

# Models of innovative activity in family business

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**Abstract:** **Background:** A business can conduct innovative activities on its own in a so-called closed model or in cooperation with other external entities, i.e. in an open model.

**Research objectives:** I aimed to identify models of innovative activity used by family businesses operating in the Polish market.

**Research design and methods:** For research purposes, I developed brief descriptions of the individual innovation creation models, i.e.: the closed model; the outside-in open model; the inside-out open model; and the coupled open model. I investigated 121 randomly selected companies that were among the winners of the fourth edition of the Most Valuable Polish Family Companies Ranking and that introduced at least one innovation in the years 2019–2021.

**Results:** The family businesses surveyed preferred to create innovations in a closed model (54.5%). The most common direction of opening the innovation process was outside-in.

**Conclusions:** The conducted research on the Polish market confirms the thesis put forward by other researchers regarding the low propensity of family businesses to cooperate with external entities in the innovation process; hence, their preference for a closed model of innovation creation.

**Keywords:** family business; innovative activity; open innovation model; closed innovation model  
**JEL Codes:** O30, O31, O32

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## 1. Introduction

My research interests include innovation management in business entities. Thus far, I have focused my research on the characteristics of innovative activity in non-family businesses, with an emphasis on innovation creation in the open model (Sopińska & Mierzejewska, 2017; Sopińska & Dziurski, 2018). This time, I focused on the management of innovation in the family business because in many aspects, the innovation processes in family entities show differences from innovation processes implemented in non-family businesses (Broeckeaert, Andries & Debackere, 2016; Wściubiak, 2017; Wściubiak, 2018; De Massis *et al.*, 2015; Chrisman *et al.*, 2015; De Massis, Di Minin, & Frattini, 2015; Duran, 2016; Surdej, 2016).

The essence of a family business is described in the literature through the prism of three criteria: the ownership criterion; the ownership and management criterion; and the succession criterion, *i.e.* the intergenerational transfer of power and ownership. Depending on the fulfilment level of the above criteria, we can distinguish between broad, intermediate, and narrow definitions of the family business (Shanker & Astrachan, 1996, pp. 107–123). The broadest defi-

nitions of a family business assume a less than precise definition of the relationship between business and family in the form of actual strategic control and the intention to keep family control over the entity. Indirect definitions assume that the founder or their successors run the business under their ownership control. Narrow definitions require generational continuity and the participation of more than one family member in the company management. Therefore, there are many parallel definitions of the family business attempting to explain its socio-economic characteristics (e.g. Ward, 1997, p. 252; Cadbury, 2000, p. 5; Donnelley, 2004, p. 430; Sulkowski, 2004, p. 99; Chua, Chrisman, & Sharma, 1999, pp. 19–39).

I adopted the following definition of a family business/company for research purposes. A family business/company is an economic entity of any size and legal form in which: at least two family members work together in the business; at least one family member has a significant influence on management; and family members hold a significant or majority stake in the business. The proposed definition is very similar to that proposed by the Polish Agency for Enterprise Development (PARP) (Kowalewska, 2009, p. 30). However, PARP limits the category of family businesses to the micro, small, and medium-sized business sectors only. My research lacks such a limitation.

I aimed to identify models of innovative activity used by family businesses operating in the Polish market. I based my conclusions on the results of a broader research project conducted in 2022 on the characteristics of innovative activity in family business (Sopińska & Dziurski, 2022). One of the research tasks of this project was to identify how family businesses conduct innovative activity in the Polish market. I preceded the presentation of the empirical research results with a brief description of how family businesses conduct innovative activity based on the existing literature on the subject.

## 2. Literature review

By definition, family entities can conduct innovative activities both independently and in cooperation with other external entities. However, the literature is far more likely to indicate that family entities conduct innovative activities in a closed model, as they have a relatively lower propensity to engage in collaborative innovation with external entities compared to non-family entities. According to some researchers (Pittino & Visintin, 2011, pp. 57–68; Nieto, Santamaria & Fernandez, 2015, pp. 382–399), the reason for this is the specific social capital of family entities, oriented towards the creation of strong internal relationships (within the family and employees), while distrusting outsiders.

Thus, the reluctance to collaborate on innovation with external partners may stem from the natural desire of family entities to preserve their independence and decision-making autonomy. The fear of losing control throughout innovation processes may significantly complicate relationships with external partners and lead many family entities to pursue innovation activities in a closed model (De Massis, Frattini & Lichtenthaler, 2013, pp. 10–31). M. Yu *et al.* (2013, pp. 32–50) go as far as recommending family entities to be wary of excessive fragmentation of innovation decision-making processes, leaving innovation-related issues to the sole discretion of the top management. A serious obstacle to the development of inter-organisational relationships by family entities may also be their general reluctance to disclose information about their business (Wściubiak, 2018, pp. 233–248.). Frequently, key knowledge resources, which are the source of an organisation's success, remain a closely guarded family secret passed on from generation to generation (Safin, 2007, pp. 288–289).

The propensity to establish inter-organisational relationships may evolve with the life cycle of the family entity. Scholars find the lowest propensity to engage in inter-organisational collaboration with external partners in companies managed by the founding generation (Letonja & Duh, 2016, pp. 213–224). Moreover, the propensity to engage in inter-organisational cooperation is lower for entities undergoing succession, which is probably because the intergenerational transfer of power and ownership is an extremely absorbing process, which significantly limits the entity's ability to engage in external relationships (Wściubiak, 2017, pp. 375–387).

Moreover, the literature emphasises that innovation processes conducted by family entities are characterised, compared to non-family ones, by less openness expressed in terms of the number of external sources of innovation used (Classen *et al.*, 2012, pp. 191–215; Alberti *et al.*, 2014, pp. 29–48; Classen *et al.*, 2014, pp. 595–609; Wściubiak, 2017, pp. 375–387). Family entities may face serious difficulties in managing an extensive network of external relationships, which may even result in higher costs and longer lead times for innovation ventures (Alberti *et al.*, 2014, pp. 29–48). Due to the varying nature of collaboration with particular groups of partners, the absorptive capacity of most family entities may also be insufficiently developed to effectively reap the benefits of maintaining a highly diversified network of relationships with external entities (Classen *et al.*, 2012, pp. 191–215).

Family entities have a clear preference for cooperation through vertical relationships (*i.e.* with suppliers and customers), followed by research and development institutions, but not with competitors. This is because they perceive establishing relationships with customers, suppliers or R&D institutions as safer than entering alliances with competitors (De Massis, Frattini, & Lichtenthaler, 2013, pp. 10–31). Noteworthy, cooperation between family entities and outside entities frequently takes the form of links of an informal nature, which are based on personal acquaintance (often even friendship) of the company owner with the owners (or managers) of other companies. This results in a better quality of the relationships established by the family entities, which may consequently lead to more fruitful cooperation (Harms, Memili, & Steeger, 2015, pp. 72–83).

Most researchers believe that due to their characteristics, family entities usually prefer to conduct innovation activities in a closed model. Their willingness to cooperate with outside entities in the innovation process is limited and rather oriented towards a one-way knowledge flow, *i.e.* to family entities. Can we observe the above regularities in regard to family businesses operating in the Polish market? My research answers this question.

### 3. Material and methods

The presented results are a fragment of broader research conducted in 2022 by my team. They concern innovative activity in family businesses in the Polish market. One of the research tasks was to identify ways of conducting innovative activity by family businesses in the Polish market. Within the framework of the above research task, we sought an answer to two questions:

- Under which model do family businesses conduct innovative activities (open or closed model)?
- Which direction of innovative activity opening do companies creating innovations in an open model prefer?

As a basis for the identification of models for conducting innovation activities in family businesses, I adopted the proposal put forward by H.W. Chesbrough (2003) to divide innova-

tion creation models. Chesbrough was the first scholar to contrast the open innovation process with the closed innovation creation model. According to the concept of open innovation, companies not only can, but should, use both external and internal ideas in their innovation processes and internal and external paths to market. Open innovation involves a purposeful exchange of knowledge that speeds up the innovation creation process. The core of this idea is companies collaborating with various partners, a necessity inherent in the very definition of open innovation. Indeed, cooperation in open innovation manifests itself in the joint action of partners to create innovations and the mutual sharing of their resources, especially knowledge (Laursen & Salter, 2006, p. 27, pp. 131–150).

The opening of innovation processes in a company can follow three patterns. The basis for their distinction is the direction of innovation flow, which can take the form of: outside-in, inside-out, or coupled (Chesbrough, 2003; Chesbrough & Garman, 2010; Gassmann & Enkel, 2005). For research purposes, I developed the following brief descriptions of the individual innovation creation models:

- Closed model – the business creates innovations on its own, which it then implements within the company,
- Outside-in open model – the business creates innovations in collaboration with external partners that are implemented in the company,
- Inside-out open model – the business creates innovations on its own, but they are implemented outside the company,
- Coupled open model – the business creates innovations in collaboration with external partners that are implemented outside the company.

The subjects of the research were family businesses operating in the Polish market, which were among the winners of the fourth edition of the Most Valuable Polish Family Companies Ranking. The ranking was developed in September 2021 by Dun & Bradstreet in cooperation with the editors of *Forbes*, separately for two categories of entities: entities with revenues below PLN 100 million and entities with revenues above PLN 100 million (*Forbes*, 2021).

The sampling was random, and the requirement for a company to enter the sample was that the company had implemented any innovation between 2019 and 2021 (preselection question). The response rate was 61%. The maximum standard error of estimate for a sample of  $N = 121$ , at a confidence level of  $\alpha = 0.05$ , was 2%. The INDICATOR Marketing Research Centre conducted the research in June 2022 using the computer-assisted telephone interviewing (CATI) method. We conducted 121 interviews with business executives divided into (1) family members and (2) non-family member employees. All respondents had knowledge of innovation activities. Family members were by far the majority of respondents (they accounted for 90.1% of all interviewees – 109 people). Non-family employees accounted for only 9.9% of respondents (12 people).

Each respondent represented a separate family business operating in Poland; hence, we analysed 121 family businesses. The surveyed entities were mostly older businesses, *i.e.* those established before 2000 (69.4%); those that have been family businesses for two generations (74.4%); large businesses in terms of the number of employees (67.8%); those operating in production (69.4%) rather than in services and trade; with an average (58.7%) correspondence between the family's education and the company's business profile, where only some family members were educated in line with the company's business profile. The entities surveyed equally represented businesses with annual revenues of up to PLN 100 million and those with revenues of more than PLN 100 million per year.

## 4. Results and discussion

Based on the results, we may conclude that the family businesses surveyed preferred to create innovations in a closed model (Table 1). In total, 66 respondents (54.5%) indicated this innovation method. A total of 55 respondents (45.5%) indicated the creation of innovations in the open model (regardless of the direction of opening). The most common (74.5% of the respondents indicating an open model of innovation creation) direction of opening the innovation process was the outside-in direction. The family businesses surveyed were oriented towards cooperation with outside entities at the innovation creation stage, which they then independently implemented in their company. Eight respondents (6.6%) indicated the inside-out opening of the innovation process and only six respondents (5%) – the coupled open model.

**Table 1. Model for conducting innovative activities**

<i>What model of innovative activity is implemented in the company?</i> Possible answers	Number of indications	Percentage share
The company creates innovations on its own and then implements them within the company – <i>closed model</i>	66	54.5
The company creates innovations in cooperation with external partners and then implements them within the company – <i>outside-in open model</i>	41	33.9
The company creates innovations on its own but implements them outside the company – <i>inside-out open model</i>	8	6.6
The company creates innovations in cooperation with external partners and then implements them outside the company – <i>coupled open model</i>	6	5.0
Total	121	100

Note: N = 121.

Source: own elaboration.

A more detailed analysis of the response distribution according to selected characteristics allowed for the formulation of more detailed characteristics of entities indicating a particular model of conducting innovative activity. We considered the following characteristics: the size of the entity measured by the number of employees (small, medium, large); the size of the entity measured by the size of annual revenues (up to PLN 100 million per year and over PLN 100 million per year); the activity sector (production, trade, services); the age of the business (established before or after 2000). The analysis results are as follows:

- Creating innovations in a closed model was the most frequent answer for respondents coming from older (established before 31 December 1999) and medium-sized (in terms of the number of employees) manufacturing businesses with annual revenues of less than PLN 100 million.
- The outside-in open innovation creation model was the most frequent answer for respondents coming from older (established before 31 December 1999) and large service companies, both in terms of the number of employees and revenues (above PLN 100 million per year).
- The inside-out open innovation creation model was the most frequent answer for respondents from older (established before 31 December 1999) and medium-sized (in terms of

number of employees) trading companies with annual revenues of less than PLN 100 million.

- The coupled open model of innovation creation was the most frequent answer for respondents from small (in terms of number of employees) service providers with annual revenues of less than PLN 100 million, regardless of the company age.

In turn, an analysis of the response distributions by type of respondent (family member, non-family member) found that:

The closed model of innovative activity was more often indicated by non-family respondents;

The open model of innovative activity was more often indicated by respondents who were family members.

Moreover, the results allow us to assume that the branch of activity, to some extent, determines how businesses conduct innovative activity. In the case of manufacturing activities, the respondents chose the closed model more often than the open model. Family businesses with service and trading activities were the ones to most frequently apply the open model.

## 5. Conclusions

My research indicates that family businesses are more likely to conduct innovative activities in a closed model than in an open one, which may point to a low propensity for family entities to cooperate in the innovation process. Winnicka-Popczyk (2018, pp. 159–176) reached similar conclusions when conducting research on a sample of 115 family entities in Poland that were included in the Forbes Diamonds 2016 list. Her research clearly showed that the main source of origin of innovations implemented by family entities is their independent creation within their R&D unit (50.4%). Only 33.0% of respondents indicated the implementation of innovations in cooperation with external partners and 30.0% – the purchase of ready-made projects or outsourcing to other entities, such as universities or R&D centres.

Among the studied family entities, the most common direction of opening innovation processes was the outside-in one, which meant cooperation with external entities only at the stage of innovation creation, which was then independently implemented. Moreover, other researchers indicated the outside-in model of innovative activity by family businesses in the Polish market (Klimek & Żelazko, 2018, pp. 61–62). Using the case study method, Klimek and Żelazko analysed five family entities operating in the cosmetics industry. Most of them opted for the outside-in model of open innovation and only one for the coupled model. Although the family entities used diverse knowledge sources in the innovation process, the intensity of cooperation with external partners was considerably low.

Due to the methodological limitations of the presented research (quantitative research, small research sample, and the use of the CATI method), I will continue them in the future. I intend to conduct in-depth qualitative research on the manner of conducting innovative activity by family businesses operating in Poland, which will allow me to capture certain internal mechanisms and dependencies.

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#### Conflict of Interest

The author declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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