OUTCOME-BASED IMITATION IN FAMILY FIRMS' INTERNATIONAL MARKET ENTRY DECISIONS

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ABSTRACT

This study examines the effects of family involvement on international market entry. Bridging theories of interorganizational imitation with the notion of socioemotional wealth protection, we argue that family-managed firms are more likely to act as "intuitive statisticians", using the internationalization outcomes of industry peers to determine when to internationalize. An event history analysis of 2,427 manufacturing firms supports this position. Family-managed firms' likelihood to internationalize increases as prior entrants' performance mean and variance increase. Ultimately, our study demonstrates that this imitation strategy enables family-managed firms to reduce risk and endure longer in broached international markets.

Keywords: family firms, international market entry and survival, imitation, socioemotional wealth, uncertainty.

INTRODUCTION

The international strategies of family firms have received considerable attention (e.g., Alessandri, Cerrato, & Eddleston, 2018; Bhaumik, Driffield, & Pal, 2010; Fernández & Nieto, 2005; George, Wiklund, & Zahra, 2005; Gómez-Mejía, Makri, & Larraza-Kintana, 2010; Hennart, Majocchi, & Forlani, 2017). The majority of studies in this domain adopt the behavioral agency model which suggests that family efforts to protect family socioemotional wealth (SEW) deters family firms from entering international markets (Bhaumik et al., 2010; Gómez-Mejía et al., 2007, 2010; Lahiri, Mukherjee, & Peng, 2020). Gómez-Mejía et al. (2010), for example, argue that the members of a controlling family are willing to sacrifice financial benefits from internationalization to avoid accessing external financing or ceding power to nonfamily professionals with the skills to grow internationally.

The behavioral agency model (BAM) suggests that family firms' desire to protect SEW leads them to act more conservatively, avoiding decisions that would increase performance variability and thereby risk failure (Gómez-Mejía et al., 2007). However, the evidence on family

firms' internationalization is mixed (Arregle et al., 2017), and scholars now acknowledge that family firms are heterogeneous, gravitating toward extreme tails of behavioral and outcome distributions (Chua et al., 2012; Miller & Le Breton-Miller, 2020). Indeed, contrary to BAM expectations, family firms are sometimes celebrated as among the most successful global companies (e.g., Casillas & Pastor, 2015; De Massis, Audretsch, Uhaner & Kammerlander, 2018a), suggesting that their commitment to long-term value creation facilitates, not constrains, internationalization (e.g., Zahra, 2003; Arregle, Naldi, Nordqvist, & Hitt, 2012). Because of such contradictions, researchers have called for greater attention to the nuanced drivers of family firm internationalization. In a recent meta-analysis, Arregle et al. (2017) found that family firms' likelihood to internationalize depends on a variety of situational factors. Others have highlighted the need to parse the dimensions of internationalization decisions, such as "timing, speed, pace, and resilience" (Debellis et al., 2021, p.13).

To build a more fine-grained understanding of the drivers of international market entry decisions in family firms, we shift the focus from whether family firms are more or less likely to internationalize than others to *when family-managed firms are more or less likely to do so, and with what adaptive implications*. Specifically, we draw on theories of imitation and its outcomes (Lieberman & Asaba, 2006) for insights into decisions under uncertainty (Gaba & Bhattacharya, 2012; Haunschild & Miner, 1997). Internationalization by industry peers provides information about its popularity and success in uncertain contexts, thereby providing cues for imitation (see Lieberman & Asaba, 2006; Naumovska, Gaba, & Greve, 2021). Two core modes of imitation are identified: *frequency-based imitation* (e.g., Bikhchandani et al., 1998; Fiol & O'Connor, 2003) and *outcome-based imitation* (e.g., Haunschild & Miner, 1997).[1] Whereas frequency-based imitation is based on prevalence or popularity and maintenance of competitive parity, outcome-

based imitation is based on anticipated decision consequences, discriminant information processing, and competitive differentiation.

We argue that the goal of preserving family social and financial assets and maintaining distinctiveness causes family-managed firms, more than non-family firms, to rely more on outcome-based imitation and less on frequency-based imitation in international expansion. This results in more considered market entry decisions that enhance venture reliability and longevity – key indicators of success (Barkema et al., 1996, 1997). We test these arguments on international market entry decisions of 2,427 Spanish manufacturing firms from 1999 to 2012. The results confirm that family-managed firm international expansion is shaped by outcome-based imitation, whereas nonfamily firms are more driven by frequency-based imitation. We also find that family-managed firms exhibit more stable performance and endure longer in broached foreign markets. Thus, our results suggest that imitation processes and targeted information processing are important drivers of international market entry and its outcomes in family firms.

Our research makes several contributions. First, we advance beyond the SEW perspective on family firm internationalization (Gómez-Mejía et al., 2010) by broaching the interorganizational imitation literature and providing a more nuanced portrait of how family-managed firms mitigate uncertainty in international market entry. In addition, we reveal important mechanisms influencing the relationship between family involvement and internationalization outcomes, thus responding to a pressing need for a more nuanced understanding of the relationship between family involvement, internationalization, and its consequences for firm performance (Arregle et al., 2016; Boellis, Mariotti, Minichilli, & Piscitello, 2016; De Massis, Frattini, Majocchi, & Piscitello, 2018b; Kano & Verbeke, 2018; Reuber, 2016). Finally, our study contributes to the literature on organizational imitation (e.g.,

Gaba & Terlaak, 2013; Haunschild & Miner, 1997; Henisz & Delios, 2001) by showing that imitation choices not only depend on context, but also on the priorities and motives of decision makers such as family firm owners and managers.

THEORY DEVELOPMENT AND HYPOTHESES

International Market Entry in Family Firms

Family firm owners and managers exhibit particular priorities and risk preferences that cause significant behavioral and performance differences between family and nonfamily firms (Amore et al., 2021; Chrisman, Chua, & Sharma, 2005; Gómez-Mejía et al., 2007, 2011; Miller, Le Breton-Miller, & Lester, 2010, 2013). Prior studies have found a negative relationship between family involvement and foreign sales and direct investments (e.g., Bhaumik, et al., 2010; Fernández & Nieto, 2005; Gómez-Mejía et al., 2010; Hennart et al., 2017). Gómez-Mejía et al. (2010) showed that family firms prefer domestic rather than international diversification. Similarly, others have found a negative effect of family involvement on export propensity and intensity (Fernández and Nieto, 2005, 2006) and on the scale, scope, and speed of internationalization (Cerrato & Piva, 2012; Graves & Thomas, 2006, 2008; Sciascia, Mazzola, Astrachan, & Pieper, 2012).

Much of this work builds on the behavioral agency model and the SEW perspective (Gómez-Mejía et al., 2007). According to these views, controlling family members' accumulated affective endowments from their firms shape how they evaluate gains and losses from their strategic decisions. These socioemotional endowments stem from enduring corporate control, emotional and reputational attachment and shared identification with the firm, social ties with longstanding stakeholders, and the possibility to renew family bonds through dynastic succession (Amore et al., 2021; Chrisman & Patel, 2012; Kotlar et al., 2018; Le Breton-Miller & Miller,

2020). Family firms are argued to place greater emphasis on SEW than on purely financial considerations and thus to be reluctant to engage in decisions that may dilute family ownership and control and prevent intra-family succession, even if this risks poor performance. Yet, when facing poor performance, family members' emotional attachment to the firm increases their sensitivity to organizational failure, inducing them to protect existing assets and avoid decisions that may increase performance variability (Gómez-Mejía et al., 2007; Lumpkin & Brigham, 2011). Extending this logic to international strategy, Gómez-Mejía et al. (2010) argue that foreign market entry entails potential SEW losses, hence family firms will internationalize less than others (see also De Massis et al., 2018b).

However, the BAM and SEW perspectives are theories of decisions under risk (Wiseman & Gómez-Mejía, 1998), i.e. decision making where individuals can identify all potential outcomes of a choice and their probabilities (cf. Bromiley & Rau, 2019). Yet most decisions in SEW-based studies involve uncertainty rather than risk, implying that individuals cannot envision all potential outcomes of a choice (Knight, 1921). Due to their unfamiliarity with market characteristics, firms aiming to expand internationally "must successfully counter uncertainty surrounding the governance of transactions in the new markets to reap the desired benefits of higher profitability, growth, or survival." (Henisz & Delios, 2001, p. 444). Indeed, the outcomes of internationalization decisions are often hard, if not impossible, to predict.

The literature provides substantial evidence that risk and uncertainty elicit very different responses (cf. Bromiley & Rau, 2019, p.25; Ellsberg, 2001). It is important therefore to explain how family firms mitigate such uncertainty in assessing the consequences of international market entry. Thus we elucidate how family involvement in both firm ownership and management prioritizes different uncertainty mitigation strategies.

Uncertainty Mitigation and Interorganizational Imitation

In uncertain decision contexts, firms update their information about the potential consequences of a choice with information from others' behavior (Cyert & March, 1963; Greve, 1998). Thus, foreign market entry decisions by rivals in the same home country industry often serve as a reference set for uncertainty-mitigation (e.g., Davis, Desai, & Francis, 2000; Fernhaber & Li, 2010; Gimeno, Hoskisson, Beal, & Wan, 2005; Henisz & Delios, 2001). Theories of imitation in response to uncertainty cluster around two broad, distinct but not mutually exclusive, modes of imitation: frequency-based and outcome-based (cf. Haunschild & Miner, 1997). Table 1 summarizes the theoretical perspectives for each mode, their underlying mechanisms, and the levels and types of inference.

INSERT TABLE 1 ABOUT HERE

Frequency-based imitation. Under this mode, firms adopt behaviors and choices based on increasing diffusion among other players. Frequency-based imitation is featured in several literature streams. First, in the economic literature on information cascades, it is often associated with herd behavior: firms observing international market entry by other firms may assume that behavior to be valuable, update expectations accordingly, and follow suit with imitation (Banerjee, 1992; Bikhchandani et al., 1992, 1998). Not requiring substantial inferential effort or analysis, imitation is grounded on the assumption that others possess superior information, leading firms to imitate while discarding their private information (cf. Bickchandani et al, 1992; Rao, Greve, & Davis, 2001). Second, competitive dynamics theory assumes that firms imitate to maintain competitive position: "if rivals match each other, none become better or worse relative to each other" (Lieberman & Asaba, 2006, p. 375). In the context of internationalization, rivals' matching one another's entries into foreign markets is referred to as "bunching" (Gimeno et al.,

2005; Knickerbocker, 1973). This behavior is deliberate and involves inferential effort to assess whether a focal firm has the capabilities to match competitors (Stephan & Boeker, 2001). Finally, neo-institutional theory views imitation as an attempt to gain legitimacy, emphasizing that the diffusion of behavior conveys legitimacy to imitators (DiMaggio & Powell, 1983). This perspective emphasizes social motivations over technical ones. Imitation here is not driven by calculative rationality but the belief that "common things are good" (Greve, 2013, p.108).

Outcome-based imitation. Organizational learning theorists propose a different imitation mode that reflects more complex inferences than those involved in frequency-based imitation. They see imitation as a means to reduce the costs and risks of experimentation (Levitt & March, 1988). To do so, firms learn vicariously by observing the consequences of other firms' actions (Levinthal & March, 1993). If adoptors do well, they are imitated, otherwise, imitation is avoided or retarded (Gaba & Bhattacharya, 2012; Haunschild & Miner, 1997). Outcome-based imitation relates more closely to technical (i.e., performance-related) than social (i.e., legitimacy-related) motivations and is often aimed at attaining a "second-mover advantage" ensuing from more thorough processing of signals from the environment to mitigate uncertainty (Fiedler & Juslin, 2006; Lieberman & Montgomery, 1988).

Imitation in Family-Managed Firms

Our main argument is that, given the level of uncertainty involved in the decision to internationalize, the foreign market entries of family and non-family firms are likely to be determined by different imitation modes: whereas nonfamily firms' decisions are likely to be driven by *prevalence* considerations to maintain competitive parity, family-managed firms' international market entry is driven by performance *outcome* competitive differentiation objectives.

Family-managed firms' susceptibility to international market entry popularity. For family firm owners and managers, failures from internationalization may represent a significant financial loss (DeTienne & Chirico, 2013), as well as damages to the family reputation, limited career opportunities for family members, emotional disappointment, and other aspects eroding SEW (Gómez-Mejía et al., 2010). Families' financial wealth is often concentrated in the company, making them especially careful in allocating funds (Miller & Le Breton-Miller, 2005). In addition, financial capital may be at a premium and have to be allocated more carefully (Carney, 2005). Hence, compared to counterparts with no family involvement, dispersed ownership, and external CEOs, family-managed firms are likely to be more concerned with the sustainability of their internationalization prospects, being more vigilant in their information search and calibrating their decisions to ensure both survival and preservation of control (cf. Fourné & Zschoche, 2020; Patel & Fiet, 2011; Reuber, 2016).

This, in turn, could induce them to interpret signals from the competition more cautiously. Given the more significant stakes involved in their international market entry decisions, family-managed firms are less likely to discount their own beliefs and private information based on the number of industry peers operating in international markets. Indeed, when international market entry is a product of unreflective imitation of rivals with short-term objectives, its costs can be steep (cf. Banerjee, 1992; Bikhchandani et al., 1998; Fiol & O'Connor, 2003).

Furthermore, compared to their nonfamily counterparts, family members' stronger identification with the firm can make them view their resource endowments as distinctive (Habberson & Williams, 1999; Sirmon & Hitt, 2003). So, while bunching behavior reinforces tacit collusion among rivals to maintain competitive resource parity (Lieberman & Asaba, 2006),

family-managed firms are likely to be less eager to match the behavior of competitors and instead focus on leveraging their idiosyncratic resources and capabilities.

Finally, strategic distinctiveness combined with concentration of power and authority in the controlling family is likely to free family-managed firms, relative to their nonfamily counterparts, from the need to account for their actions to external constituencies, thereby giving them the discretion to act according to their particularistic goals (Carney, 2005). Although Miller, Le Breton-Miller, and Lester (2013) find US publicly listed family firms to display a stronger motivation to follow strategic behaviors exhibited by industry peers to gain legitimacy in the eyes of external evaluators, Mazzelli, Kotlar, and De Massis (2018) show that the desire to be perceived as both distinctive and legitimate can lead family-managed firms to undertake more selective imitation strategies, thereby resisting isomorphic pressures at the broader industry level. In sum, due to lessened susceptibility to both competitive and institutional pressures, we expect these firms to be less responsive to increases in the number of international market entries among other industry players, relative to nonfamily firms.

> **Hypothesis 1:** *When the number of industry peers operating in international markets increases, the likelihood of entering an international market increases less in family-managed firms than in nonfamily firms.*

Family-managed firms' sensitivity to international market entry outcomes. To expand internationally, many family firms want to understand thoroughly the conditions, rules, and strategies that will enable them to cope with uncertainty (Liesch & Knight, 1999; Mata & Portugal, 2002; Mitchell, Shaver, & Yeung, 1994). If family-managed firms are less susceptible to the sheer number of prior international market entrants, they can also see the collective internationalizing behavior of peers as an opportunity to discover the fruits of competitors' internationalization efforts, learn from their errors, and identify latent flaws (Chrisman & Patel,

2012; De Massis et al., 2017). Because these firms are concerned with the long-term future of the business, for example, to secure career opportunities for the family and accumulate financial wealth and SEW for later generations (Miller & Le Breton-Miller, 2005), they will be especially careful in scrutinizing the consequences of competitors' market entry decisions. By acting as intuitive "statisticians" and observing outcomes that occurred after their peers internationalized, family managers will be more inclined to enter international markets only when such entry has clearly produced valuable returns for others.

> **Hypothesis 2**: *When the average performance of industry peers operating in international markets increases, the likelihood of entering an international market increases more in family-managed firms than in nonfamily firms.*

It is also likely that family-managed firms will interpret between-firm performance variance amongst prior entrants differently from nonfamily firms. High variance in performance outcomes among prior entrants deters international market entry because it signals the impossibility of reaching competitive parity by matching rival moves, as well as a greater risk in international expansion. However, low performance variance reduces potential entrants' ability to recognize events outside an expected range, making inference challenging (Denrell & March, 2001; Musaji, Schulze, & De Castro, 2020; Oliver, Calvard, & Potočnik, 2017). Indeed, "When outcomes are invariant, knowledge about the parameters of prospective performance is absent" (Musaji et al., 2020, p.212). To the extent that family-managed firms see the performance of prior international market entrants as an opportunity to learn, we argue that they will see performance variance as an opportunity to differentiate between successful and unsuccessful internationalization strategies (cf. Henisz & Delios, 2001; Terlaak & Gong, 2008). Therefore, family-managed firms are likely to see performance variance among industry peers operating in international markets less negatively than nonfamily firms.

Hypothesis 3: *When the average between-firm performance variance of industry peers operating in international markets increases, the likelihood of entering an international market decreases less in family-managed firms than in nonfamily firms.*

Finally, family firms' long-term orientation is likely to elicit more prolonged inferential efforts regarding other players' performance. We expect that not only will family-managed firms monitor outcomes after peers have internationalized, but also the performance of entrants over time, to differentiate merit from luck and identify harmful market conditions based on performance instability over time (i.e., within-firm performance variance). Such instability signals market volatility that is not controllable by a firm. We expect these family firms to exhibit heightened sensitivity to temporal variations in the performance of the industry players in international markets. In fact, such variability often indicates unwanted and unanticipated situations that increase the probability of failure (Hannan & Freeman, 1984) as well as instability in market conditions such as consumer tastes and prices, and institutional factors that impair economies of knowledge and experience in foreign markets (Henisz & Delios, 2001) —to which family firms are particularly averse (Gómez-Mejía et al., 2007; DeTienne & Chirico, 2013). The above arguments suggest that, compared to nonfamily firms, family-managed firms' likelihood to internationalize will decrease more with increases in within-firm performance variance.

Hypothesis 4: *When the average within-firm performance variance of industry peers operating in international markets increases, the likelihood of entering an international market decreases more in family-managed firms than in nonfamily firms.*

Family Firms' Uncertainty Mitigation and Survival in International Markets

Wiedersheim-Paul, Olson, and Welch (1978) consider information gathering as fundamental to successful market entry abroad. We posit that more deliberation regarding imitation provides a more effective basis for inference, putting family-managed firms in a better position to reduce uncertainty and tailor their initiatives based on superior knowledge. It also

avoids undue emphasis on popularity, preventing such family firms from faddish adoption lacking in an appreciation of potential benefits and dangers. Overall, we argue that family-managed firms' heightened emphasis on SEW protection and uncertainty reduction will lead to a more thoughtful examination of external information and a more accurate estimation of international market entry potential consequences. By making more effortful inferences about the performance implications of competitors' market entry decisions, these family firms will more effectively reduce uncertainty, delineating a range of potential performance outcomes from internationalization (Hutzschenreuter, Kleindienst, & Schmitt, 2014; Levinthal & March, 1981). Furthermore, the capacity to capture telling details will attune family-managed firms to environments and avoid overly volatile international markets (cf. Romme et al., 2010). This will result in better-timed foreign market entry decisions that increase performance reliability (i.e., minimize venturing risk) and decrease the likelihood of failure in the broached international markets (cf. Fiol & O'Connor, 2003).

Hypothesis 5: *Family-managed firms operating in international markets exhibit higher performance reliability than nonfamily firms.*

Hypothesis 6: *Family-managed firms survive longer in international markets than nonfamily firms.*

METHODS

Data

We tested our hypotheses on Spanish manufacturing firms in the ESEE (Encuesta Sobre Estrategias Empresariales or Survey on Business Strategies) database from 1999 to 2012. ESEE is carried out by the Fundacion Empresa Publica (SEPI Foundation) with the support of the Ministry of Industry of Spain. It was designed to ensure the representativeness of Spanish manufacturing firms through a stratified, proportional, and systematic approach to sampling,

including all firms with more than 200 employees and a stratified random selection of firms employing 10 to 200 workers. Special attention was paid to minimizing attrition and incorporating new firms under the same sampling criteria as for the base year so that the sample remains representative of the Spanish manufacturing sector over time. The survey was designed to capture information about firms' strategies and markets, and includes accounting data on performance. It has been used to investigate strategic decision-making in both family-managed firms (e.g., Greenwood, Díaz, Li, & Lorente, 2010; Mazzelli, Kotlar, & De Massis, 2018) and international markets (Almodóvar & Rugman, 2014; Cassiman & Veugelers, 2006). Our study examines the effect of family involvement on international market entry and survival—aspects neglected in prior studies using this dataset.

Dependent Variables and Econometric Methods

Hazard rate of international market entry and exit. Our dependent variable for hypotheses H1 to H4 is the *hazard rate of international market entry*. Consistent with our theoretical focus on international market entry decisions, we do not consider the scale of internationalization, but rather focus on firms' initial decision to enter international markets.

More specifically, we used an event history analysis to estimate the probability that a firm changed the geographical scope of its main market from "local, provincial, regional, or domestic" to either "foreign" or "national and foreign" [2] (i.e., an *international market entry* event occurred) between t and $t + \Delta t$, given that it was operating in a "local, provincial, regional, or domestic" market at time t, calculated over Δt. As a consequence, those firms operating internationally from inception (543) or entering in 1999 (81) were excluded from the analyses. After constructing and lagging our variables (described below), our final sample included a panel of 2,427 firms corresponding to 15,531 firm-year observations between 1999 and 2012. 537 of

the firms in the final sample undertook international expansion, amongst which 213 were family-managed firms. The highest and lowest number of international market entries occurred in 2006 (70, 30 of which were family firms) and 2004 (24), respectively.

Similarly, to test hypothesis H6, we measured firm survival as the *hazard rate of international market exit* defined as the probability that a firm operating in an international market at time t changed its market scope to "local, provincial, regional, or domestic" (i.e., an *international market exit* event occurred) between t and $t + \Delta t$, calculated over Δt.

$$r(t) = \lim_{\Delta t \to 0} \Pr(t < T \leq t + \Delta t \mid T > t) / \Delta t$$

In this case, all companies entering a foreign market between 1999 and 2012 (618 in total resulting in 3,239 firm-year observations) were considered at risk of exit. 416 firms changed the scope of their markets from foreign to "local, provincial, regional, or domestic" over the study period, 40 percent of which (166) were family-managed firms. The most international market exits occurred in 2008 (123, among which 47 were undertaken by family-managed firms), probably under the effects of the 2007-2008 financial crisis.

Estimating hazard rates requires assumptions about the effect of time or duration on event probability. We split time into annual spells and used a semi-parametric Cox proportional hazard model, in which the underlying distribution of hazard rates is left unspecified. In general, the Cox model is viewed as conservative, which helps to avoid misspecification while allowing for time-varying covariates (Allison, 1995; Kleinbaum & Klein, 1996). Furthermore, because some firms experienced multiple international entries and exits over the study period, in addition to treating our observations as right-censored, we adopted the counting process approach of Anderson and Gill (1982) to adjust for the multi-episodic nature of entry and exit events (Ezell, Land, & Cohen, 2003).

INSERT FIGURE 1 ABOUT HERE

To assess the appropriateness of the Cox model, we first tested the proportional hazard assumption by comparing Kaplan-Meier curves between family and non-family firms in our sample. As Figure 1 illustrates, the two curves are almost parallel, thereby confirming that, at any point in time, the ratios of the entry and exit hazard functions in the group of family-managed firms to the corresponding hazard functions in the group of nonfamily firms are constant.[3]

The decision to enter international markets is endogenous and self-selected. However, the traditional two-step Heckman's correction cannot be applied in survival models. Thus, to generate consistent estimators of the population parameters in the presence of a biased sample, we followed Pan and Schaubel (2008) and used an inverse probability (IP) weighted Cox model to estimate the hazard rate of international market exit. Its purpose is to weigh each firm by the reciprocal of the probability of being sampled (i.e., entering international markets). This approach corrects for selection bias by removing the association of international market entry with the covariates used in the analysis of international market exit. For example, if family-managed firms are less likely to internationalize than nonfamily firms, then family-managed firms entering a foreign market are up-weighted. We implemented this estimation strategy following a two-stage procedure. At the first stage, we ran a logistic regression to estimate international market entry probability at the firm level. In particular, we included all the control variables described below as well as the family firm variable. At the second stage, an IP-weighted Cox model was fit by weighting firms according to the inverse of their estimated probabilities from stage 1. The estimated weights had a mean of 1.02 and a standard deviation of

0.05. Finally, to account for the potential dependence of observations of the same firm as well as for the fact that IP weights were estimated, we used robust standard errors clustered by firm.

Performance reliability. To measure performance reliability (H5), we adopted a multiplicative heteroskedasticity approach allowing for the simultaneous estimation of the effects of covariates on the mean and variance of firm performance (cf. Chrisman & Patel, 2012; Mazzelli, Nason, De Massis, & Kotlar, 2019; Sorenson & Sørensen, 2001). As an indicator of firm performance, we used return on assets (ROA). ROA reflects the effective use of firm assets to generate income and is one of the most commonly used measures of profitability in the literature since it is relatively insensitive to differences in capital structure (Williamson & Cable, 2003). The multiplicative heteroskedasticity model parametrizes the error term $\varepsilon_{i,t}$ as a function of a vector of covariates $X_{i.t-1}$, which has been assumed to include the same factors used to estimate performance mean $Y_{i,t}$, and a random term $u_{i,t}$.

$$Y_{i,t} = \alpha Y_{i,t-1} + \beta X_{i.t-1} + \varepsilon_{i,t}$$

$$\varepsilon_{i,t} = e^{X_{i,t-1}\Gamma} u_{i,t}$$

The linear model for the mean of the dependent variable $Y_{i,t}$ (cf. Gedajlovic & Shapiro, 2002) and the log-linear model for the variance ($\varepsilon_{i,t}$) are estimated simultaneously using maximum likelihood methods (Greene, 1997). The Γ parameters capture the effects of $X_{i,t-1}$ on the logarithm of the variance of firm performance. Hence, factors that increase performance reliability should have $\Gamma<0$; whereas those decreasing performance reliability should have $\Gamma>0$. Following Wooldridge (2002), we extended the original cross-section specification of the multiplicative heteroscedasticity model to a panel data setting using the command xtreghet in Stata 15 (Chrisman & Patel, 2012).

To capture endogeneity effects and correct for selection bias, we adopted Heckman's (1979) two-stage procedure: we computed the inverse Mills ratio based on the residuals of a first stage probit model predicting entry probability. This model showed a statistically significant negative association between the family variable (described below) and international market entry probability (-0.479, $p = 0.006$). Hence, we incorporated the estimated inverse Mills ratios into the performance mean equation of the multiplicative heteroskedasticity model. Our correction for endogeneity proved not to be statistically significant.[4]

Independent Variables

Family firm measures. Consistent with prior literature, we used both a binary measure of *family firm* and a continuous measure of *family influence*. Our *family firm* measure distinguished family firms from nonfamily firms based on family involvement in both firm ownership and management (cf. Greenwood et al., 2010). Specifically, a firm was coded as 1 when owners and their family members were active in managing the focal firm. All firms that did not have either the owner or his/her relatives in the top management team were considered nonfamily firms and coded as 0 (Greenwood et al., 2010). For the continuous measure of *family influence* we counted the number of owners and owner relatives occupying top managerial positions in year t in firms where the family involvement in ownership and management criterion was met (e.g., Chrisman & Patel, 2012; Kotlar et al., 2013).

Number of prior entrants. The number of local entrants into a foreign market was calculated as the number of other firms operating in the focal firm's industry in year t-1, having broached a foreign market between year 1999 and t-1, and indicating the scope of their main market as "foreign" or "national and foreign" in year t-1.

Prior entrants' performance mean. To measure the performance of industry peers operating in international markets, we first calculated the return on assets (ROA) in year t-1 of each firm in our sample. Hence, we averaged the ROA of all other firms operating in the same industry as the focal firm whose main market scope was either "foreign" or "national and foreign" in year t-1.

Prior entrants' between-firm performance variance. We measured the between-firm variance of industry peers' international performance, by computing the variance of the ROAs of firms operating in international markets in year t-1 and belonging to the same industry as the focal firm, according to the following formula: $BFV = \frac{\sum_{i=1}^{N}(p_{iT-1} - \overline{p_{T-1}})}{N_{T-1}}$, where p_{iT-1} is the ROA of industry player *i* operating in an international market in the previous year (*T-1*), and N_{T-1} is the number of industry peers operating in foreign markets in the previous year.

Prior entrants' within-firm performance variance. To measure the average within-firm variance of industry peers' international performance, for each industry peer operating in international markets in year t-1, we calculated the temporal variance of performance between the year of international market entry and year t-1, according to the following formula: $WFV_i = \frac{\sum_{t=T0i}^{T-1}(p_{it} - \overline{p_i})}{T-1-T_{0i}}$, where T_{oi} is the year in which industry player *i* internationalized, p_i is the ROA of the industry player *i* at time *t*, with $T_{0i} \leq t \leq T\text{-}1$ and given $p_{iT-1} \neq Null$. We then averaged the variances to obtain an aggregate measure, as follows: $AWFV = \frac{\sum_{i=1}^{N} WFV_i}{N_{T-1}}$.

Control Variables

We used a series of time-varying and time-constant controls at the firm and market levels. We also included year dummies in all the models to control for the effects of time periods on international market entry, performance reliability, and survival.

Firm-level controls. Since firm characteristics affecting international expansion could also influence survival in the broached international markets, we included a series of control variables. *Age* was the number of years since incorporation. Firm *Size* was measured by the log of total sales in year t-1. In addition to performance and slack at entry, we controlled for organizational *performance* (i.e., ROA) and *slack* in year t-1 measured as the standardized mean of absorbed slack (working capital to sales ratio), unabsorbed slack (current assets to current liabilities ratio) and potential slack (equity to debt ratio) (George, 2005; Mitchell et al., 1994). We also controlled for the focal firm's strategic profile and budget allocation history. We also included *R&D intensity* measured as the ratio of R&D total expenditure to total sales in year t-1; *Advertising intensity* as the ratio of marketing and advertising expenditure to total sales in year t-1 and *Capital intensity* as the ratio of investment in PPE to total sales in year t-1. Since scale-efficient production capacity has been found to enhance survival (Garcia-Sanchez, Mesquita, & Vassolo, 2014), we controlled for *capacity utilization* measured as the average percentage during year t-1 of standard capacity usage. We also controlled for *international patents* registered abroad in year t-1 and the *geographical dispersion* of production facilities. Geographic dispersion was computed as an entropy index, $\sum_r p_r \ln\left(\frac{1}{p_r}\right)$, where p_r was the proportion of the focal firm's branches located in region r in year t-1 (Greenwood et al., 2010). Because international performance may be helped by a parent company or belonging to a business group, we controlled for *parent ownership* —the largest percentage of equity held by another firm. In models estimating performance reliability and survival, we also controlled for the *importance of the foreign market* measured as the weight of the foreign market compared to other markets in which the focal firm was operating in year t-1

Market-level controls. Market uncertainty can affect the decision to internationalize, choice of imitation mode (Henisz & Delios, 2001), and success at international market entry (Rhee & Cheng, 2002). Thus, we included *market uncertainty* measured as the change in the industry concentration ratio accounted for by the four largest firms between year t-2 and t-1 in the models for international market entry, and between year t-1 and t in the models predicting performance reliability and international market survival. We also controlled for *market concentration* in year t-1, using the four-firm concentration ratio as a proxy for sunk costs, entry barriers, and competition. This variable has been used in prior studies investigating international market entry and survival (e.g., Mitchell et al., 1994; Patel, Criaco, & Naldi, 2018). Mitchell et al. (1994) stated that the concentration ratio provides a joint estimate of both the existence of significant sunk costs and entry barriers created by successful incumbents (1994, p. 561). Patel et al. (2018) used the concentration ratio as an indicator of monopoly-like conditions.

RESULTS

INSERT TABLES 2A AND 2B ABOUT HERE

Table 2A provides descriptive statistics and correlations for all variables used to estimate the hazard rates of international market entry. Table 2B reports the descriptive statistics and correlations for the variables used to estimate performance variability and foreign market survival. As the correlation matrixes indicate, correlations were generally low. We checked whether multicollinearity might be affecting the validity of our results by computing the VIFs for our models, including interaction terms. VIFs were below the recommended ceiling of 10, suggesting that multicollinearity was likely not an issue. For the covariates used in the models of foreign market entry rates, the maximum VIF was 7.21 for the interaction term between the family variable and the number of prior entrants, and the mean VIF was 2.24. For those used to

estimate performance reliability and foreign market survival, the maximum VIF was 1.96 (for the size variable) and the mean VIF was 1.20.

INSERT TABLE 3 AND FIGURE 2 ABOUT HERE

In Table 3 we report the results of Cox regression models estimating hazard rates of international market entry. The estimation tables report coefficient estimates, not hazard ratios. A positive coefficient indicates that the likelihood that the firm will enter an international market is increased. Model 1 includes only the control variables. Models 2 to 9 augment Model 1 by adding the *family* variables, each of our moderating variables—that is, *Number of prior entrants*, *Prior entrants' performance mean*, *Prior entrants' between-firm performance variance, and Prior entrants' within-firm performance variance*—and the interaction terms. Finally, Models 10 and 11 are the full models. To provide meaningful interpretations of our results, we evaluate effect sizes by comparing multipliers (or hazard rates–i.e., the exponents of the corresponding parameter estimates) under different scenarios (e.g., Harrison, Boivie, Sharp, & Gentry, 2018; Hsieh, Tsai, & Chen, 2015). We consider hazard rates when moderators are one standard deviation below the mean, equal to it, and at one standard deviation above.

We find support for Hypothesis 1. As shown in Model 2, the coefficient estimate for the interaction between the *family firm* variable and the *number of prior entrants* ($\beta = -0.014$, $p = 0.001$) is negative and significant. Family-managed firms are 69% ($(0.54 – 1.77) / 1.77 \approx -69\%$)[5] less likely than nonfamily firms to enter an international market as the number of industry peers operating in international markets increases from one standard deviation below to one standard deviation above the mean. Figure 3A illustrates the marginal effects of the number of prior entrants on the hazard ratios of entry in family vs. nonfamily firms. Although there is no significant relationship between the number of industry players in international markets and the

probability of entry among family-managed firms, the relationship is positive and significant among nonfamily firms. Hence, family-managed firms are less susceptible to pressures from the frequency of international market entries compared to their nonfamily counterparts. This finding is also supported when using the continuous measure of *family influence* in Model 3 (β = -0.006, p = 0.007).

Hypothesis 2 proposes that the better the performance of industry peers that have expanded internationally, the more likely it is that family-managed firms will internationalize vis-à-vis nonfamily firms. The interaction term between the *family firm* variable and the *prior entrants' performance mean* variable in Model 4 is positive and statistically significant (β = 3.873, p = 0.016). Yet, statistical significance is lost in the full model (Model 10). However, the coefficient for the interaction term remains significant in the full model when adopting a continuous measure of *family influence* (Model 5: β = 2.508, p = 0.002; Model 11: β = 1.770, p = 0.031). Figure 3B illustrates the marginal effects of *prior entrants' performance mean* on the hazard ratios of *international market entry* in family vs. nonfamily firms. Family firms are 88% ((1.49 – 0.79) / 0.79 ≈ 88%)[6] more likely to internationalize as the performance of industry peers operating in an international market increases from one standard deviation below to one standard deviation above the mean. Surprisingly, the effect of prior entrants' performance mean on nonfamily firms' likelihood to enter an international market is negative.

Hypothesis 3 predicted that compared to nonfamily counterparts, family-managed firms' market entry would be less diminished by increases in performance variance among prior entrants. Models 6 and 7 found support for the hypothesis, under the binary *family firm* variable (β = 1.788, p = 0.013) and continuous *family influence* variable (β = 0.678, p = 0.002). However, As Figure 3C illustrates, the relationship between prior entrants' between-firm performance

variability and the probability of international market entry is positive, not negative, among family-managed firms. A family-managed firm's likelihood of international market entry increases by 20 percentage points (pp) (1.11 – 0.91 = 0.20) as prior entrants' performance variance increases from one standard deviation below the mean (hr = exp(1.79*(0.06-0.11)) = 0.91) to the mean (hr = exp(1.79*(0.06+0.11)) = 1.11), and increases by 24 pp as it increases from the mean to one standard deviation above it (hr = exp(1.79*(0.06+0.11)) = 1.35). In contrast, nonfamily firms' likelihood of international market entry decreases by 17 pp (0.87 – 1.04 = -0.17) as prior entrants' performance variance increases from one standard deviation below (hr = exp(-0.79*(0.06-0.11)) = 1.04) to one standard deviation above the mean (hr = exp(-0.79*(0.06+0.11)) = 0.87). This, in turn, results in family-managed firms being 78% ((1.49 - 0.84) / 0.84 ≈ 78%)[7] more likely to enter international markets as the variance of firm performance across industry peers operating in foreign markets in year t-1 increases from one standard deviation below to one standard deviation above the mean. Conversely, we did not find evidence supporting Hypothesis 4 that family-managed firms are less likely, relative to their nonfamily counterparts, to enter international markets in response to the increasing temporal instability (i.e., within-firm performance variance) of prior entrants' performance.

INSERT TABLE 4 ABOUT HERE

Table 4 presents the models testing our Hypotheses 5 and 6 pertaining to performance (un)reliability (log variance) and international market survival. Models 1 and 2 include only the control variables, and Models 3 to 6 add the dichotomous and continuous family variables. In support of our Hypothesis 5 predicting greater performance reliability among family-managed firms operating in international markets than among nonfamily firms, the coefficient for the *family variable* in Model 3 is negative and highly significant ($\beta = -0.174$, $p<0.001$). This result

suggests that family firms operating in international markets exhibit a performance variability that is 16 p.p. (exp(-0.174) – 1 = -0.16) lower, than that of nonfamily firms. This result also holds when using a continuous measure of family influence as reported in Model 4 (β = -0.137, p<0.001).

Hypothesis 6 predicted that family-managed firms would survive longer than nonfamily firms in their international markets—therefore, exhibiting a lower likelihood of exit. It was not supported. Although the coefficient for the *family firm* variable in Model 5 is in the hypothesized direction, it is not statistically significant (β = -0.132, p = 0.120). Marginal support for Hypothesis 6 was found when adopting a continuous measure of *family influence* as shown by the negative and marginally significant coefficient for *family influence* in Model 6 (β = -0.071, p = 0.094). This suggests that, as the number of family members in the top management team increases by one unit, the likelihood of foreign market exit decreases by approximately 7 pp.

Robustness Analyses

Because power imbalances within the family coalition could affect family influence on decision making and hamper heedful interaction, we included a variable for the diversity of the positions held by family members in the models predicting post-entry outcomes. We measured *family power disparity* using a variation of the Gini's index, computed as: $\left(\sum|P_i - P_j|\right)/N^2$, where P_i and P_j represent the position in the firm of family members *i* and *j*, respectively, and P_i = 1 if family member *i* is part of the top management team, whereas P_i = 2 if family member *i* occupies a non-managerial position. *N* is the number of family members in the firm. After controlling for *family power disparity* in the models of survival, we found the coefficients for the *family firm* (β = -0.42, p = 0.011) and *family influence* (β = -0.15, p =0.018) variables to increase in size and statistical significance, whereas family power disparity had a negative effect on

international survival ($\beta = 0.36$, $p = 0.046$; $\beta = 0.23$, $p = 0.081$). Surprisingly, we found power disparity to increase, instead of decreasing, performance reliability ($\beta = -0.47$, $p < 0.001$). This points to the presence of some heterogeneity in the post-entry outcomes between family-managed firms. Finally, to account for the nested structure of our data, we ran multilevel logistic analyses for both international market entry and exit. Specifically, we implemented three-level random intercept logistic models to allow the industry-level intercept to reflect dependence among firms in the same industry, and the firm-level intercept to account for dependence among observations in the same firm (Rabe-Hesketh, Skrondal, & Pickles, 2005). All main results remained largely consistent.

DISCUSSION

Whereas much of the literature on family firms' internationalization focuses on whether they are more or less willing to internationalize than others (Gómez-Mejía et al., 2010), we focus on *when* they are more likely to do so, specifically the conditions making family-managed firms more willing to internationalize. Recognizing that uncertainty is a major factor in international expansion (e.g., Gomez-Mejia et al., 2010; Henisz & Delios, 2001), our study suggests that interpretation of information from other industry players entering international markets is a key influence on how family versus non-family firms deal with uncertainty. Moreover, we show that family and non-family firms differ in the type of information they use in international entry decisions. Our results suggest that family firms are likely to rely on uncertainty-mitigation strategies that are more effortful, patient, and deliberate than those of nonfamily firms - which, in turn, leads to more effective uncertainty reduction and greater performance reliability post entry. Taken together, these findings have important implications for family firm strategic decision-making as well as broader areas of research.

Implications for Family Business Literature

Scholars often view SEW as a factor preventing the international expansion of family firms. Whereas there is evidence supporting this view, prior studies overlooked the critical role of uncertainty in family firms' international market entry decisions. Uncertainty reduction takes place to evaluate possible outcomes of these decisions, especially when both financial and socioemotional wealth is at stake. Family-managed firms' heightened preoccupation with SEW losses may induce them to increase the accuracy of their decisions by herding less than their nonfamily counterparts and focusing more on learning vicariously from other industry players' international entry performance. In so doing, our results also suggest that family-managed firms' international expansion decisions carefully monitor others' decision consequences (Patel & Fiet, 2011), which some have implied family firms to neglect (cf. Nason et al., 2019). This, in turn, may protect them from entry bandwagons requiring reversal, making for more reliable performance and longer survival in foreign markets. Taken together, our findings suggest that a focus on information search and processing can provide a valuable addition to understand family firms' strategic choice under uncertainty.

Accordingly, prior findings of limited international market entry in family firms - but also limited diversification (Gómez-Mejía et al., 2010) and technology adoption (Souder, Zaheer, Sapienza, & Ranucci, 2016) hitherto attributed to SEW loss aversion might instead be due to more careful and deliberate inferential processes in family firms. Supporting this view, our results suggest that family-managed firms' strategic choices are highly dependent on the level and nature of uncertainty surrounding the specific situational context: for instance, when the performance of prior entrants is strong enough to signal the promise of international market entry, these firms become even more likely to enter than nonfamily firms. Put differently, family

firms might be less psychologically biased than the SEW perspective and the behavioral agency model tend to suggest. More broadly, our theory and results extend the behavioral agency model predictions of family firm behavior by introducing important and so far not considered decision rules adopted by family-managed firms to protect their SEW, which are based not only on risk but also on uncertainty.

Importantly, whereas most empirical studies in this literature focus on family firms' willingness to internationalize (with a few exceptions, e.g., Fang et al., 2018), we advance this research by theorizing and testing the differential effects of family involvement in firm ownership and management on post-entry outcomes. Overall, our study opens up several opportunities to further explore the uncertainty mitigation strategies that family firms adopt pre-entry, versus their unique competitive positioning at entry, potential sunk cost bias, or superior adaptative strategies.

Implications for the Literature on Imitation

Our study also contributes to the literature on interorganizational imitation in economics and institutional sociology. While parallel research streams have theorized different imitation modes with distinct underlying motivations and mechanisms, they rest on the common assumption that uncertainty drives imitation (Lieberman & Asaba, 2006). Existing integrative attempts have thus focused on how different types of uncertainty differentially influence firms' reliance on imitation and the choice of imitation mode (e.g., Gaba & Terlaak, 2013; Haunschild & Miner, 1997; Henisz & Delios, 2001). Implicit in this treatment, however, is an assumption that firms' behaviors tend to be homogeneous within uncertainty types.

Although organizational characteristics are frequently incorporated as control variables in models of imitation, their role as a potential source of heterogeneity in firms' inferential efforts

and susceptibility to social influences has received little explicit theoretical attention or empirical investigation (cf. Naumovska et al., 2021). The few available studies examining firm differences as a source of heterogeneity in imitation processes focus on structural aspects that facilitate information access – such as position in network structures (e.g., Kraatz, 1998). In contrast, save for a few exceptions (i.e., Fourné & Zschoche, 2020; Mazzelli et al., 2018), scant attention has been devoted to understanding how goals, motives, and strategic priorities specific to different owners and managers affect information search and processing processes firms use to mitigate uncertainty. Our results show that the choice of imitation mode is affected significantly by family coalitions, opening avenues for more nuanced explorations of the relationship between uncertainty and imitation across firms.

Limitations and Suggestions for Future Research

Of course, our study is subject to limitations. First, we have examined one type of decision in one nation and manufacturing industries only, thus our findings may be bound to the legal, cultural, and institutional context. Second, our international market entry dummy variable does not capture important variations across foreign markets, such as its geographic or cultural distance from the home market. Prior studies found little heterogeneity in the international markets entered by Spanish manufacturing firms, most being UE–15 member states (OEME, 2016). Moreover, the sector in which Spanish firms operate is the very primary driver of their international target markets (Caldera, 2010). However, we encourage scholars to directly measure foreign market variations in future investigations. Third, our analyses capture only the activities of Spanish competitors. However, international market entry decisions may also be influenced by what key international competitors do. Fourth, like the majority of studies in both the family business literature (e.g., Chrisman & Patel, 2012; Gómez-Mejía et al., 2007, 2010)

and the imitation literature (e.g., Gaba & Terlaak, 2013; Haunschild & Miner, 1997; Henisz & Delios, 2001), we inferred aspects related to information search and processing processes from behavioral outcomes. More importantly, we assumed international market entry to be a voluntary decision and imitation as involving a certain degree of deliberateness. Future research on imitation should validate this assumption using primary data to measure deliberation in information processing (e.g., using text analysis or experiments), thereby providing more direct tests of our arguments and their boundary conditions. Outcome-based imitation may be reflected in many other decision contexts such as new technology adoption, new product introductions, new market positions. We thus expect that further insights will emerge when applying our theory to these settings. Outcome-based imitation could be less advantageous in contexts where first movers gain significant competitive advantages.

Finally, our findings on the effects of power disparity on international market entry and its outcomes underscore the heterogeneity of family firms. Different ownership and governance structures, as well as the involvement of later generations, may either exacerbate or dampen some of the motivations underlying outcome-based imitation. For example, lone-founder firms have been found to undertake more farsighted and risky behaviors than traditional family firms, perhaps reflecting their tolerance of uncertainty. Unfortunately, our definition of family firms does not allow us to differentiate between family-controlled and lone-founder-controlled firms. Furthermore, it treats firms with multiple, potentially controlling family owners but without family managers as nonfamily firms, thus potentially excluding some family-owned firms. Therefore future research should replicate our study using different definitions of family firms and investigate the differential effects that uncertainty may have on the choice of imitation mode across different types of family firms.

Relatedly, we are not able to fully differentiate between exits that were voluntary – due to anticipation of future performance declines and/or the identification of more lucrative opportunities – and exits that were the result of involuntary failures – due to unfit firms succumbing to selection forces. Delving more into this issue is important to understand whether family firms' lower exit rates reflect a weak disposition towards pursuing alternative opportunities (e.g., sunk cost bias), or simply a better fit with the broached international market.

In summary, this study provides new theory and evidence on how family-managed firms make international market entry decisions using outcome-based modes of imitation as an uncertainty mitigation strategy. We hope that the inferential processes explored by our study will guide further examinations of family firms' decisions under uncertainty and encourage family-managed firms to make internationalization decisions that thoroughly consider and parse signals and threats from their environment.

NOTES

[1] In framing frequency-based and outcome-based modes of imitation, we are consistent with the original conceptualization of Haunschild and Miner (1997). However, these are not mutually exclusive ways to mitigate uncertainty; they merely differ in their signals (entrants vs. performance) and degree of deliberation involved in drawing inference. A third mode is also acknowledged in the imitation literature -- trait-based imitation, whereby firms selectively imitate the behavior of a reference group to which they feel to belong. In international market entry, firms in the same home country industry are usually the reference group. Hence, we restrict our focus to the influence of industry peers' internationalization decisions on future international market entry.

[2] A drawback of our measure is that it does not account for the specific country(ies) in which a firm internationalizes. The variables XCEE, XOCDE, XIBERO, XRESTO in the ESEE database provide some information about a firm's exports by geography. However, because these variables are available only every four years and refer to exporting activities only, we could not employ them in our analyses. Although this is a limitation, it may not be serious as prior studies show that follwing Spain's entry into the Eurozone in 2001 market entry decisions of Spanish manufacturing firms focused on UE–15 member states (OEME, 2010). Also, the sector in which Spanish firms operate was the primary driver of their international market targets (Caldera, 2010). Therefore, firms belonging to a specific sector most likely internationalized into the same countries.

[3] To test the proportionality assumption for time dependent covariates (included in the list of independent and control variables below), we used the tvc and texp options in the stcox command in Stata 15. These options allow for creating interactions of a list of predictors (tvc option) and a function of survival time (texp option) and testing all the time dependent covariates together by comparing the smaller model without any time dependent covariates to the larger model that includes all the time dependent covariates. The tests for our market entry and exit models were not statistically significant (International market entry: $\chi^2 = 25.14$, $p = 0.121$; International market exit: $\chi^2 = 24.35$, $p = 0.796$), suggesting that proportionality could not be rejected and thus that there was no violation of the proportional hazard assumption.

[4] We have omitted estimates from the probit model and multiplicative heteroscedasticity models of performance (ROA) mean, available on request. In the multiplicative heteroscedasticity models, the coefficient of the *family firm* variable was positive but not statistically significant ($\beta = 0.011$, $p = 0.259$).

[5] Family firms' likelihood to entry as the number of industry peers operating in international markets increases from -1sd to +1sd = exp(-0.014*2* 21.94) = 0.54; Nonfamily firms' likelihood to enter as the number of industry peers increases from -1sd to +1sd = exp(0.013*2* 21.94) = 1.77.

[6] Family firms' likelihood to entry as the average performance of industry peers operating in an international market in year t-1 increases from -1sd to +1sd = exp(3.87 *2* 0.05) = 1.49; Nonfamily firms' likelihood to enter as the average performance of industry peers operating in an international market in year t-1 increases from -1sd to +1sd = exp(-2.21*2* 0.05) = 0.79.

[7] Family firms' likelihood to entry as the variance of firm performance across industry peers operating in foreign markets in year t-1 increases from -1sd to +1sd = exp(1.79*2*0.11) = 1.48; Nonfamily firms' likelihood to enter as as the variance of firm performance across industry peers operating in foreign markets in year t-1 increases from -1sd to +1sd = exp(-0.80*2*0.11) = 0.84.

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Table 1. Frequency- and Outcome-Based Imitation: Behavioral Mechanisms, Underlying Motivations, and Level of Deliberate Efforts

Imitation Modes	Theoretical Perspectives	Underlying Motivation	Proposed Behavioral Mechanisms	Level of Inferential Effort	Level of Deliberation
Frequency-based imitation	Information cascades theory (Banerjee, 1992; Bikhchandani et al., 1992)	Solving information asymmetries	Herd behavior	Low	High
	Competitive dynamics theory (Knickerbocker, 1973)	Maintaining competitive parity	Bunching behavior	Medium	High
	Neo-institutional theory (DiMaggio & Powell, 1983)	Gaining legitimacy	Mimetic isomorphism	Low	Low
Outcome-based imitation	Organizational learning theory (Levitt & March, 1988)	Economizing on search costs	Vicarious learning	High	High

Table 2A. Means, Standard Deviations, and Correlations (Sample Used to Estimate Foreign Market Entry Hazard Rates, N = 15,531)[a]

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	International market entry (event)	0.03	0.18									
2	Performance $_{t-1}$	0.13	0.31	-0.01								
3	Age	29.72	21.03	0.01	-0.04							
4	Size$_{t-1}$	15.95	2.00	0.05	0.02	0.36						
5	Slack $_{t-1}$	0.02	1.87	-0.01	-0.08	0.03	-0.09					
6	R&D intensity $_{t-1}$	0.01	0.02	0.03	-0.06	0.08	0.16	0.00				
7	Advertising intensity $_{t-1}$	0.01	0.03	0.00	0.00	0.23	0.19	0.03	0.07			
8	Capital intensity $_{t-1}$	0.04	0.10	-0.01	-0.01	0.00	0.02	-0.01	0.12	0.00		
9	Capacity utilization $_{t-1}$	80.56	15.73	0.00	0.09	-0.03	0.13	-0.06	0.00	-0.03	0.03	
10	International patents $_{t-1}$	0.32	5.06	0.00	-0.02	0.06	0.10	-0.01	0.22	0.07	0.00	0.01
11	Geographical dispersion $_{t-1}$	0.07	0.27	0.02	-0.02	0.16	0.38	-0.01	0.02	0.11	-0.01	0.03
12	Parent ownership	30.84	43.17	0.03	-0.02	0.18	0.59	-0.05	0.11	0.07	0.02	0.04
13	Market uncertainty $_{t-1}$	8.27	18.68	0.07	0.01	0.02	0.06	0.01	0.01	0.00	0.00	0.01
14	Market concentration $_{t-1}$	23.95	32.36	0.02	0.02	0.14	0.30	0.01	0.08	0.07	0.03	0.04
15	Family firm	0.48	0.50	-0.03	0.03	-0.15	-0.45	0.04	-0.07	-0.06	0.00	-0.06
16	Family influence	0.77	0.99	-0.02	0.02	-0.09	-0.31	0.03	-0.06	-0.04	0.00	-0.05
17	Number of prior entrants $_{t-1}$	43.83	21.95	0.02	-0.02	0.03	0.05	-0.01	0.11	-0.10	-0.05	-0.07
18	Prior entrants' performance mean $_{t-1}$	0.10	0.05	0.00	0.10	-0.05	-0.01	-0.03	-0.11	0.03	0.04	0.07
19	Prior entrants' between-firm performance variance $_{t-1}$	0.06	0.11	0.02	0.02	0.00	-0.02	-0.01	0.02	-0.02	-0.02	-0.09
20	Prior entrants' within-firm performance variance $_{t-1}$	0.03	0.03	0.03	0.01	0.00	-0.02	0.00	0.07	-0.04	-0.05	-0.07

Variable	10	11	12	13	14	15	16	17	18	19

11	Geographical dispersion $_{t-1}$	-0.01										
12	Parent ownership	0.04	0.23									
13	Market uncertainty $_{t-1}$	-0.01	0.02	0.05								
14	Market concentration $_{t-1}$	0.00	0.11	0.23	0.27							
15	Family firm	-0.03	-0.19	-0.47	-0.03	-0.18						
16	Family influence	-0.02	-0.15	-0.38	-0.02	-0.14	0.81					
17	Number of prior entrants $_{t-1}$	0.05	-0.01	0.07	0.02	0.04	-0.02	-0.01				
18	Prior entrants' performance mean $_{t-1}$	-0.01	0.03	0.00	0.00	0.01	-0.03	-0.02	-0.15			
19	Prior entrants' between-firm performance variance $_{t-1}$	-0.01	-0.01	0.01	0.00	0.00	0.00	-0.01	0.05	0.21		
20	Prior entrants' within-firm performance variance $_{t-1}$	0.00	-0.03	0.01	0.01	0.01	0.01	0.00	0.34	0.10	0.38	

[a] N = 15,531. Correlations greater than |0.02| are significant at p <.05.

Table 2B. Means, Standard Deviations, and Correlations (Sample Used to Estimate Performance Reliability and Foreign Market Exit Hazard Rates, N = 3,239)[a]

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Performance $_{t}$	0.11	0.29										
2	International market exit (event)	0.13	0.33	0.04									
3	Performance $_{t-1}$	0.12	0.26	0.34	0.00								
4	Age	30.85	20.81	-0.02	0.00	0.00							
5	Size$_{t-1}$	16.61	1.88	0.02	-0.01	0.04	0.26						
6	Slack $_{t-1}$	-0.02	1.78	-0.06	0.00	-0.09	0.06	-0.14					
7	R&D intensity $_{t-1}$	0.01	0.03	-0.06	-0.03	-0.09	0.01	0.07	-0.01				
8	Advertising intensity $_{t-1}$	0.01	0.03	0.01	-0.01	0.00	0.14	0.17	0.03	0.04			
9	Capital intensity $_{t-1}$	0.04	0.09	-0.01	-0.01	-0.02	0.03	-0.01	0.01	0.02	-0.02		
10	Capacity utilization $_{t-1}$	80.27	15.68	0.07	0.03	0.09	0.01	0.14	-0.01	-0.01	-0.06	0.05	
11	International patents $_{t-1}$	0.29	3.90	-0.04	-0.02	-0.05	0.07	0.10	-0.02	0.19	0.03	0.01	0.02
12	Geographical dispersion $_{t-1}$	0.10	0.31	-0.01	-0.01	-0.02	0.11	0.40	0.00	-0.04	0.05	-0.03	0.03
13	Parent ownership	39.93	45.61	-0.01	-0.03	-0.01	0.07	0.51	-0.06	0.08	0.05	0.00	0.03
14	Market uncertainty $_{t-1}$	9.81	19.99	0.00	0.07	0.03	0.02	0.06	0.02	0.00	-0.02	-0.01	0.02
15	Market concentration $_{t-1}$	25.46	32.99	0.00	0.00	0.01	0.08	0.17	0.03	0.10	0.08	0.04	0.05
16	International market importance $_{t-1}$	75.95	23.02	-0.03	-0.08	-0.04	-0.09	-0.14	0.01	-0.06	-0.09	0.00	-0.01
17	Family firm	0.42	0.49	0.04	-0.01	0.02	-0.07	-0.43	0.03	-0.02	0.01	0.03	-0.09
18	Family influence	0.69	0.99	0.02	-0.01	0.01	-0.05	-0.30	0.02	-0.01	0.02	-0.01	-0.05
19	Number of prior entrants $_{t-1}$	47.63	22.97	-0.01	-0.03	-0.02	0.05	0.05	-0.06	0.17	-0.06	-0.05	-0.04
20	Prior entrants' performance mean $_{t-1}$	0.09	0.05	0.04	0.03	0.08	-0.03	-0.03	-0.02	-0.10	0.09	0.05	0.04
21	Prior entrants' between-firm performance variance $_{t-1}$	0.06	0.13	0.00	-0.03	0.03	0.00	-0.05	-0.04	0.02	-0.03	0.00	-0.07
22	Prior entrants' within-firm performance variance $_{t-1}$	0.04	0.04	-0.03	-0.06	0.02	-0.01	-0.13	0.00	0.08	-0.06	-0.08	-0.08

	Variable	11	12	13	14	15	16	17	18	19	20	21	
12	Geographical dispersion $_{t-1}$	-0.01											
13	Parent ownership	0.02	0.20										
14	Market uncertainty $_{t-1}$	-0.01	0.03	0.02									
15	Market concentration $_{t-1}$	0.00	0.06	0.12	0.27								
16	International market importance $_{t-1}$	0.01	-0.04	-0.04	-0.03	-0.07							
17	Family firm	-0.05	-0.22	-0.42	-0.02	-0.10	0.07						

18	Family influence	-0.04	-0.18	-0.36	0.01	-0.07	0.04	0.82				
19	Number of prior entrants $_{t-1}$	0.06	-0.02	0.15	0.01	0.06	0.02	-0.06	-0.03			
20	Prior entrants' performance mean $_{t-1}$	-0.02	0.02	-0.01	-0.01	-0.01	-0.06	-0.02	-0.03	-0.10		
21	Prior entrants' between-firm performance variance $_{t-1}$	0.00	-0.03	-0.01	0.01	-0.02	0.00	0.02	0.00	0.07	0.22	
22	Prior entrants' within-firm performance variance $_{t-1}$	0.00	-0.02	-0.01	0.04	0.01	0.01	0.06	0.05	0.38	0.10	0.37

[a] N = 3,239. Correlations greater than |0.02| are significant at $p < .05$.

Table 3. Results of Cox Regression Models of International Market Entry Rates[a]

Variable		(1)	Family firm (2)	Family influence (3)	Family firm (4)	Family influence (5)	Family firm (6)	Family influence (7)	Family firm (8)	Family influence (9)	Family firm (10)	Family influence (11)
Performance $_{t-1}$		-0.184	-0.154	-0.002	-0.162	-0.002	-0.165	-0.002	-0.165	-0.002	-0.154	-0.002
	s.e.	(0.152)	(0.145)	(0.002)	(0.146)	(0.002)	(0.146)	(0.002)	(0.148)	(0.002)	(0.142)	(0.002)
	p-value	0.227	0.289	0.518	0.269	0.474	0.260	0.502	0.264	0.492	0.278	0.513
Age		-0.002	-0.001	0.134***	-0.002	0.135***	-0.002	0.138***	-0.002	0.138***	-0.002	0.133***
	s.e.	(0.002)	(0.002)	(0.029)	(0.002)	(0.030)	(0.002)	(0.030)	(0.002)	(0.029)	(0.002)	(0.029)
	p-value	0.511	0.549	0.000	0.470	0.000	0.479	0.000	0.490	0.000	0.530	0.000
Size$_{t-1}$		0.135***	0.130***	-0.161	0.130***	-0.168	0.132***	-0.179	0.132***	-0.173	0.130***	-0.170
	s.e.	(0.029)	(0.030)	(0.145)	(0.030)	(0.147)	(0.030)	(0.148)	(0.030)	(0.149)	(0.030)	(0.144)
	p-value	0.000	0.000	0.269	0.000	0.252	0.000	0.228	0.000	0.245	0.000	0.237
Slack $_{t-1}$		-0.008	-0.008	-0.009	-0.008	-0.008	-0.009	-0.009	-0.009	-0.009	-0.008	-0.008
	s.e.	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
	p-value	0.756	0.762	0.749	0.771	0.757	0.736	0.740	0.747	0.743	0.762	0.754
R&D intensity $_{t-1}$		5.301***	4.855***	4.775***	4.577***	4.569***	4.549***	4.621***	4.635***	4.659***	4.639***	4.602***
	s.e.	(1.195)	(1.284)	(1.263)	(1.301)	(1.275)	(1.247)	(1.236)	(1.251)	(1.239)	(1.299)	(1.277)
	p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Advertising intensity $_{t-1}$		-1.343	-0.541	-0.630	-0.759	-0.803	-0.748	-0.788	-0.733	-0.759	-0.583	-0.711
	s.e.	(1.438)	(1.419)	(1.417)	(1.405)	(1.414)	(1.405)	(1.414)	(1.406)	(1.414)	(1.413)	(1.417)
	p-value	0.350	0.703	0.657	0.589	0.570	0.594	0.577	0.602	0.591	0.680	0.616
Capital intensity $_{t-1}$		-0.968*	-0.815†	-0.809†	-0.814†	-0.827†	-0.791	-0.801†	-0.805†	-0.806†	-0.787	-0.800
	s.e.	(0.479)	(0.487)	(0.491)	(0.488)	(0.493)	(0.482)	(0.485)	(0.484)	(0.487)	(0.487)	(0.492)
	p-value	0.043	0.094	0.099	0.095	0.093	0.101	0.099	0.096	0.097	0.106	0.104
Capacity utilization $_{t-1}$		-0.002	-0.002	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001
	s.e.	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
	p-value	0.591	0.609	0.631	0.598	0.611	0.576	0.594	0.598	0.602	0.597	0.644
International patents $_{t-1}$		-0.018	-0.022	-0.021	-0.020	-0.020	-0.019	-0.019	-0.020	-0.020	-0.021	-0.021
	s.e.	(0.012)	(0.015)	(0.014)	(0.014)	(0.014)	(0.013)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)
	p-value	0.137	0.144	0.148	0.148	0.153	0.140	0.142	0.145	0.146	0.136	0.151
Geographical dispersion $_{t-1}$		0.040	0.084	0.087	0.073	0.077	0.066	0.069	0.068	0.072	0.080	0.086
	s.e.	(0.145)	(0.144)	(0.144)	(0.145)	(0.145)	(0.145)	(0.145)	(0.145)	(0.145)	(0.144)	(0.145)
	p-value	0.783	0.561	0.545	0.615	0.597	0.648	0.635	0.639	0.620	0.577	0.552
Parent ownership		-0.000	-0.001	-0.001	-0.001	-0.000	-0.001	-0.000	-0.001	-0.000	-0.001	-0.001
	s.e.	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	p-value	0.855	0.465	0.688	0.578	0.752	0.598	0.792	0.570	0.768	0.495	0.703
Market uncertainty $_{t-1}$		0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***	0.013***
	s.e.	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
	p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Market concentration $_{t-1}$		-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001	-0.002
	s.e.	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	p-value	0.264	0.255	0.249	0.212	0.213	0.206	0.205	0.197	0.204	0.280	0.256
Family variable			0.572**	0.285**	-0.465*	-0.246*	-0.179	-0.021	-0.085	0.023	0.195	**0.044**
	s.e.		(0.220)	(0.106)	(0.208)	(0.107)	(0.117)	(0.055)	(0.138)	(0.065)	(0.299)	**(0.160)**
	p-value		0.009	0.007	0.025	0.022	0.127	0.704	0.540	0.727	0.513	**0.786**
Number of prior entrants $_{t-1}$			0.013***	0.011***	0.007**	0.007**	0.006*	0.006*	0.007*	0.007*	0.014***	0.011***
	s.e.		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
	p-value		0.000	0.000	0.009	0.008	0.014	0.014	0.013	0.013	0.000	0.000

Variable	(1)	Family firm (2)	Family influence (3)	Family firm (4)	Family influence (5)	Family firm (6)	Family influence (7)	Family firm (8)	Family influence (9)	Family firm (10)	Family influence (11)
Family variable * Number of prior entrants $_{t-1}$		**-0.014*** **	**-0.006** **							**-0.015*** **	**-0.006***
s.e.		**(0.004)**	**(0.002)**							**(0.005)**	**(0.003)**
p-value		**0.001**	**0.007**							**0.001**	**0.029**
Prior entrants' performance mean $_{t-1}$		-0.857	-0.860	-2.211*	-2.368**	-1.070	-0.968	-0.817	-0.821	-2.380*	-2.340*
s.e.		(0.869)	(0.866)	(0.881)	(0.874)	(0.899)	(0.887)	(0.864)	(0.859)	(1.098)	(0.983)
p-value		0.324	0.321	0.012	0.007	0.234	0.275	0.345	0.339	0.030	0.017
Family variable * Prior entrants' performance mean $_{t-1}$				**3.873***	**2.508** **					**2.551**	**1.770***
s.e.				**(1.612)**	**(0.791)**					**(1.631)**	**(0.823)**
p-value				**0.016**	**0.002**					**0.118**	**0.031**
Prior entrants' between-firm performance variance $_{t-1}$		0.393	0.402	0.281	0.296	-0.795	-0.339	0.403	0.405	-0.962	-0.385
s.e.		(0.369)	(0.368)	(0.366)	(0.369)	(0.651)	(0.496)	(0.370)	(0.371)	(0.796)	(0.558)
p-value		0.286	0.275	0.442	0.422	0.222	0.495	0.276	0.274	0.226	0.490
Family variable * Prior entrants' between-firm performance variance $_{t-1}$						**1.788***	**0.678** **			**1.753***	**0.577***
s.e.						**(0.718)**	**(0.222)**			**(0.884)**	**(0.271)**
p-value						**0.013**	**0.002**			**0.047**	**0.033**
Prior entrants' within-firm performance variance $_{t-1}$		2.375†	2.434†	2.013	1.970	2.494†	2.426†	2.041	2.273	1.472	1.894
s.e.		(1.372)	(1.388)	(1.447)	(1.427)	(1.400)	(1.400)	(1.854)	(1.740)	(1.983)	(1.882)
p-value		0.083	0.080	0.164	0.167	0.075	0.083	0.271	0.191	0.458	0.314
Family variable * Prior entrants' within-firm performance variance $_{t-1}$								**0.542**	**0.033**	**1.950**	**0.624**
s.e.								**(2.216)**	**(1.054)**	**(2.685)**	**(1.480)**
p-value								**0.807**	**0.975**	**0.468**	**0.673**
Year dummies	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Log pseudolikelihood	-3793	-3778	-3780	-3782	-3780	-3781	-3782	-3784	-3784	-3773	-3774
Wald χ^2	122.6***	171.2***	166.5***	159.6***	163.2***	162.0***	168.8***	152.9***	155.1***	181.1***	183.2***
Number of observations	15,531	15,531	15,531	15,531	15,531	15,531	15,531	15,531	15,531	15,531	15,531
Number of firms	2427	2427	2427	2427	2427	2427	2427	2427	2427	2427	2427
Number of entries	537	537	537	537	537	537	537	537	537	537	537

[a] Numbers displayed in the estimation table report unstandardized coefficient estimates and not hazard ratios. Positive coefficients indicate that an increase in the explanatory variable increases the hazard rate of international market entry (and vice versa). Each model, except for model 1 which includes only control variables, is estimated using two alternative family firm variables: a family firm dummy and a count measure of family influence.
Numbers in parentheses are robust standard errors clustered by firm.
*** p<.001, ** p<.01, * p<.05, † p<.10

Table 4. Results of Multiplicative Heteroscredasiticity Models of Performance Variability and IP-Weighted Cox Regression Models of International Market Exit Rates[a]

	Perf reliability	Exit Rate	Perf reliability		Exit Rate	
			Family firm	Family influence	Family firm	Family influence
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Performance $_{t-1}$		0.014			0.016	-0.025
s.e.		(0.163)			(0.162)	(0.026)
p-value		0.933			0.920	0.329
Age	0.003***	0.003	0.003***	0.003***	0.003	0.007
s.e.	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.163)
p-value	0.000	0.146	0.000	0.000	0.133	0.967
$Size_{t-1}$	-0.097***	-0.021	-0.110***	-0.107***	-0.030	0.003
s.e.	(0.009)	(0.026)	(0.010)	(0.009)	(0.026)	(0.002)
p-value	0.000	0.414	0.000	0.000	0.258	0.143
Slack $_{t-1}$	-0.049***	0.007	-0.051***	-0.050***	0.006	0.006
s.e.	(0.007)	(0.018)	(0.007)	(0.007)	(0.018)	(0.018)
p-value	0.000	0.718	0.000	0.000	0.758	0.735
R&D intensity $_{t-1}$	-0.980*	-2.646	-0.874†	-0.845†	-2.608	-2.623
s.e.	(0.466)	(2.134)	(0.465)	(0.466)	(2.162)	(2.148)
p-value	0.036	0.215	0.060	0.070	0.228	0.222
Advertising intensity $_{t-1}$	-1.183*	-0.871	-0.635	-0.566	-0.822	-0.819
s.e.	(0.473)	(1.197)	(0.495)	(0.496)	(1.205)	(1.202)
p-value	0.012	0.467	0.199	0.253	0.495	0.496
Capital intensity $_{t-1}$	0.331†	-0.582	0.393*	0.361†	-0.565	-0.597
s.e.	(0.183)	(0.492)	(0.188)	(0.184)	(0.497)	(0.495)
p-value	0.071	0.237	0.036	0.050	0.256	0.227
Capacity utilization$_{t-1}$	0.007***	-0.001	0.008***	0.008***	-0.001	-0.001
s.e.	(0.001)	(0.003)	(0.001)	(0.001)	(0.003)	(0.003)
p-value	0.000	0.778	0.000	0.000	0.756	0.779
International patents$_{t-1}$	0.008**	-0.051	0.008**	0.007**	-0.053	-0.054
s.e.	(0.002)	(0.039)	(0.002)	(0.002)	(0.040)	(0.040)
p-value	0.001	0.191	0.002	0.004	0.186	0.184
Geographical dispersion$_{t-1}$	-0.104*	0.020	-0.139**	-0.153**	0.013	0.007
s.e.	(0.046)	(0.118)	(0.047)	(0.047)	(0.119)	(0.119)
p-value	0.024	0.864	0.003	0.001	0.915	0.952
Parent ownership	0.001***	-0.001	0.001*	0.001†	-0.001	-0.001
s.e.	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
p-value	0.000	0.418	0.043	0.063	0.238	0.224
Market uncertainty$_{t-1}$	0.004***	0.004*	0.004***	0.005***	0.004*	0.004*
s.e.	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
p-value	0.000	0.016	0.000	0.000	0.015	0.014
Market concentration$_{t-1}$	-0.002***	-0.001	-0.002***	-0.002***	-0.001	-0.001
s.e.	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
p-value	0.000	0.531	0.000	0.000	0.523	0.530
Number of prior entrants$_{t-1}$	0.001	0.003	0.000	0.000	0.003	0.003

	Perf reliability	Exit Rate	Perf reliability		Exit Rate	
			Family firm	Family influence	Family firm	Family influence
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
s.e.	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
p-value	0.316	0.126	0.644	0.477	0.160	0.146
Prior entrants' performance mean$_{t-1}$	-2.235***	1.524	-2.368***	-2.207***	1.484	1.474
s.e.	(0.388)	(0.936)	(0.387)	(0.384)	(0.930)	(0.933)
p-value	0.000	0.103	0.000	0.000	0.111	0.114
Prior entrants' between-firm performance variance$_{t-1}$	-0.183	0.162	-0.088	-0.154	0.165	0.155
s.e.	(0.148)	(0.521)	(0.150)	(0.146)	(0.523)	(0.524)
p-value	0.216	0.756	0.588	0.293	0.753	0.767
Prior entrants' within-firm performance variance$_{t-1}$	3.627***	-0.979	3.650***	3.612***	-0.928	-0.921
s.e.	(0.373)	(1.683)	(0.371)	(0.369)	(1.684)	(1.680)
p-value	0.000	0.561	0.000	0.000	0.582	0.584
International market importance$_{t-1}$	0.001*	-0.008***	0.001*	0.001	-0.007***	-0.008***
s.e.	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
p-value	0.018	0.000	0.042	0.112	0.000	0.000
Family variable			**-0.174*****	**-0.137*****	**-0.132**	**-0.071†**
s.e.			**(0.037)**	**(0.015)**	**(0.085)**	**(0.042)**
p-value			**0.000**	**0.000**	**0.120**	**0.094**
Year dummies	Included	Included	Included	Included	Included	Included
R^2 / Log pseudolikelihood	0.12	-2422	0.12	0.12	-2421	-2421
Wald χ^2	432.5***	182.7***	440.0***	429.6***	185.0***	186.1***
Number of observations	3,239	3,239	3,239	3,239	3,239	3,239
Number of firms	618	618	618	618	618	618
Number of exits		416			416	416

[a] Numbers displayed in Models 1, 3, and 4 report unstandardized coefficient estimates. Positive coefficients indicate that an increase in the explanatory variable increases the logarithm of the variance of firm performance and thus decreases performance reliability. Numbers displayed in Models 2, 5, and 6 report unstandardized coefficient estimates and not hazard ratios. Positive coefficients indicate that an increase in the explanatory variable increases the hazard rate of international market exit and therefore decreases the probability of survival (and vice versa). Each model, except for models 1 and 2 which include only control variables, is estimated using two alternative family firm variables: a family firm dummy and a count measure of family influence.
Numbers in parentheses are robust standard errors clustered by firm.
*** p<.001, ** p<.01, * p<.05, † p<.10

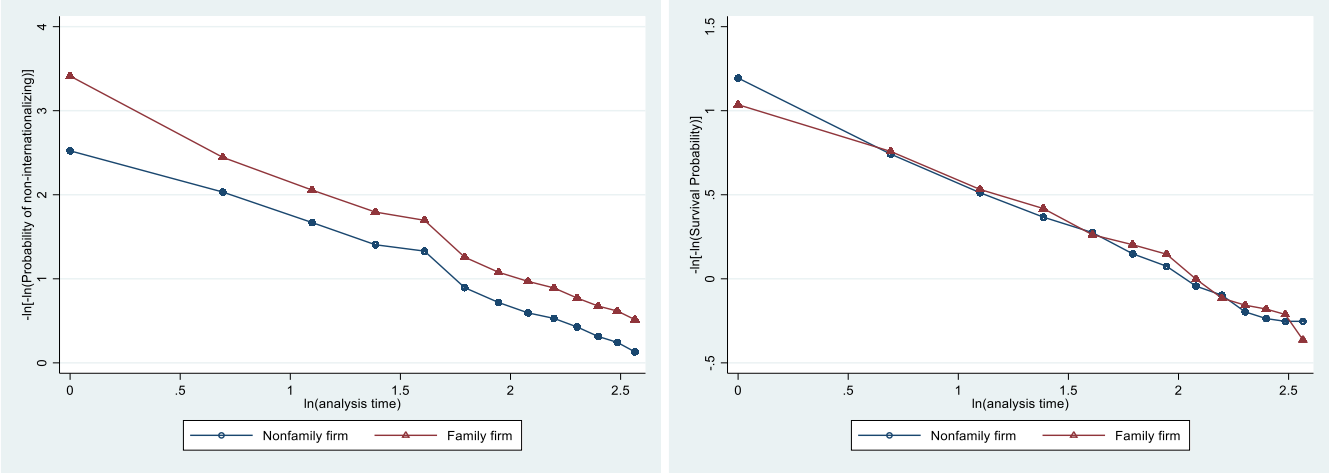

Figure 1. Kaplan-Meier Curves and Predicted Survival Plots for Family and Nonfamily Firms

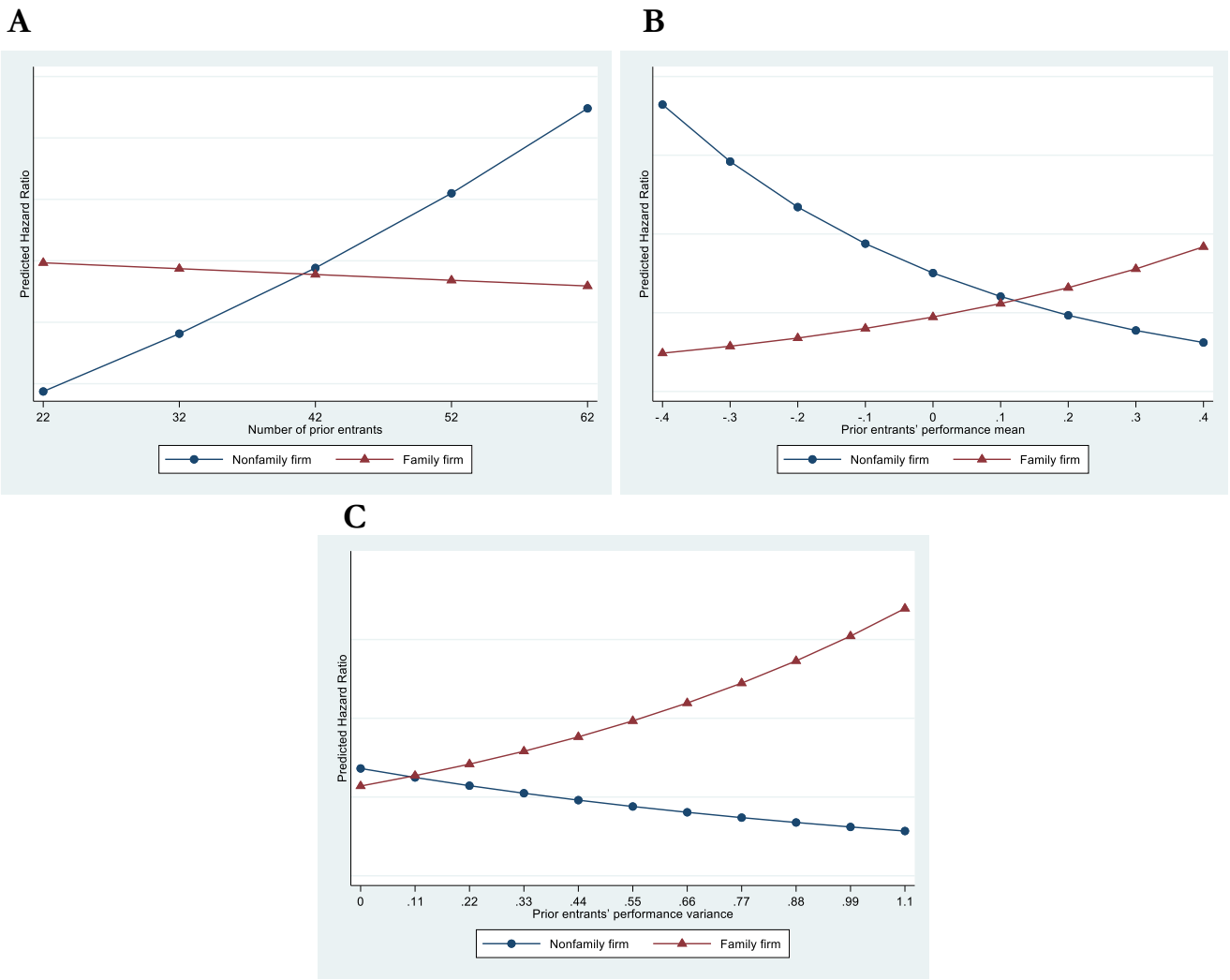

Figure 2. Marginal Effects of (A) Number of prior entrants, (B) Prior entrants' Performance Mean, and (C) Prior Entrants' Between-Firm Performance Variance on the Hazard Ratios of International Market Entry of Family vs. Nonfamily Firms