599)				0.3570*** (0.0686)	0.4344*** (0.0622)
Community CSR			−0.0370 (0.0597)					−0.0385 (0.0602)	
Controls:									
Firm's size	0.0008** (0.0003)	−0.0002 (0.0003)	0.0006* (0.0003)	−0.0004* (0.0002)	0.0007 (0.0004)	0.0004* (0.0002)	0.0009 (0.0007)	0.0007* (0.0003)	−0.0004* (0.0002)
Firm's age	−0.0006 (0.0009)	0.0012 (0.0009)	−0.0006 (0.0009)	0.0012 (0.0008)	−0.0014 (0.0014)	0.0003 (0.0007)	−0.0024 (0.0020)	−0.0006 (0.0009)	0.0012 (0.0008)
Innovation	0.1735** (0.0690)	0.1419** (0.0624)	0.1144* (0.0647)	0.0625 (0.0559)	0.2792*** (0.0881)	0.1025* (0.0561)	0.3870*** (0.1161)	0.1179* (0.0644)	0.0637 (0.0559)
Performance	0.1304*** (0.0393)	0.1425*** (0.0341)	0.1362*** (0.0376)	0.1387*** (0.0307)	0.0754 (0.0505)	−0.0031 (0.0328)	0.0791 (0.0674)	0.1253*** (0.0380)	0.1348*** (0.0308)
2nd Generation[2]	−0.0096 (0.0681)	−0.0511 (0.0648)	−0.0108 (0.0642)	−0.0605 (0.0607)	0.0237 (0.0936)	0.0193 (0.0565)	0.0902 (0.1263)	−0.0159 (0.0638)	−0.0624 (0.0602)
3rd + Generation[2]	−0.0512 (0.0913)	−0.1929** (0.0843)	0.0200 (0.0915)	−0.1302 (0.0839)	0.0173 (0.1407)	−0.1305 (0.0833)	0.1128 (0.1855)	−0.0023 (0.0901)	−0.1383* (0.0819)
Ownership	0.0915 (0.1046)	0.0504 (0.1042)	0.1135 (0.0918)	0.0683 (0.0936)	−0.2354** (0.1135)	0.0412 (0.1029)	−0.3239* (0.1750)	0.0929 (0.0950)	0.0609 (0.0948)
University cooperation	0.0422 (0.1167)	0.3088*** (0.0987)	−0.0308 (0.1174)	0.2312*** (0.0888)	0.0998 (0.1600)	0.1401* (0.0754)	0.0581 (0.2468)	−0.0177 (0.1133)	0.2359*** (0.0880)
Firm cooperation	0.0792 (0.0705)	0.0710 (0.0674)	0.0234 (0.0710)	−0.0039 (0.0646)	0.1811* (0.1039)	0.1240** (0.0545)	0.2181 (0.1494)	0.0213 (0.0699)	−0.0047 (0.0644)
Training	0.1068 (0.0987)	0.0721 (0.0859)	0.0462 (0.0952)	0.0171 (0.0774)	0.0405 (0.1166)	0.1079 (0.0813)	−0.2129 (0.1645)	0.0552 (0.0933)	0.0204 (0.0773)
Education	−0.0584 (0.0888)	−0.0376 (0.0787)	0.0048 (0.0850)	0.0233 (0.0715)	−0.0253 (0.1156)	−0.1200 (0.0804)	0.0360 (0.1675)	−0.0111 (0.0845)	0.0176 (0.0723)
Employment growth	−0.0102 (0.0092)	0.0055 (0.0122)	−0.0133 (0.0099)	0.0010 (0.0112)	−0.0154 (0.0100)	0.0156*** (0.0060)	−0.0186 (0.0207)	−0.0146* (0.0088)	0.0006 (0.0107)
Hierarchy	0.0145 (0.0694)	0.0105 (0.0623)	0.0633 (0.0658)	0.0546 (0.0563)	−0.1560* (0.0915)	−0.0421 (0.0535)	−0.1186 (0.1204)	0.0440 (0.0652)	0.0476 (0.0563)
Regulations	−0.0268 (0.1009)	−0.0143 (0.0930)	−0.0681 (0.0930)	−0.0613 (0.0820)	0.2849*** (0.1075)	0.0231 (0.0697)	0.2277 (0.1538)	−0.0609 (0.0955)	−0.0587 (0.0821)
Participation	0.1565** (0.0606)	0.2906*** (0.0557)	0.1359** (0.0582)	0.2576*** (0.0498)	0.1212 (0.0817)	0.0498 (0.0468)	0.0739 (0.1077)	0.1268** (0.0587)	0.2543*** (0.0501)
_cons	2.1167*** (0.2414)	2.2955*** (0.2552)	0.7271** (0.3222)	0.5304* (0.3130)	1.7429*** (0.3377)	3.6593*** (0.2416)	0.8353** (0.4047)	0.6307* (0.3311)	0.4960 (0.3160)
Obs	327	327	327	327	327	327	327	327	327
R-squared	0.2681	0.3334	0.3344	0.4574	0.2852	0.2554	0.2186	0.3416	0.4584

Robust standard errors are in parenthesis; [1]reference: manufacturing; [2]reference: 1st (founder) generation. For simplicity, we excluded the display of industry dummies

***$p < 0.01$, ** $p < 0.05$, *$p < 0.1$

et al. (2020) who based their empirical analysis on data of privately held companies located in North Rhine-Westphalia collected between November 2017 and February 2018 with our data set and analysis. In model 3, we find that customer-orientated CSR ($\beta = 0.3854$; p-value $= 0.000$) significantly positively effects potential AC, thus confirming H3a, while community CSR ($\beta = -0.037$; p-value $= 0.535$) and employee-orientated CSR ($\beta = 0.1396$; p-value $= 0.101$) has no significant impact on potential AC, thus rejecting H2a and H4. In model 4, we find that employee-orientated CSR ($\beta = 0.1276$; p-value $= 0.001$) and customer-orientated CSR ($\beta = 0.4446$; p-value $= 0.000$) significantly positively effects realized AC, thus confirming H2b and H3b.

Following the four-step procedure to assess the potential mediation by these three CSR sub-dimensions (Baron & Kenny, 1986; MacKinnon et al., 2007), the results from model 8 illustrate that customer-orientated CSR partially mediates the relationship between familiness and potential AC: First, as mentioned above, a significant relationship between familiness and customer-orientated CSR is evident from the results in model 6. Second, the results for model 1 show a significant relationship between familiness and potential AC. Third, a significant relationship exists between customer-orientated CSR and potential AC while controlling for familiness as shown in the results of model 8 ($\beta = 0.\ 3570$; p-value $= 0.000$) which supports H6a. Fourth, the familiness coefficient in model 8 is significant ($\beta = 0.0908$; p-value $= 0.082$), indicating a partial mediation. This also result leads us to ultimately confirm H1a. Regarding the mediation effects, the results from the bootstrap test (MacKinnon et al., 2002) show that the mediation effect is significantly different from zero (Table 3). The statistical significance was tested with 5000 bootstrap samples on a 95% bias-corrected confidence interval level. A mediation effect is classified as significant in the bootstrap test if zero is not within the respective range of the bootstrapping confidence intervals. The bootstrap estimation results given in Table 3 show that customer-orientated CSR mediates the relationship between familiness and potential AC as zero is not within the respective range of the bootstrapping confidence intervals (LL $= 0.033$; UL $= 0.103$), which further supports hypothesis H6a. However, we find no empirical support that community- and employee-orientated CSR mediates the relationship between familiness and potential AC. As the results in model 8 show, both mediators are not significant while controlling for familiness ($\beta = -0.0385$; p-value $= 0.523$, $\beta = 0.1216$; p-value $= 0.159$). In line with these results, the results from the bootstrap test also shows that zero is within the respective range of the bootstrapping confidence interval in both cases, thus rejecting hypotheses H5a and H7.

The results from model 9 illustrate that employee-orientated CSR and customer-orientated CSR fully mediate the relationship between familiness and realized AC. First, again, a significant relationship between familiness and employee-orientated CSR and customer-orientated CSR is evident from the results in models 5 and 6. Second, the results for model 2 show a significant relationship between familiness and realized AC. Third, a significant relationship exists between employee-orientated and customer-orientated CSR and realized AC, while controlling for familiness (model 9: $\beta = 0.1205$; p-value $= 0.002$, $\beta = 0.4344$; p-value $= 0.000$) supporting H5b and H6b. Fourth, the familiness coefficient in model 9 is not significant anymore ($\beta = 0.0328$; p-value $= 0.447$), indicating a full mediation. This result leads us to reject H1b, ultimately. Moreover, results from the bootstrap test in Table 3 show that all mediation coefficients are all significantly different from zero—strengthening the empirical support for H5b and H6b.

To check the robustness of the results, we conducted several tests: First, to rule out if endogeneity is an issue, we tested if the main results stay robust if we exclude the familiness subscale "family-employee bond." Indeed, it can be argued that the "family-employee bond" subscale and "employee-oriented CSR" subscale may measure the same thing. Empirically, we first checked if both subsets correlate very strongly. Hence, we estimated Pearson's correlation coefficient equal to 0.4048, which indicates a rather moderate correlation. Second, we ran all regression models excluding the "family-employee bond" subscale from the family scale. The results remained mostly robust (for details see Appendix Table 6). However, we did not find proof anymore for a direct relationship between familiness and potential AC so that we conclude that H1a is ultimately only partly confirmed. Also, and based on our theoretical arguments, we are confident that the sub-dimension "family-employee bond" reflects a specific decision premise, which causes specific CSR activities (here: employee-orientated CSR activities).

Table 4 provides an overview of the hypotheses and their empirical support.

6 Theoretical and practical implications

In a "knowledge-based economy" (Melnikas, 2010), factors influencing the exchange and transfer of knowledge are becoming increasingly important for developing dynamic capability and competitiveness (Teece, 2010). In this context, our study provides some interesting findings by concentrating on the antecedents of AC in the family business context. For potential AC, we find that the influence of the family via familiness on potential AC is mediated by the family firm's customer-orientated CSR actions. Although hypothesized, we do not find any mediation effect with regard to employee- and community-orientated CSR on potential AC. For realized AC, our results show a mediation effect for customer- and employee-oriented CSR. Although hypothesized, we did not find a direct effect for realized AC and our empirical results indicate that the direct effect of familiness on potential AC is only partially confirmed. These findings may be explained by the fact that family businesses benefit strongly from their general positive image among customers and employees. This image emanates from a family business and is expressed through a high level of familiness (Zellweger et al., 2012). Through CSR, this familiness can be actively signaled and effect customers in particular (Zhang et al., 2020). As employee- and community-oriented CSR do not show the expected mediation effects, we assume that especially for potential AC these CSR measures are not specific enough and too fuzzy to signal the family-specific characteristics. Therefore, we assume that this finding can be attributed to the fact that these two family-induced CSR measures are the key link fully translating and signaling family expectations via decision premises to the stakeholders. CSR activities, which underline the positive and value oriented orientation of family firms, signal trustworthiness and allow stakeholders to receive and understand the decision premises of the family based on familiness. Consequently, we emphasize that investments especially in customer-oriented CSR, but also partly in employee-oriented CSR positively affects AC, especially in family businesses, through the activation and use of family business-specific resources.

Our results also support the assumption that CSR activities in family businesses are also economically worthwhile (Campopiano & De Massis, 2015). Absorptive capacity is an important dynamic capability for innovation (Lichtenthaler & Lichtenthaler, 2009). Through its external and internal orientation, CSR creates trustworthiness and the opportunity to signal and utilize the unique resources of family businesses (Zerbini, 2017) and following make family firms more attractive for example for collaborative innovation projects.

Our study contributes to the literature on familiness in family businesses (Habbershon & Williams, 1999). Family businesses are heterogeneous, so a mere distinction between family businesses and nonfamily businesses is insufficient to study family businesses (Chua et al., 2012; Marques et al., 2014). Rather, the heterogeneity must be better understood, which can be achieved through deeper insights into the concept of familiness (Andersén, 2015; Kotlar et al., 2020). Moreover, there are only a few studies that have empirically examined the effect of familiness (measured with the FIFS scale) on family firm outcomes (Weismeier-Sammer et al., 2013). Our results indicate that the unique resources of the family can be leveraged in the context

Table 3 Bootstrap estimation for mediation effects

Potential absorptive capacity	Effect	Bootstrap SE	Lower-level bootstrap CI	Upper-level bootstrap CI
CSR_Employee	.042	.032	− .016	.110
CSR_Customer	.067	.018	.033	.103
CSR_Community	− .015	.025	− .068	.033
Total indirect	.116	.027	.063	.170
Realized absorptive capacity	Effect	Bootstrap SE	Lower-level bootstrap CI	Upper-level bootstrap CI
CSR_Employee	.042	.017	.014	.081
CSR_Customer	.082	.020	.043	.124
Total indirect	.124	.028	.072	.181

of AC if CSR measures are executed. We therefore assume that CSR is an instrument that conveys harmony with the culture and the values of the family business (Marques et al., 2014), thereby increasing the trustworthiness needed to generate competitive advantages, for example, through AC.

Our analysis also shows that the relationship between familiness and potential AC is mediated by customer-oriented CSR. With regard to realized AC, we show that customer- and employee-oriented CSR are significant mediators. Thus, our analysis can also make several important contributions to the AC literature. We show that it is important to differentiate between potential and realized AC. Moreover, in a dynamic environment, AC is an important dynamic capability and a basis for companies to act ambidextrously (Rothaermel & Alexandre, 2009). Researchers have identified numerous factors that can influence AC. A conceptual paper by Kotlar et al. (2020) has shown that ownership and emotional concerns can influence AC and distinguish between the capability and willingness to absorb external knowledge. With this study, we contribute to the discussions on capability, as well as to those on the ability and willingness paradox in family firms (e.g., Chrisman et al., 2015; Debellis et al., 2020). The capability to utilize and signal family resources by undertaking CSR activities contributes to a firm's capability. Corporate social responsibility can signal trustworthiness and openness for the exchange of knowledge and creates an environment that covers both potential and realized AC (Martínez & Rodríguez del Bosque, 2013). This enables family businesses to be open to the environment and actively manage this openness while maintaining control.

Our findings extend the current literature on CSR in family businesses. Corporate social responsibility is often considered primarily because of its social, ethical, or environmental dimensions (Faller & zu Knyphausen-Aufseß, 2018; Van Gils et al., 2014; Vazquez, 2018). We add to the emerging body of literature that explores how CSR in specific contexts (i.e., family businesses) can also generate economic benefits as it incentivizes customers and employees to share and provide valuable knowledge resources (Bingham et al., 2011; Cantrell et al., 2015; Farooq et al., 2014). Moreover, we also show that CSR activities are not always beneficial. While community-oriented CSR has no impact on AC, CSR activities directed at customers and employees are beneficial to the firm's knowledge base. The literature on family businesses and the familiness scale emphasizes the importance of the embeddedness and local engagement of family businesses (Basco, 2015; Frank et al., 2017; Habbershon et al., 2003; Pearson et al., 2008). However, we cannot prove any effect, at least concerning AC. Nevertheless, it could be that community-oriented CSR has an indirect effect since engagement in the community would also indirectly affect customers or employees. In addition, CSR activities in the community can positively affect the congruence of the values of family businesses. We assume that value congruence has another effect. In this study, we argue the signaling effect of CSR measures. Trustworthy signals are sent if they are measures that are integrated into the corporate strategy, are thus implemented in the long term, and also serve the purpose of the company (Panwar et al., 2014). The corporate strategy is often also linked to the family strategy (Williams et al., 2018). If

Table 4 Results of the hypotheses testing

H1a:	*An increase in familiness is positively related to potential AC*	(✓)
H1b	*An increase in familiness is positively related to realized AC*	✖
H2a:	*An increase in employee-oriented CSR activities is positively related to potential AC*	✖
H2b:	*An increase in employee-oriented CSR activities is positively related to realized AC*	✓
H3a:	*An increase in customer-oriented CSR activities is positively related to potential AC*	✓
H3b:	*An increase in customer-oriented CSR activities is positively related to realized AC*	✓
H4:	*An increase in community-oriented CSR activities is positively related to potential AC*	✖
H5a:	*Employee-oriented CSR activities positively mediate the relationship between familiness and potential AC*	✖
H5b:	*Employee-oriented CSR activities positively mediate the relationship between familiness and realized AC*	✓
H6a:	*Customer-oriented CSR activities positively mediate the relationship between familiness and potential AC*	✓
H6b:	*Customer-oriented CSR activities positively mediate the relationship between familiness and realized AC*	✓
H7:	*Community-oriented CSR activities positively mediate the relationship between familiness and potential AC*	✖

these measures fail, or if partners interpret these measures as greenwashing, this would have a strong negative impact on the family firm and the family members. In particular, in family businesses, in which the name of the business and the family are the same, the detection of greenwashing negatively affects the business and reputation of the family (Astrachan et al., 2018). In other words, the loss of image and reputation, particularly in the case of family-owned SMEs, increases the pressure not to be suspected of greenwashing, as there would be a lack of resources to compensate for this loss of image (Astrachan et al., 2018; Du, 2015; Kim et al., 2017).

Finally, our study also has important practical implications. Our results show that investments in CSR measures can be worthwhile for family businesses, for example, to promote the AC of external knowledge. This offers a new perspective on CSR as a strategic management tool for family firms. Corporate social responsibility is not only a measure of ethical and sustainable behavior, but also fruitful for the company's business activities. If CSR is undertaken because it corresponds to the values and economic and non-economic goals of the family business, the use of specific resources following business and family objectives can create benefit.

7 Limitations and future research

Of course, this study is not without its limitations. The study is based on cross-sectional data collected in Germany at a single point in time. Our results therefore only represent a snapshot and are not necessarily transferable to other contexts. No cause-and-effect relationships can ultimately be determined. That is, even though we are confident that a mediation analysis is the appropriate model to test our research question, we are aware that, from an empirical viewpoint, we have to refer to this model as a causal model in a highly restricted sense. For example, we do not use panel data nor do we randomize participants to groups. We also did not have any experimenter control over exposure of the independent variables. Thus, many alternative explanations could probably be offered with the empirical model we propose (including reverse causality) probably getting equally good results using strictly statistical criteria. However, we believe that this is a problem coming with almost any statistical analysis. Consequently, this means that the causal arguments must be strongly grounded in a set of strong theoretical predictions. By drawing on signaling theory to explain our findings, we strongly believe that this is the case. Moreover, there may be some issues with regard to the control variables in our regression models. Specifically, we have to take into consideration that we may have not been able to control sufficiently for internal R&D investments and the level of the workforce human capital. Even though we did include a set of measures reflecting innovation activities, past innovation outputs and training, but we call for future research to maybe include more suitable controls variables.

The data may also be susceptible to bias due to low response or misclassification due to bias in recalls. Please also note that we have not considered the complete CSR construct of El Akremi et al. (2018)—we have only included community, employee, and customer-oriented CSR. We tested the mediation effect of these three dimensions only for potential and realized AC. Other dimensions of CSR could be considered that we have not included for this study. Moreover, the three CSR dimensions we focused on in our study could be analyzed, for example, for all four dimensions of AC (acquisition, assimilation, transformation, and exploitation). Furthermore, we only had one respondent per company. In the employee dimension of CSR in particular, it would be interesting in future research to analyze a second respondent from the workforce. Moreover, we did not investigate whether an investment in one CSR dimension influences another CSR dimension, for example, whether a family business that pays closer attention to the family-employee bond is more likely to invest in customer-oriented CSR. This could be another exciting field of research and raises potential further research questions. Moreover, a comparison between family firms and nonfamily firms could provide further insights into the specific use of CSR measures. Focusing on the current lively discussion of the heterogeneity of family businesses, we have considered our research question within family businesses, but we have not compared these with nonfamily businesses. Last but not least, we support the call of Kotlar and colleagues (2020) that it might be worthwhile to more deeply examine ownership shares, individual dimensions of family life, and how these factors influence AC. In summary, our study shows important antecedents and mechanisms for the AC of external knowledge in family businesses.

Appendix

Table 5 Descriptive statistics and descriptions for variables in models of absorptive capacity in family firms

Variable	Description	Mean/ Pct	SD	Range	Cronbach's alpha
Dependent variables:					
Potential AC	Constructed scale, 9 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	3.73	.56	2.1–4.9	.75
Realized AC	Constructed scale, 12 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	3.8	.54	2.1–4.9	.81
Independent variable:					
Familiness	Constructed scale, 20 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	4.1	.61	1.75–5	.89
Mediator variables					
Employee CSR	Constructed scale, 7 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	3.44	.73	1.29–5	.82
Customer CSR	Constructed scale, 5 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	4.54	.43	2.6–5	.72
Community CSR	Constructed scale, 7 items, measured on a 5-point Likert scale (1 = does not apply at all to 5 = entirely true)	2.72	.96	1–5	.86
Controls:					
Firm's size	How many employees are currently employed in your company? (metric)	70.02	89.88	1–500	
Manufacturing (ref.)	Which industry does your company belong to? (1 = manufacturing, 0 = else)	.24	.43	0–1	
Construction	Which industry does your company belong to? (1 = construction, 0 = else)	.13	.34	0–1	
Trade	Which industry does your company belong to? (1 = trade, 0 = else)	.13	.33	0–1	
Services	Which industry does your company belong to? (1 = services, 0 = else)	.32	.47	0–1	
Crafts	Which industry does your company belong to? (1 = crafts, 0 = else)	.12	.32	0–1	
Other	Which industry does your company belong to? (1 = other, 0 = else)	.06	.24	0–1	
Firm's age	How old is your company? (metric)	54.41	39.04	4–219	
Innovation	Has your company introduced new or significantly improved products to the market (i.e., product innovations) and/ or has implemented process innovations in the last three years? (1 = yes, 0 = no)	.65	.48	0–1	
Performance	Please assess the current business situation of your company based on the following characteristics: sales, profit, cash flows (Likert scale: 1 = much worse to 5 = much better), constructed scale, 3 items	3.62	.76	1–5	
1st generation (ref.)	How many generations has your company been in family ownership? (1 = 1st generation, 0 = else)	.36	.48	0–1	
2nd generation	How many generations has your company been in family ownership? (1 = 2nd generation, 0 = else)	.34	.47	0–1	

Table 5 (continued)

Variable	Description	Mean/ Pct	SD	Range	Cronbach's alpha
3rd + generation	How many generations has your company been in family ownership? (1 = 3rd or more generations, 0 = else)	.3	.46	0–1	
Ownership	What percentage of the equity capital is owned by the family? (1 = 50% and more, 0 = less than 50%)	.91	.28	0–1	
University cooperation	Were the introduced product and/ or process innovations developed in cooperation with Universities? (1 = yes, 0 = no)	.07	.26	0–1	
Firm cooperation	Were the introduced product and/or process innovations developed in cooperation with other companies? (1 = yes, 0 = no)	.21	.41	0–1	
Training	Has your company tried in vain in the last 6 months to fill vacancies for specialists and managers because the applicants had no suitable training? (1 = yes, 0 = no)	.18	.39	0–1	
Education	Has your company tried in vain in the last 6 months to fill vacancies for specialists and managers because the applicants had too little relevant professional experience? (1 = yes, 0 = no)	.19	.39	0–1	
Employment growth	Employment growth of the company in the last three years? Generated metric variable (number of employees at the interview time point divided by number of employees 3 years before)	1.35	2.25	0–35	
Hierarchy	This company is strongly hierarchically organized (1 = yes, 0 = no)	.24	.42	0–1	
Regulations	This company has bureaucratic structures with extensive formal regulations (1 = yes, 0 = no)	.09	.29	0–1	
Participation	Employees are fully involved in decisions (1 = yes, 0 = no)	.58	.49	0–1	
Workforce development	In our family firm, we take great care to ensure the promotion and further development of our employees (1 = yes, 0 = no)	.88	.33	0–1	

Table 6 Robustness check—excluding the FEB subscale from FIFS

	1	2	3	4	5	6	7	8	9
	Potential AC	Realized AC	Potential AC	Realized AC	Employee CSR	Customer CSR	Community CSR	Potential AC	Realized AC
Independent variable:									
Familiness (without FEB subscale)	0.1276*** (0.0450)	0.0869** (0.0405)			0.2621*** (0.0637)	0.1327*** (0.0326)	0.3228*** (0.0821)	0.0627 (0.0446)	0.0023 (0.0376)
Mediator variables:									
Employee CSR			0.1171 (0.0837)	0.1116*** (0.0378)				0.1074 (0.0843)	0.1111*** (0.0382)
Customer CSR			0.3694*** (0.0667)	0.4187*** (0.0583)				0.3512*** (0.0687)	0.4181*** (0.0597)
Community CSR			−0.0269 (0.0587)					−0.0303 (0.0591)	
Controls:									
Firm's size	0.0008** (0.0003)	−0.0002 (0.0003)	0.0006* (0.0003)	−0.0004* (0.0002)	0.0006 (0.0004)	0.0003 (0.0002)	0.0009 (0.0007)	0.0006* (0.0003)	−0.0004* (0.0002)
Firm's age	−0.0007 (0.0009)	0.0010 (0.0009)	−0.0007 (0.0009)	0.0011 (0.0008)	−0.0016 (0.0013)	0.0003 (0.0007)	-0.0024 (0.0020)	−0.0007 (0.0009)	0.0011 (0.0008)
Innovation	0.1731** (0.0687)	0.1402** (0.0606)	0.1160* (0.0643)	0.0659 (0.0548)	0.2798*** (0.0880)	0.1030* (0.0561)	0.3889*** (0.1160)	0.1187* (0.0642)	0.0660 (0.0548)
Performance	0.1180*** (0.0395)	0.1214*** (0.0326)	0.1229*** (0.0377)	0.1187*** (0.0304)	0.0637 (0.0504)	−0.0099 (0.0311)	0.0770 (0.0687)	0.1170*** (0.0381)	0.1185*** (0.0305)
2nd generation[2]	−0.0019 (0.0684)	−0.0377 (0.0642)	−0.0054 (0.0642)	−0.0513 (0.0602)	0.0308 (0.0934)	0.0248 (0.0572)	0.0906 (0.1271)	−0.0112 (0.0641)	−0.0515 (0.0597)
3rd + generation[2]	−0.0249 (0.0928)	−0.1504* (0.0865)	0.0337 (0.0910)	−0.1084 (0.0835)	0.0452 (0.1363)	−0.1106 (0.0860)	0.1218 (0.1843)	0.0128 (0.0905)	−0.1092 (0.0818)
Ownership	0.0809 (0.1044)	0.0332 (0.1014)	0.0992 (0.0939)	0.0461 (0.0938)	−0.2462** (0.1144)	0.0357 (0.1011)	−0.3277* (0.1759)	0.0849 (0.0957)	0.0456 (0.0939)
University cooperation	0.0322 (0.1187)	0.2895*** (0.0980)	−0.0359 (0.1177)	0.2229** (0.0874)	0.0925 (0.1597)	0.1337* (0.0756)	0.0617 (0.2471)	−0.0228 (0.1144)	0.2234** (0.0876)
Firm cooperation	0.0686 (0.0700)	0.0578 (0.0674)	0.0197 (0.0703)	−0.0091 (0.0644)	0.1660 (0.1020)	0.1162** (0.0551)	0.2052 (0.1485)	0.0162 (0.0695)	−0.0093 (0.0643)
Training	0.1113 (0.1001)	0.0760 (0.0869)	0.0531 (0.0944)	0.0236 (0.0761)	0.0488 (0.1191)	0.1117 (0.0832)	-0.2033 (0.1676)	0.0607 (0.0936)	0.0239 (0.0764)
Education	−0.0658 (0.0892)	−0.0505 (0.0790)	−0.0079 (0.0845)	0.0051 (0.0704)	−0.0320 (0.1171)	−0.1236 (0.0819)	0.0351 (0.1700)	−0.0179 (0.0844)	0.0047 (0.0712)
Employment growth	−0.0109 (0.0088)	0.0043 (0.0112)	−0.0142 (0.0095)	−0.0003 (0.0101)	−0.0159 (0.0101)	0.0153*** (0.0057)	−0.0186 (0.0210)	−0.0151* (0.0086)	−0.0004 (0.0101)
Hierarchy	0.0156 (0.0694)	0.0111 (0.0597)	0.0565 (0.0657)	0.0452 (0.0547)	−0.1537* (0.0906)	−0.0395 (0.0537)	−0.1161 (0.1205)	0.0424 (0.0651)	0.0447 (0.0547)
Regulations	−0.0242 (0.0988)	−0.0059 (0.0918)	−0.0576 (0.0921)	−0.0471 (0.0821)	0.2832** (0.1101)	0.0231 (0.0695)	0.2188 (0.1553)	−0.0561 (0.0941)	−0.0470 (0.0821)
Participation	0.1539** (0.0606)	0.2818*** (0.0553)	0.1293** (0.0587)	0.2469*** (0.0495)	0.1235 (0.0830)	0.0510 (0.0478)	0.0833 (0.1085)	0.1252** (0.0589)	0.2467*** (0.0496)
Workforce development	0.2426*** (0.0814)	0.3486*** (0.0832)	0.1594** (0.0749)	0.2389*** (0.0658)	0.3025** (0.1270)	0.1826** (0.0842)	0.1888 (0.1524)	0.1517** (0.0751)	0.2386*** (0.0664)
_cons	2.2152*** (0.2220)	2.3889*** (0.2306)	0.7810** (0.3241)	0.6002** (0.3000)	1.9190*** (0.3087)	3.7741*** (0.2233)	1.0181*** (0.3738)	0.7145** (0.3303)	0.5978* (0.3038)
Obs	327	327	327	327	327	327	327	327	327
R-squared	0.2768	0.3616	0.3415	0.4751	0.2883	0.2563	0.2172	0.3461	0.4751

Robust standard errors are in parenthesis; [1]reference: manufacturing; [2]reference: 1st (founder) generation. For simplicity, we excluded the display of industry dummies

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 7 Corporate social responsibility scale

Employee-oriented CSR
Our company implements policies that improve the well-being of its employees at work
Our company promotes the safety and health of its employees
Our company avoids all forms of discrimination (age, sex, handicap, ethnic, or religious origin) in its recruitment and promotion policies
Our company supports equal opportunities at work (e.g., gender equality policies)
Our company encourages employees' diversity in the workplace
Our company helps its employees in case of hardship (e.g., medical care, social assistance)
Our company supports its employees' work and life balance (e.g., flexitime, part-time work, flexible working arrangements)
Customer-oriented CSR
Our company checks the quality of goods and/or services provided to customers
Our company is helpful to customers and advises them about its products and/or services
Our company respects its commitments to customers
Our company invests in innovations, which are to the advantage of customers
Our company ensures that its products and/or services are accessible for all its customers
Community-oriented CSR
Our company invests in humanitarian projects in poor countries
Our company provides financial support for humanitarian causes and charities
Our company contributes to improving the well-being of populations in the areas where it operates by providing help for schools, sporting events, etc.
Our company invests in the health of populations of developing countries (e.g., vaccination, fight against AIDS)
Our company helps NGOs and similar associations such as UNICEF, the Red Cross, and emergency medical services for the poor
Our company gives financial assistance to the poor and deprived in the areas where it operates
Our company assists populations and local residents in case of natural disasters and/or accidents

Source El Akremi et al. (2018)

Table 8 Absorptive capacity scale

Potential absorptive capacity
Acquisition
We have frequent interactions with other in the industry to acquire new knowledge related to product development
Employees are engaged in cross-functional work
We collect information through informal means (e.g. lunch or social gatherings with customers and suppliers, trade partners and other stakeholders)
We are hardly in touch with other firms and stakeholders in the industry (reverse coded)
We organize special meetings with customers, suppliers, or third parties to acquire new knowledge on process, product, logistics and distribution related innovation
We operations regularly approach third parties outside the industry (such as professional organizations) to gather information
Assimilation
We are slow to recognize shifts in the environment (e.g. competition, regulation and demography) (reverse coded)
We are able to quickly identify new opportunities to meet our customer needs
We quickly analyse and interpret changing market demands
Realized absorptive capacity
Transformation
We regularly consider the consequences of changing market demands in terms of new products
Employees record and store newly acquired knowledge for future reference
We quickly recognize the usefulness of new external knowledge to existing knowledge
Our employees hardly share practical experiences with each other (reverse coded)
We laboriously grasp the opportunities from new external knowledge (reverse coded)
Departments periodically meet to discuss consequences of new product development and other process or organization innovation
Exploitation
It is clearly known how activities within and between departments should be performed
We are less responsive to customer complaints (reverse coded)
We have a clear division of roles and responsibilities
We constantly consider how to better exploit knowledge
We have difficulty implementing new products and new processes (reverse coded)
Our employees speak a common language regarding our innovation practices

Source Fernhaber and Patel (2012)

Table 9 Family influence familiness scale (FIFS)

Subscale ownership, management, and control (OMC)
In our family business, we take great care
...that only family members are owners of the firm
...that the firm's management consists exclusively of family members
...that several family members are involved in the firm's management
...that family control and independence are maintained
Subscale proficiency level of active family members (PAF):
In our family business we take great care
...that family members working in the company have at least the same qualifications as nonfamily employees
...that family members working in the company show at least the same performance as nonfamily employees
Subscale sharing of information between active family members (SOI):
In our family business, we take great care
...that family members working in the company know about important events in the company
...that all family members working in the company are also able to make use of informal communication
Subscale transgenerational orientation (TGO):
In our family business, we take great care
...to think in generations
...to avoid selling the company to nonfamily members
...that the company can be passed on to the next generation
Subscale family-employee bond (FEB):
In our family business, we take great care
...that family members working in the company are confidants for the employees
...to have a reliable permanent staff
...to secure our employees' jobs also in times of crisis
...to safeguard furthering and developing our employees
...that the family members working in the company have a lively exchange with nonfamily employees
Subscale family business identity (FBI):
In our family business, we take great care
...that the family gives a face to the company
..that our family business is socially active in the community/region
...to always market our family business as such
...to convey the history of our company to our employees

Source Frank et al. (2017)

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