



Experts or rivals: Mimicry and voluntary disclosure



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ARTICLE INFO

Article history:

Received 18 January 2016

Received in revised form 6 December 2016

Accepted 8 December 2016

Available online xxxx

Keywords:

Imitation

Experience

Competition

Voluntary disclosure

Newspaper

ABSTRACT

This study explores the effect of firm experience and competition on individual firms' motivation to imitate the voluntary disclosure practices of reference firms in product markets. Using Spain's newspaper industry from 1966 to 1993, the empirical findings show that the more experienced firms are, the less likely they are to imitate the disclosure practices of other better-informed organizations. Likewise, more experienced firms show a lower propensity to follow the disclosure practices adopted by the firms on their business segment. By contrast, firms operating in more competitive markets have greater incentives to mimic the disclosure behavior of rival organizations. This article concludes that firm experience and the degree of competition in the market are likely to moderate a firm's incentives to imitate the voluntary disclosure practices of other organizations. Furthermore, the results indicate that the effects of these two factors are not mutually exclusive but rather complementary.

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1. Introduction

Previous management and marketing research on the imitation of voluntary disclosure, mainly focused on the disclosure of CSR activities, shows that due to institutional forces, firms tend to adopt the practices of their main organizational field (e.g., Comyns, 2016; Frias-Aceituno, Rodríguez-Ariza, & García-Sánchez, 2014; Hahn & Kühnen, 2013; Higgins, Stubbs, & Milne, 2015; Moseñe, Burritt, Sanagustín, Moneva, & Tingey-Holyoak, 2013; Nikolaeva & Bicho, 2011; Rego, Cunha, & Polónia, 2015). However, this research provides limited insight into the potential forces that can moderate this imitation behavior. In particular, it is known that firms tend to follow the voluntary disclosure behavior of other organizations, but there is no clear picture of why they imitate this behavior beyond the notion of institutional factors. This work explores the different nuances of imitation. We specifically show that a firm's incentives to imitate the voluntary disclosure practices of different types of organizations are moderated by informational and competitive incentives.

We examine prior literature addressing the imitation of other business practices (i.e., other than voluntary disclosure) (e.g., Lieberman & Asaba, 2006; Ordanini, Rubera, & DeFillippi, 2008). This literature indicates that firms imitate the practices of other organizations because

either they do not have enough information to assess the consequences of those practices (informational reasons) or they want to protect their market positions (rivalry reasons). In the former case, firms tend to imitate other better informed organizations. In the latter case, firms imitate the actions of their direct competitors (e.g., Lieberman & Asaba, 2006; Ordanini et al., 2008). Using this framework, the present study explores whether firm experience and the intensity of product market competition influence an individual firm's incentives to imitate the voluntary disclosure actions of other firms. We claim that firms with more experience are less likely to replicate the disclosure actions of informed organizations or other similar firms in their organizational field. Likewise, firms imitate the disclosure actions of their direct rivals to neutralize the potential risk of losing market share and preserve their status quo in the market. Thus, we claim that firms facing greater competition are more likely to imitate the actions of their direct competitors. To test these notions, this study uses the newspaper industry in Spain during 1966–1993 as an empirical setting. Specifically, the authors examine a firm's decision of whether to disclose its circulation figure to the market (i.e., number of newspapers sold).

As mentioned, this study enriches the previous management and marketing research on the imitation of voluntary disclosure by providing insights about the different forces driving a firm's incentives to imitate. Specifically, this work shows that the imitation of voluntary disclosure practices (similarly to the imitation of business practices) is moderated by informational and competitive incentives. In addition, this study contributes to the scarce accounting literature directly exploring the imitation of voluntary disclosure (e.g., Aerts, Cormier, & Magnan, 2006; Brown, Gordon, & Wermers, 2006; Tse & Tucker, 2010) by showing that the incentives to imitate do not only depend on the

Abbreviations: CSR, Corporate social responsibility; GRI, Global Reporting Initiative; OJD, Oficina para la Justificación de la Difusión; PMC, Product market competition; GNP, Gross national product.

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nature of the information (i.e., bandwagons of positive or negative news) but also are contingent on non-financial factors such as firm experience and competition. Similarly, this study complements the previous literature on the imitation of voluntary disclosure by showing that firms have incentive to imitate the actions of other organizations, to satisfy not only the informational requirements of agents in the financial markets but also the informational needs of their direct customers in the product market. Hence, this study is aligned with accounting academics' suggestions for the need to expand accounting research beyond its current financial–economics approach (e.g., Oler, Oler, & Skousen, 2010).

2. Literature review

Most previous research evidence for the existence of imitation trends in the voluntary disclosure of non-financial information focuses on reporting corporate social responsibility (CSR) practices. Using an institutional approach, this prior research indicates that firms tend to adopt typical practices of their relevant organizational fields (e.g., Aerts et al., 2006; Comyns, 2016; Hahn & Kühnen, 2013; Higgins et al., 2015; Rego et al., 2015) or mimic the disclosure behavior of reference organizations (e.g., Moseñe et al., 2013). In addition, this research stream provides evidence of imitation trends in the adoption of Global Reporting Initiative (GRI) reporting standards (Nikolaeva & Bicho, 2011) and the adoption of integrated sustainability and financial reporting (Frias-Aceituno et al., 2014). Furthermore, some accounting literature provides insights about the imitation of voluntary disclosure practices. Lu and Tucker (2012) investigate the imitation of voluntary disclosure decisions involving non-financial information and incorporate mimetic behavior as a control variable in their model to test the relationship between earnings management and the revelation of strategic plans. Similarly, prior work provides some insights into imitation trends in the voluntary disclosure of financial information. Tse and Tucker (2010) find that the disclosure behavior of peers influences individual firms' disclosure of negative income warnings. Botosan and Harris (2000) include mimetic behavior as a control variable when testing the influence of competition on firms' disclosure behavior. Similarly, Brown et al. (2006) provide evidence of intra-industry herding behavior in capital spending disclosure. Finally, Houston, Lev, and Tucker (2010) use imitation as a control variable to analyze the factors behind earnings guidance. Although useful, this prior work does not provide clear evidence about the different forces driving imitation of disclosure practices of financial and non-financial information. Likewise, it explores the existence of imitation effects in settings in which firms disclose information mostly to satisfy the information needs of financial markets. We aim to enrich this prior knowledge by exploring the drivers of imitation in a setting in which the main users of the information are agents in the product market (e.g., customers and competitors). To accomplish this goal, this study draws from empirical research on the imitation of different firm decisions and practices, such as the existence and dynamics of imitation patterns on entry into new market niches (Debruyne & Reibstein, 2005), adoption of e-commerce (Bhatnagar, Nikolaeva, & Ghose, 2016), adoption of electronic medical records (Angst, Agarwal, Smith, Sambamurthy, & Kelley, 2010), introduction of new product technologies (Giachetti & Lanzolla, 2016), engagement with mergers and acquisitions (Yang & Hyland, 2006), and technological convergence of products (Giachetti & Dagnino, 2015). Refer to Lieberman and Asaba (2006) and Ordanini et al. (2008) for comprehensive reviews of prior theoretical and empirical research on inter-organizational imitation.

3. Theory and hypothesis

3.1. Information-driven imitation of voluntary disclosure practices and firm experience

Firms disclosing information face a trade-off between a positive effect on firm performance because it transmits a positive signal to

customers and helps firms differentiate themselves from rivals (e.g., Grossman, 1981; Milgrom, 1981; Su, Zhao, & Zhou, 2014) and a threat to firm performance because rivals could use this information to compete more aggressively (e.g., Verrecchia, 1983). Hence, a firm's decision to reveal its strategic information to the market is likely to depend on the firm's capacity to estimate the net outcome of these two contrary effects. When an organization possesses the information required for a meaningful cost–benefit analysis, then its voluntary disclosure decisions are likely to be more autonomous (i.e., internally generated). Previous research indicates that a firm's capacity to estimate the outcome of a practice is a positive function of its knowledge of the market, and more specifically, its prior experience performing that specific practice (e.g., Giachetti & Dagnino, 2015; Haunschild & Miner, 1997; Yang & Hyland, 2006). This notion suggests that more knowledgeable and experienced firms are more likely to make internally reasoned voluntary disclosure decisions, while less knowledgeable and experienced organizations, in deciding whether to disclose information, might need to seek alternative decision-making mechanisms, such as imitating the disclosure actions of other organizations in the market (e.g., Lieberman & Asaba, 2006). To cope with their lack of information and minimize the risk of making wrong decisions, firms mimic the disclosure practices of other well-informed or expert organizations or the practices considered usual by other firms operating within the same strategic group (e.g., Haunschild & Miner, 1997; Nikolaeva, 2014; Ordanini et al., 2008). For the purposes of this study, we consider organization size as conferring higher status on firms in terms of expertise in disclosing information. Larger firms might have more resources to analyze the market, enabling them to make more informed decisions (e.g., Gimeno, Hoskisson, Bea, & Wan, 2005; Haunschild & Miner, 1997). Alternatively, firms might imitate the actions of similar organizations in their organizational field (e.g., Terlaak & Gong, 2008) in order to follow the standard and acceptable practices of their relevant organizational field or industry (e.g., Dimaggio & Powell, 1983).

This theoretical rationale indicates that an individual firm's incentives to imitate the disclosure behavior of other players in the market (i.e., larger firms or similar organizations in their field) are likely to depend on the firm's capacity to evaluate the outcomes of disclosure. As firms with more experience are likely to have more information and better knowledge about the consequences of this practice, we expect individual firms with more experience to show a lower tendency to imitate the disclosure behavior of other organizations. Thus, we propose the following hypothesis.

H1a. An individual firm's propensity to imitate previous disclosure practices of expert organizations decreases with the firm's level of experience.

H1b. An individual firm's propensity to imitate previous disclosure practices of other similar organizations (i.e., rivals or non-rivals) decreases with the firm's level of experience.

3.2. Rivalry-driven imitation of voluntary disclosure practices and competition in the product market

Regardless of its uncertainty about the consequences of disclosure, a firm might imitate the disclosure behavior of its rivals to maintain its relative competitive position in the market (Lieberman & Asaba, 2006). Following rivals' actions acts as a mechanism for neutralizing this threat and for keeping a firm's relative competitive market position constant (Knickerbocker, 1973). In other words, when competition is the main driver of imitation, firms frame the non-imitation strategy as a threat to their performance and imitate the behavior of competitors to neutralize that threat (e.g., Nikolaeva, 2014) and preserve their status quo in the market (e.g., Semadeni & Anderson, 2010). This study claims that the existence and strength of this type of imitation effect is likely to be contingent on the intensity of the competition faced by firms in the

product market. If this competition is low, firms have few incentives to imitate because the actions of their rivals do not represent a threat to their status quo. By contrast, when the product market is highly competitive, not following the actions of competitors might have significant negative consequences for firms' status quo. This argument drives the following hypothesis.

H2. An individual firm's propensity to imitate previous disclosure practices of competitors decreases with the intensity of competition in the product market.

4. Methodology

4.1. Research setting

To test the hypotheses, this study uses the newspaper industry in Spain during 1966–1993 as an empirical setting and focuses on the analysis of individual firms' decisions on whether to disclose audited information about their daily circulation figures (i.e., number of newspapers sold).

The use of this industry as an empirical setting has several advantages. First, this industry contains two different types of firms: smaller firms with limited geographic coverage (i.e., local newspapers), which face low or no competition, and larger organizations with nationwide geographic coverage (i.e., national newspapers), which are natural industry leaders and compete directly against each other. This segmentation allows to test our hypotheses in different types of organizations. Second, it makes the analysis of voluntary disclosure considerably simple because firms need to disclose only one figure: the circulation or number of newspapers sold. Third, during the timespan of the study, the only specialized organism that is legally allowed to audit and disclose firms' circulation figures in the newspaper industry was the "Oficina para la Justificación de la Difusión" (OJD), an statutory body similar to the Audit Bureau of Circulations in the US and the Office de "Justification des Tirages" in France. For all practical purposes, the OJD's involvement in auditing and disclosing this information to competitors and customers minimizes the existence of information asymmetries between firms and the market in general. Fourth, the setting allows us to test the imitation of voluntary disclosure practices exclusively in a product market context because firms do not participate in stock markets during the time span of the study. Finally, this industry satisfies the main assumption of the full disclosure equilibrium mentioned by Milgrom (1981) and Grossman (1981). That is, advertisers need to know circulation figures (newspaper's quality) because they convey information about the number of potential advertisement readers. However, at the same time, this information is critical for competitors because it permits them to estimate the disclosing firm's scale of revenue and cost function.

4.2. Data

The dataset includes information on 227 newspapers (15 national and 212 local) from 1966 to 1993 and provides information on a quarterly basis for whether the focal firm i in period t discloses its circulation figure to the OJD. The timespan of the data starts the year in which the OJD began its operations (i.e., 1966) and ends in 1993, which is the last year in which all firms were privately owned and participated exclusively in the product market (i.e., firms not listed in stock markets). The database contains information from the Registry of Journalistic Firms (*Registro de Empresas Periodísticas*), the General Mass Media Guide (*Guía General de Medios de Comunicación*), and the OJD. The database of this study has been used in previous publications that conducted research on such topics as the role of family ties in agency contracts (Gomez-Mejia, Nuñez-Nickel, & Gutierrez, 2001) and the relationship between certified performance and failure in the newspaper industry

(Nunez-Nickel, Gutierrez, & Carmona, 2006). The final sample contains 851 quarter-firm observations for national newspapers and 11,271 quarter-firm observations for local newspapers.

4.3. Model specification

The empirical testing uses two different sets of models, each corresponding to a different type of firm in our setting: local newspapers and national newspapers. Given that local newspapers do not face competition, we do not explore the rivalry-driven imitation for this group of firms. Hence, this study tests the moderating role of firm experience over local newspapers' information-driven imitation (national newspapers and other local newspapers are the imitation targets) and the moderating role of firm experience and the intensity of competition in the product market over national newspapers' propensity to engage in information-driven and rivalry-driven imitation, respectively.

According to the binary nature of the dependent variable (one if newspaper i discloses information at time t and zero otherwise) and the specific panel data characteristics of each subsample of firms, this study uses a pooled logit model with firm-clustered errors in the case of national newspapers and a random-effects logit model in the case of local newspapers. Eqs. (1) and (2) represent the econometric specifications corresponding to national and local newspapers, respectively:

$$\text{Pooled Logit} : P(\text{Disclosure} = 1 | x_i) = \exp(x_i\beta) / (1 + \exp(x_i\beta)) \quad (1)$$

$$\begin{aligned} \text{Random Effects—Logit} : P(\text{Disclosure} = 1 | x_{it}, \alpha_t) \\ = \exp(\alpha_t + x_{it}\beta) / (1 + \exp(\alpha_t + x_{it}\beta)) \end{aligned} \quad (2)$$

In both equations, the model estimates the probability of observing firm i disclosing information as a function of a set of covariates x_i (x_{it}) that contains three groups of variables: (1) variables measuring the disclosure behavior of other organizations, (2) the drivers of imitation (expertise and intensity of competition), and (3) variables controlling for newspapers' propensity to disclose. In the random-effects logit model (i.e., Eq. (2)), the term α_t represents a random intercept accounting for the combined effect of all omitted subject-specific factors affecting a newspaper's willingness to disclose information.

4.4. Variables

4.4.1. Variables measuring disclosure practices of reference firms

In the case of local newspapers, the variables *Experts* and *Similar Firms* measure the total number of national newspapers and the total number of local newspapers (different from local newspaper i) disclosing information in period $t - 1$, respectively, for the local newspaper i in period t . The sign and significance of the coefficient of the interaction term of these variables and the proxy for firm experience (described in Section 4.4.2) provide the elements to test H1aa and H1bb (for non-rival firms) in the subsample of local newspapers. In the case of national newspapers, the variable *Rivals* accounts for the disclosure behavior of competitors (i.e., other national newspapers). For national newspaper i in period t , this variable measures the total number of national newspapers (different from national newspaper i) disclosing information in period $t - 1$. The sign and significance of the coefficient corresponding to the interaction term of this variable and the proxies for firm experience and the intensity of competition in the product market test the validity of H1bb and H2 in the subsample of national newspapers.

4.4.2. Variables measuring the drivers of imitation

This study uses the measure of experience proposed by Giachetti and Dagnino (2015), in which experience is modeled as a function of both firm disclosure experience (i.e., accumulated number of periods disclosing information) and firm age. The variable *Experience* for an

individual firm i in time t is an index calculated in the following way:

$$Experience_{i,t} = \frac{\left[\frac{\ln(1 + Age_{i,t})}{\max(\ln(1 + Age))} \right] + \left[\frac{\ln(1 + Disclosure\ experience_{i,t})}{\max(\ln(1 + Disclosure\ experience))} \right]}{2} \quad (3)$$

In Eq. (3), $Age_{i,t}$ accounts for the age in years of firm i in time t . $Disclosure\ Experience_{i,t}$ accounts for the firm's accumulated disclosure experience of firm i in time t . The formula adds one year to the age and accumulated disclosure experience to use the observations corresponding to firms that are new in the market or firms that have no previous disclosure experience. $Experience$ can take any value between zero (no experience at all) and one (maximum experience in the sample). The sign and significance of the coefficient corresponding to the interaction terms between $Experience$ and $Experts$ and between $Similar\ Firms$ and $Rivals$ to test the validity of H1aa and H1bb, respectively.

The variable PMC (an acronym of product market competition) approximates the intensity of competition in the market of national newspapers (i.e., competition in the product market) through the additive inverse of a Herfindahl–Hirschman index (e.g., Jurkus, Park, & Woodard, 2011). At any moment t , this variable is computed as follows:

$$PMC = 1 - HHI_t = 1 - \sum_{i=1}^N \left(\frac{\text{Newspapers Sales}_{i,t}}{\text{Total Annual Sales of National Newspapers}_t} \right)^2 \quad (4)$$

This variable fluctuates between zero and one. Lower values in the Herfindahl–Hirschman index indicate a less concentrated or more competitive product market. Thus, higher values of PMC indicate more competition in the product market.

4.4.3. Other variables controlling for newspapers' propensity to disclose

All empirical models include a set of control variables that might exert influence on firms' natural propensity to disclose information. First, firm performance works as a signaling mechanism in which firms with relatively good news tend to show a higher propensity to disclose (e.g., Miller, 2002). Because financial information is not available for the entire population of firms in the database, this study approximates the performance of an individual firm as the firm's probability of failure (hazard rate) for every period (calculated with a survival model in which the event is the time from the firm's birth to its demise). The variable $RelPer$ takes a value of one if a firm's performance is lower than or equal to the average performance of its segment (i.e., local or national newspapers) and zero otherwise. Second, the variable $Inertia$ accounts for the possibility that firms simply do what they did in the previous period instead of imitating the behavior of other agents. $Inertia$ takes a value of one if a firm disclosed information in the period $t - 1$ and zero otherwise. Third, the models testing the hypotheses in the group of national newspapers consider the general state of the economy by including the logarithm of the Spanish GNP (in billions of pesetas) at every period t . This variable receives the name of $LnGNP$. The models corresponding to the local newspapers do not include $LnGNP$ as a control variable because this variable is highly correlated with the main variable $Similar\ Firms$. Because $Similar\ Firms$ is one of the main variables of interest in this study and the information contained in the two variables provides similar explanatory power, the variable $LnGNP$ is dropped from the empirical models of the subsample of local newspapers. Fourth, to capture the differences in firms' disclosure behavior derived from changes in the Spanish political regime, the models of both groups of firms include the variables $Dictatorship$, $Transition$, and $Democracy$. $Dictatorship$ takes values of one and zero for observations before and after the dictatorship period in Spain, respectively. $Transition$ takes values of one for observations corresponding to the period between the end of the dictatorship and the beginning of the democratic regime in Spain,

and zero otherwise. Finally, $Democracy$ takes values of one for observations corresponding to the period in which the Spanish democratic system was developed and established, and zero otherwise. Finally, the variable $Subsidy$ controls for the introduction of a subsidy based on diffusion (in 1984) that could increase the firm's incentives to disclose information through the OJD. This variable takes a value of zero for the observations corresponding to periods before 1984 and a value of one for the periods after the introduction of the subsidy.

5. Empirical results

5.1. Descriptive statistics

Table 1 displays the means, standard deviations, medians, and range of the variables described in Section 4.4. Panel A shows a statistical summary of local newspapers, while Panel B provides the statistics related to the set of national newspapers. Panel A shows that local newspapers observe an average of 7 national newspapers ($Experts$) and 49 local newspapers ($Similar\ Firms$) disclosing information. In addition, this panel shows that expertise among local newspapers is quite diverse. The dataset includes firms with plenty of experience (max = 0.97) as

Table 1
Descriptive statistics.

Variable	n	Mean	S.D.	Min	Median	Max
Panel A: local newspapers						
<i>Similar Firms</i>	11,271	49.62	13.84	16	52	74
<i>Experts</i>	11,271	6.99	1.54	0	7	10
<i>Experience</i>	11,271	0.51	0.25	0.02	0.43	0.97
<i>RelPer</i>	11,271	0.30	0.46	0	0	1
<i>Inertia</i>	11,271	0.47	0.5	0	0	1
<i>Subsidy</i>	11,271	0.32	0.47	0	0	1
<i>Dictatorship</i>	11,271	0.36	0.48	0	0	1
<i>Transition</i>	11,271	0.26	0.44	0	0	1
<i>Democracy</i>	11,271	0.14	0.34	0	0	1
Panel B: national newspapers						
<i>Rivals</i>	851	6.22	1.50	0	6	9
<i>PMC</i>	851	0.82	0.03	0.77	0.81	0.87
<i>Experience</i>	851	0.73	0.21	0.02	0.78	0.99
<i>RelPer</i>	851	0.22	0.42	0	0	1
<i>Inertia</i>	851	0.88	0.33	0	1	1
<i>LnGNP</i>	851	10.67	0.31	10.03	10.72	11.15
<i>Subsidy</i>	851	0.28	0.45	0	0	1
<i>Dictatorship</i>	851	0.35	0.48	0	0	1
<i>Transition</i>	851	0.31	0.46	0	0	1
<i>Democracy</i>	851	0.13	0.34	0	0	1

This table presents the means, standard deviations, minimums, medians, and maximums. Panel A shows these statistics for local newspapers and Panel B for national newspapers. Variable definitions:

Audit: Endogenous variable. Takes a value of one if firm i discloses information in time t and zero otherwise.

Rivals: Number of national newspapers (different from national firm j) disclosing information in $t - 1$.

Similar Firms: Number of local newspapers (different from local newspaper i) disclosing information in $t - 1$.

Experts: Number of national newspapers disclosing information in $t - 1$ (used for local newspapers' tests).

PMC: Inverse of the Herfindahl–Hirschman index for the market of national newspapers.

Experience: Index calculated considering previous disclosure experience and age of firm i in time t .

Inertia: Takes a value of one if the firm disclosed information in $t - 1$ and zero otherwise.

RelPer: Ratio of the yearly average hazard rate (i.e., probability of bankruptcy) of the firm divided by the average yearly hazard rate of the segment in which the firm operates (i.e., national or local newspapers) measured for firm t (relative performance).

LnGNP: Logarithm of gross national product (in millions of pesetas) in Spain at time t .

Subsidy: Takes a value of one if time t occurs after 1984 and zero otherwise.

Dictatorship: Takes a value of one if time t occurs after the dictatorship period in Spain and zero otherwise.

Transition: Takes a value of one for observations corresponding to the period between the end of the dictatorship and the beginning of the democratic regime in Spain and zero otherwise.

Democracy: Takes a value of one for observations corresponding to the period between the end of the transition and the beginning of democracy in Spain and zero otherwise.

well as firms that are practically new to the market and/or new to the practice of disclosing information (min = 0.02). Panel B shows that the average number of rival national firms (*Rivals*) disclosing information is slightly higher than six. Similarly, even though the experience of national newspapers shows a wide range (min = 0.02, max = 0.99), the average national newspaper has more experience (mean = 0.73) than does the average local newspapers (mean = 0.51). Likewise, the range of PMC indicates that during the period of analysis, competition in the product market was mostly high (mean = 0.82).

Table 2 depicts the pairwise Pearson correlation coefficients among the set of variables defined in Section 4.4. Panels A and B show the correlations corresponding to the local and national newspapers, respectively. Panel A indicates a high positive correlation between the variables *Experience* and *Inertia* ($r = 0.78$). This correlation appears naturally because firms disclosing information continuously tend to accumulate more disclosure experience. Panel A also suggests that the disclosure practices of other local newspapers (*Similar Firms*) are higher during the period in which the government established a subsidy to promote disclosure ($r = 0.73$) and are smaller during the dictatorship period ($r = -0.84$). By contrast, the variables *RelPer* and *Experience* are negatively correlated ($r = -0.58$). This might be because older (i.e., more experienced) firms tend to perform better than newer (i.e., less experienced) firms. In addition, the statistics show that the number of national newspapers disclosing information is higher during the transition period ($r = 0.60$). Panel B shows that the correlation between *Rivals* and PMC is high and positive ($r = 0.63$). This suggests that when competition is more intense, rival firms tend to disclose more information. Similarly, *Rivals* ($r = 0.65$) and PMC ($r = 0.84$) are higher during the transition period. This might be because during this period, the changes in economic conditions related to the dictatorship period motivated higher competition and disclosure. Similarly, *Subsidy* and PMC are correlated ($r = 0.53$), suggesting there was high competition in the product market after the settlement of the subsidy to promote information disclosure among newspapers. The authors provide no supplementary analysis for the correlations in Panels A and B of Table 2 because, as explained in the next Section 5.2, analysis of the variance inflation factor (VIF) of the main variables of this study indicates that these correlations do not represent a serious threat to the validity of the empirical tests.

5.2. Empirical testing

Table 3 shows the results of the models testing the moderating effect of *Experience* on the expertise-based imitation effect. As depicted in the second column of Table 3, the VIF of the main variables in the models is below the critical level of 10 (e.g., Gujarati, 2003, chap. 10), indicating that multicollinearity is unlikely to affect the results significantly. In this regard, even though we use interaction terms to test the hypotheses, we do not use centered variables in the models. Given that a) the main variables of the models have a reasonably low VIF and b) the inclusion of interaction terms does not generate additional multicollinearity issues (e.g. Disatnik & Sivan, 2016), we use the original variables.

Model 1 shows the main effect of all variables. This model indicates that, keeping all else constant, neither the disclosure actions of other local newspapers (i.e., *Similar Firms*) ($p > 0.10$) nor the disclosure behavior of national newspapers (i.e., *Expert Firms*) ($p > 0.05$) exert influence on local newspaper *i*'s decision to disclose information. Similarly, firm experience (*Experience*) does not influence local newspaper *i*'s probability of disclosure. Model 2 indicates that the disclosure behavior of other organizations affects the disclosure behavior of local newspaper *i* in a non-linear way. More precisely, this influence has an inverted U-shape. A likelihood ratio test indicates that the quadratic term added in Model 2 increases the fit of the model with respect to Model 1 ($\chi^2(1) = 15.08, p > 0.001$). Hence, we test the moderation effects of *Experience* over this non-linear specification. Model 3 indicates that *Experience* exerts a negative influence on the linear term and a positive influence on the quadratic term of *Similar Firms*. Fig. 1 shows the logit of the probability of disclosure given the number of other local newspapers disclosing information in the previous period (i.e., *Similar Firms*) for different levels of *Experience*. As show in Panel A, for low values of *Experience*, the effect of *Similar Firms* on the logit of local newspaper *i*'s probability of disclosure has an inverted U-shape. As the values of *Experience* increase, the inverted U-shape flattens, and when *Experience* is close to the maximum value, the function becomes negative. Panel B shows the marginal changes in the logit of local newspaper *i*'s probability of disclosure. When *Experience* is lower, the change in the logit of the probability of disclosure due to a change in the number of other local newspapers disclosing information in the past is higher. As *Experience* increases,

Table 2
Pearson correlations.

PANEL A: local newspapers											
Variable	1	2	3	4	5	6	7	8	9		
1	<i>Similar Firms</i>	1									
2	<i>Experts</i>	0.07	1								
3	<i>Experience</i>	0.19	0.05	1							
4	<i>RelPer</i>	-0.07	-0.03	-0.58	1						
5	<i>Inertia</i>	0.21	0.03	0.78	-0.60	1					
6	<i>Subsidy</i>	0.73	-0.36	0.13	-0.05	0.17	1				
7	<i>Dictatorship</i>	-0.84	-0.21	-0.20	0.09	-0.22	-0.51	1			
8	<i>Transition</i>	0.05	0.60	0.05	-0.03	0.02	-0.40	-0.45	1		
9	<i>Democracy</i>	0.29	-0.08	0.11	-0.05	0.12	0.20	-0.30	-0.24	1	
PANEL B: national newspapers											
Variable	1	2	3	4	5	6	7	8	9	10	
1	<i>Rivals</i>	1									
2	<i>PMC</i>	0.63	1								
3	<i>Experience</i>	0.04	-0.11	1							
4	<i>RelPer</i>	-0.03	-0.14	-0.21	1.00						
5	<i>Inertia</i>	0.21	0.01	0.37	-0.49	1					
6	<i>lnGNP</i>	0.07	-0.07	0.28	0.09	0.05	1				
7	<i>Subsidy</i>	-0.38	-0.53	0.14	0.10	-0.06	0.70	1			
8	<i>Dictatorship</i>	-0.26	-0.30	-0.21	0.01	-0.02	-0.83	-0.46	1		
9	<i>Transition</i>	0.65	0.84	0.02	-0.15	0.06	0.12	-0.42	-0.49	1	
10	<i>Democracy</i>	-0.11	-0.21	0.20	0.04	0.06	0.21	0.23	-0.29	-0.26	1

This table presents the Pearson (Spearman) correlations above (below) the diagonal of the matrix. For Panel A: correlations $\geq |0.02|$ significant at 5%. For Panel B: correlations $\geq |0.07|$ significant at 5%.

Table 3
Random-effects logit model (local newspapers).

Variables	VIF	1	2	3	4	5
<i>Similar Firms</i>	7.52	−0.002 (−0.106)	0.212*** (3.606)	0.586*** (3.958)	0.218*** (3.235)	0.192*** (3.161)
(<i>Similar Firms</i>) ²	–	–	−0.002*** (−3.852)	−0.006*** (−3.854)	−0.003*** (−3.583)	−0.002*** (−3.433)
<i>Similar Firms</i> × <i>Experience</i>	–	–	–	−0.855*** (−3.012)	–	–
(<i>Similar Firms</i>) ² × <i>Experience</i>	–	–	–	0.008*** (2.787)	–	–
<i>Experts</i>	1.86	−0.114* (−1.789)	−0.249*** (−3.376)	−0.321*** (−4.156)	−0.292 (−1.263)	0.088 (0.570)
(<i>Experts</i>) ²	–	–	–	–	0.004 (0.194)	–
<i>Experts</i> × <i>Experience</i>	–	–	–	–	–	−0.790** (−2.564)
<i>Experience</i>	2.67	−0.488 (−0.685)	−0.574 (−0.794)	22.460*** (3.102)	−0.573 (−0.793)	4.737** (2.144)
<i>RelPer</i>	1.65	−5.017*** (−12.953)	−5.130*** (−12.956)	−5.088*** (−12.825)	−5.126*** (−12.936)	−5.209*** (−12.852)
<i>Inertia</i>	2.78	7.370*** (26.271)	7.431*** (25.982)	7.331*** (25.668)	7.432*** (25.986)	7.552*** (25.278)
<i>Subsidy</i>	6.58	−0.060 (−0.109)	−0.086 (−0.153)	−0.125 (−0.230)	−0.075 (−0.133)	−0.159 (−0.277)
<i>Dictatorship</i>	16.73	−1.186 (−1.429)	−2.143** (−2.444)	−2.294*** (−2.678)	−2.121** (−2.400)	−2.179** (−2.449)
<i>Transition</i>	9.7	−0.202 (−0.288)	−1.073 (−1.443)	−0.938 (−1.307)	−1.118 (−1.435)	−0.962 (−1.270)
<i>Democracy</i>	2.22	0.446 (0.980)	−0.082 (−0.172)	0.065 (0.139)	−0.091 (−0.189)	−0.058 (−0.117)
<i>Constant</i>	–	−1.111 (−0.919)	−3.471** (−2.496)	−12.934*** (−3.794)	−3.560** (−2.432)	−5.285*** (−3.264)
Observations		11,271	11,271	11,271	11,271	11,271
Number of firm		219	219	219	219	219
p		0	0	0	0	0
chi ²		1124	1104	1102	1104	1081
Degrees of freedom		9	10	12	11	11
Log-likelihood		−656.7	−649.1	−643.6	−649.1	−645.8
Significance of RE (chi2)		67.31	74.37	74.68	74.29	75.38

This table shows the results of a random-effects logit model testing the effect of firm experience (*Experience*) on local newspapers' information-driven imitation. The estimators of each variable are reported in the top row, and the χ^2 test values appear in brackets below each coefficient. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Estimated models have the expression $P(\text{Disclosure} = 1 | X_{it}, \alpha_t) = \exp. (\alpha_t + X_{it}\beta) / (1 + \exp. (\alpha_t + X_{it}\beta))$, where $P(\text{Disclosure} = 1 | X_{it}, \alpha_t)$ is the probability of voluntary disclosure for local newspaper i at time t , β is the vector of estimated coefficients, X_{it} is the vector of exogenous variables included in the model, and α_t is a random intercept.

changes in *Similar Firms* tend to generate smaller change in local newspaper i 's probability of disclosure. Similarly, as *Experience* increases, the turning point or inflection point of the function shifts left. This indicates that the aforementioned inverted U-shape exists mostly at lower values of *Experience*. When *Experience* is close to its maximum (i.e., one), the positive effect of the inverted U-shape falls outside the observed range for the variable *Similar Firms*, and hence, the effect of the disclosure behavior of other local newspapers on local newspaper i 's probability of disclosure is negative. In summary, as *Experience* increases, the effect of the disclosure behavior of other local newspapers on local newspaper i 's probability of disclosure decreases and tends to become negative at high values of *Experience*. These results support H1bb because they suggest that imitation (i.e., replicating the disclosure actions of other organizations) tends to be smaller or even negative for higher values of *Experience*. In other words, as *Experience* increases, firms tend to imitate the disclosure practices of other organizations less.

Models 4–5 test whether the influence of the disclosure practices of national newspapers on disclosure behavior of local newspaper i is contingent on its experience (*Experience*). A likelihood ratio test indicates that the quadratic term added in Model 4 does not increase the fit of the model with respect to Model 2 ($\chi^2(1) = 1.97, p > 0.16$). Hence, we test our hypotheses in models assuming a linear relation effect of *Experts* on the dependent variable. Model 5 indicates that more experienced firms are less likely to replicate the actions of national newspapers ($p < 0.001$), supporting H1aa. In summary, these results indicate that *Experience* moderates Local newspaper i 's incentives to

imitate the disclosure behavior of other local newspapers and national newspapers. Hence, we find support for H1aa and H1bb.

Table 4 shows a set of models testing whether competition in the product market (*PMC*) and firm experience (*Experience*) moderate the influence of other national newspapers' past disclosure behavior on the disclosure behavior of national newspaper i . The first column shows that the VIF of the main variables of the models is acceptable. Model 1 shows that neither *PMC* nor *Experience* have a significant influence on national newspaper i 's disclosure decisions ($p > 0.10$).

Models 2 and 3 indicate that, ceteris paribus, there is neither a linear nor a non-linear statistically significant relationship between the disclosure behavior of other national newspapers (*Rivals*) on national newspaper i 's disclosure decisions. Moreover, a likelihood ratio test indicates that the quadratic term added in Model 3 does not increase the fit of the model with respect to Model 2 ($\chi^2(1) = 0, p > 0.99$). Hence, we test our hypotheses in models that assume a linear relationship between *Rivals* and the dependent variable of the models. Model 4 shows that, similar to the results in the case of *Similar Firms*, national newspaper i 's incentives to imitate the actions of other national newspapers tend to decrease as *Experience* increases ($p < 0.05$). This result provides support for H1bb. Similarly, Model 5 indicates that *PMC* exerts a positive and significant moderating effect on the influence of *Rivals* on national newspaper i 's disclosure practices ($p < 0.01$), indicating that national newspaper i 's incentives to imitate the actions of its peers are higher in environments in which product market competition (*PMC*) is higher. This provides support for H2. Finally, Model 6 indicates that

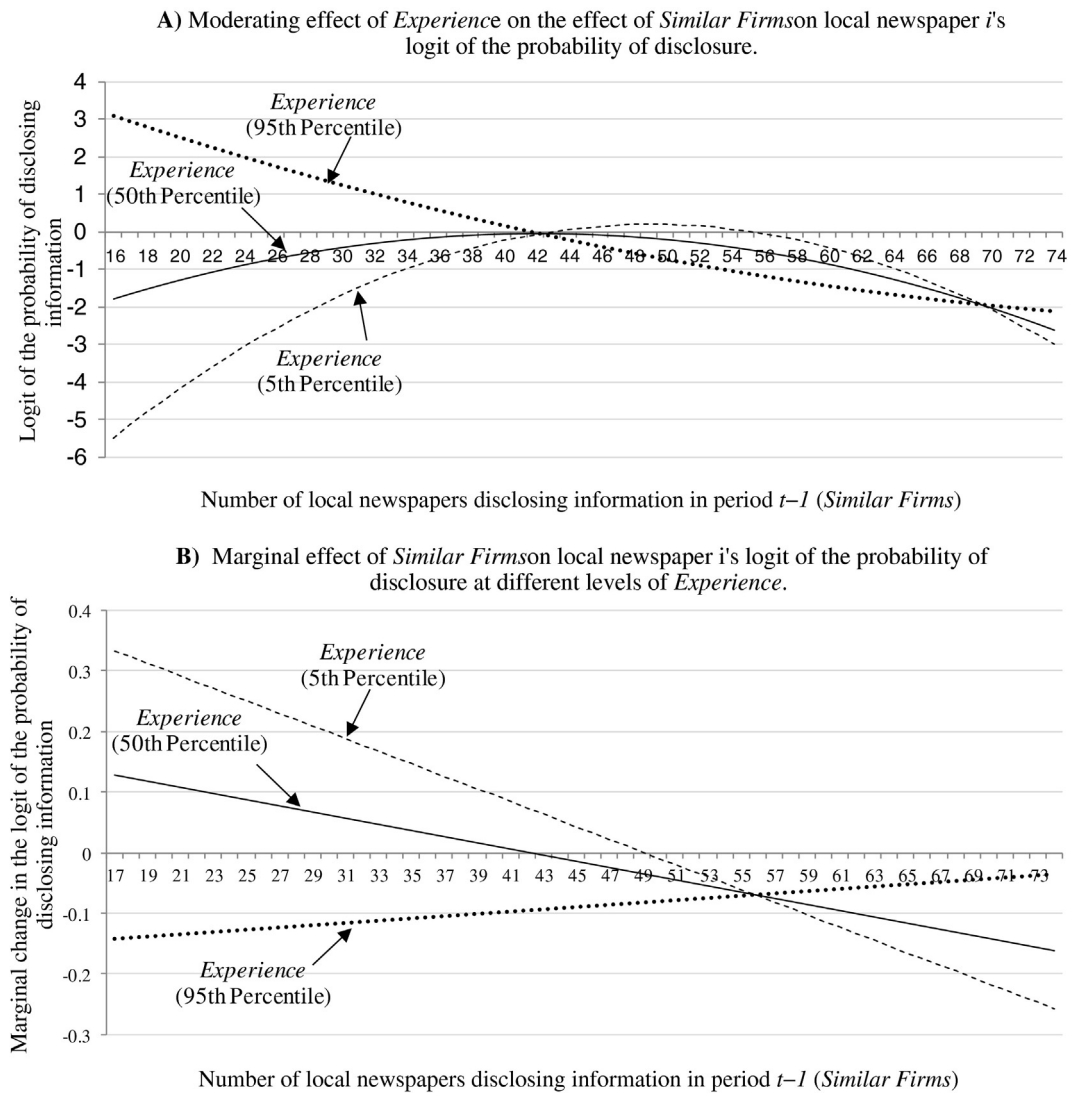


Fig. 1. Non-linear imitation pattern and firm experience. Panel A illustrates the moderating effect of the firm's experience on the relationship between the logit of the probability of disclosing information and the number of local newspapers disclosing information in period $t - 1$. Panel B illustrates the moderating effect of the firm's experience on the relationship between the marginal change in the logit of the probability of disclosing information and the number of local newspapers disclosing information in period $t - 1$.

both *Experience* and *PMC* are likely to act simultaneously to moderate a firm's incentives to imitate the disclosure practices of its peers.

6. Conclusions and discussion

This study proposes that firm experience and the level of competition in the product market moderate an individual firm's incentives to imitate voluntary disclosure practices of other organizations. To test the hypotheses, this study uses the newspaper industry in Spain from 1966 to 1993 as an empirical setting and focuses on the analysis of individual firms' decisions of whether to disclose audited information about their daily circulation figures (i.e., number of newspapers sold).

Overall, the empirical evidence shows that both firm experience and the level of market competition are likely to drive an individual firm's incentives to imitate the voluntary disclosure practices of other organizations. The results indicate that firm experience moderates the imitation of voluntary disclosure practices regardless of the type of imitation pattern (i.e., linear or non-linear). Previous research on the imitation of voluntary disclosure actions indicates that an inverted U-shaped relationship between the actions of other organizations and an individual firm's probability of disclosure can be explained by the accumulation of public knowledge in the market (e.g., Nikolaeva & Bicho,

2011). However, the findings suggest that a firm's incentives to imitate depend not only on this type of common or public knowledge but also on the experience of firms at the individual level. In other words, a firm's incentives to imitate the actions of other organizations for informational reasons might decrease at a certain point; however, this point and the rate of decrease are not the same for all firms, as they depend on each firm's experience. Similarly, the results show that the level of market competition moderates (i.e., increases) a firm's incentives to imitate the voluntary disclosure practices of other organizations. Moreover, empirical evidence indicates that, as suggested by prior work on the imitation of other business practices, firm experience and the level of competition are not mutually exclusive but complementary.

This work has the following limitations. It does not explore or control for imitation driven by normative and coercive forces (DiMaggio & Powell, 1983). This flaw, however, is common in empirical research because controlling for all types of isomorphism is difficult (Lieberman & Asaba, 2006). Second, due to data limitations impeding the calculation of a more concrete and robust measure of firm performance, this study makes no statements about the potential moderating effect of firm performance on a firm's incentives to imitate or about the consequences of imitation in terms of economic benefits. These interesting issues remain for future research.

Table 4
Pooled logit model with firm-clustered errors (national newspapers).

Variables	VIF	1	2	3	4	5	6
Rivals	2.15		−0.122 (−1.042)	−0.125 (−0.374)	−16.350*** (−3.341)	0.514** (2.517)	−20.198*** (−4.564)
Rivals ²	–			0.000 (0.011)			
Rivals × PMC	–				19.540*** (3.314)		25.066*** (4.681)
Rivals × Experience	–					−1.334*** (−3.850)	−1.606*** (−4.014)
PMC	4.66	−11.613 (−1.232)	−10.508 (−1.060)	−10.575 (−0.875)	−136.940*** (−3.584)	6.458 (0.535)	−158.645*** (−4.236)
Experience	0.73	0.120 (0.163)	−0.582 (−0.698)	−0.582 (−0.714)	−0.560 (−0.710)	7.856*** (3.484)	9.672*** (3.933)
Inertia	1.64	4.461*** (10.136)	4.470*** (8.951)	4.470*** (8.993)	4.201*** (9.185)	4.656*** (7.433)	4.393*** (7.622)
RelPer	1.5	−2.947*** (−5.053)	−2.964*** (−5.748)	−2.965*** (−5.931)	−3.233*** (−5.887)	−2.973*** (−6.541)	−3.343*** (−6.677)
LnGNP	8.29	3.926*** (3.942)	4.844*** (3.021)	4.851** (2.457)	7.868*** (3.857)	3.879*** (2.678)	7.720*** (3.545)
Subsidy	6.83	−1.645* (−1.844)	−1.739* (−1.954)	−1.739* (−1.953)	−2.109** (−2.458)	−1.878** (−2.141)	−2.416*** (−2.809)
Dictatorship	18.31	2.024* (1.699)	2.714* (1.953)	2.719* (1.824)	5.197*** (2.756)	1.913 (1.632)	5.040*** (2.653)
Transition	11.32	0.198 (0.218)	0.507 (0.532)	0.508 (0.523)	1.172 (0.989)	−0.505 (−0.497)	0.390 (0.329)
Democracy	2.71	0.838 (1.331)	1.149 (1.578)	1.150 (1.556)	2.294** (2.436)	0.783 (1.048)	2.279** (2.205)
Constant	–	−32.210*** (−2.759)	−41.952** (−2.080)	−41.972** (−2.017)	29.587 (1.203)	−48.978** (−2.465)	44.840*** (2.746)
Observations		866	851	851	851	851	851
Pseudo-R ²		0.694	0.682	0.682	0.691	0.694	0.709
p		0	0	0	0	0	0
chi ²		274.1	307.5	350.0	242.0	425.1	316.2
Degrees of freedom		9	10	11	11	11	12
Log-likelihood		−101.0	−94.71	−94.71	−92.02	−91.10	−86.71
Number of firms		15	15	15	15	15	15

This table shows the results of a pooled logit model with firm-clustered errors testing the effect of the intensity of competition (*PMC*) and firm experience (*Experience*) on national newspapers' information-driven and rivalry-driven imitation. The estimators of each variable are reported in the top row, and the χ^2 test values appear in brackets below each coefficient. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Estimated models have the expression $P(\text{Disclosure} = 1 | x_i) = \exp(x_i\beta) / (1 + \exp(x_i\beta))$, where $P(\text{Disclosure} = 1 | x_i)$ is the probability of voluntary disclosure for firm i at time t , β is the vector of estimated coefficients, and X is the vector of exogenous variables included in the model.

Data availability

The data are available from the authors upon request.

Acknowledgments

We thank the participants and referees of the 2013 Raymond Konopka Annual Workshop in Management Accounting and Accounting History, Internal Seminar Series of Universidad Carlos III de Madrid, the 2013 European Accounting Association Annual Conference and the 2013 American Accounting Association Annual Conference for their helpful comments. We also acknowledge the financial support of the Spanish Ministry of Economy and Competition (2014/00456/001 and ECO2013-45864-P), the Spanish Ministry of Science and Technology (ECO2010-22105-C03-03) and the Community of Madrid (2008-0059-003 and S2015/HUM-3417).

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