

Sustained Growth and Competitiveness of SME's Within the Context of Intellectual Property

Nikola Salajová, Lucia Kohnová and Dea Koplíku

Faculty of Management, Comenius University, Bratislava, Slovakia

salajova14@uniba.sk

lucia.kohnova@fm.uniba.sk

deakopliku@gmail.com

Abstract: Due to the exponential pace of technological innovation, intellectual property is an important support for SMEs in innovation, growth and competitiveness of work. Licensing and cooperation open ways for SMEs to access complementary resources, expand their market reach, and accelerate product development. Our research consists of an analysis of 43 Slovak companies in the field of intellectual property, its licensing and the impact of IP partnerships on competitiveness and business growth. The aim was to point out the possible causes of low cooperation of companies in the field of intellectual property. The survey results provide information on opportunities to enter new markets using partnerships. These partnerships can mean a competitive advantage for SMEs, which can be achieved mainly by reducing the barriers that SMEs face when engaging in licensing agreements and cooperation in the field of intellectual property. The results lead to recommendations for successfully finding and maintaining partnerships.

Keywords: Intellectual Property, SME, Collaboration, Competitiveness, Growth, Challenges

1. Introduction

In an era defined by rapid technological advancements and knowledge-driven economies, intellectual property stands as a linchpin in fostering innovation, economic growth, and competitiveness. A study conducted in 2021 by the European Union Intellectual Property Office (EUIPO) (2019), alongside European Patent Office (EPO) has estimated that firms that own IPRs have a 68% higher revenue per employee than those without. Alongside a contribution of 57% of EU's GDP, firms SMEs that have filed at least one IP right are 21% more likely to experience a growth period afterwards and are 10% more likely to become an HGF than firms without IP rights applications. SMEs that file for IP rights at European level have an even greater likelihood (17%) of becoming a high-growth firms (HGFs). The research also reveals that the chances of an SME becoming an HGF increase by 33% if they use "bundles" of trademarks, patents, and designs instead of one single IP right category (Wajsman et al., 2022).

Embracing Intellectual Property Rights significantly boosts SMEs' growth prospects. Statistics reveal that SMEs utilizing IPRs are 23% more likely to achieve growth in the following three years. Moreover, their chances of evolving into high-growth firms increase by 10% (Masucci, 2021).

It is also argued in "Against Intellectual Monopoly" by Michele Boldrin and David K. Levine (2008) that the current intellectual property system stifles innovation, limits creativity, and hampers economic growth. The case is made by Arora et al. (2001), Jell, Henkel and Hoisl (2013), Bessen and Hunt (2007), Qian and Scherer (2007) have had a different sentiment based on research that it has shown the opposing perspective.

This article aims to explore the relationship between sustained growth and competitiveness, of small firms aiming towards high growth, in the context of intellectual property. In an increasingly dynamic global economy, where innovation is the currency of progress, understanding the nuances of intellectual property is not just advisable; it is indispensable for those aiming to thrive.

2. Theoretical Framework

2.1 IPRs and Innovation

"IP systems aim to strike a balance, simultaneously providing incentives for innovation and ensuring that the fruits of innovation are widely available. But achieving this balance is tricky" (Jaffe & Lerner, 2013). The paradox of patents as a form of IPRs, where they serve as both catalysts and barriers to innovation, proves challenging. The challenges faced by small inventors and the strategic use of IPRs by large corporations are particularly addressed - according to Thiel and Peters (2012), these inventors may benefit from support mechanisms and simplified IP protection processes to ensure their innovations are adequately preserved and can sustain growth.

As emphasized by Porter's Five Forces framework (1989), assessing a firm's growth and competitiveness requires a comprehensive evaluation of both internal and external factors. Internally, the firm must measure sustained growth through key performance indicators (KPIs) such as revenue growth, profit margin, and market share (Schilling, 2020). These metrics reflect the firm's ability to expand its market presence, optimize profitability, and outperform rivals. Efficient cash flow management, as noted by Segarra-Blasco (2009), underpins the firm's capacity to fund growth initiatives.

Competitiveness, on the other hand, hinges on both internal and external dimensions. Internally, a firm's market position, customer satisfaction, and quality metrics play pivotal roles (Porter, 1996). Achieving a competitive edge requires constant innovation and adaptation, reflected in innovation metrics and time-to-market (Farida & Setiawan, 2022). Cost efficiency is essential for competitiveness, along with robust supplier and partner relationships (Dyer et al., 2001). Expanding globally, as suggested by Rugman & Verbeke (2004), and establishing a strong digital presence further enhance a firm's competitive stance. Regulatory compliance and environmental and social responsibility, as outlined by Zeng et al. (2020), are increasingly vital in today's business landscape. Finally, a satisfied and talented workforce, as per Cascio and Boudreau (2016), contributes significantly to a firm's overall competitiveness. By meticulously monitoring these variables and metrics, firms can make data-driven decisions to foster growth and bolster competitiveness.

A firm's ability to leverage intellectual property rights is a central component of its competitive strategy. IPRs, including patents, trademarks, and copyrights, not only safeguard a firm's innovative ideas and products but also contribute significantly to its competitiveness (WIPO, 2009). When measuring sustained growth, revenue growth, profit margins, and market share are pivotal indicators as per Neely (2002). For firms with a robust IPR portfolio, these metrics can be positively influenced. Through patent protection, firms can secure exclusive rights to their innovations, allowing them to charge premium prices, thus potentially boosting profit margins (Cockburn & Wagner, 2007). Patents also act as formidable barriers to entry for competitors, strengthening a firm's market share position (Cohen et al., 2000).

Moreover, IPRs foster innovation, a cornerstone of sustained growth as per Tidd and Bessant (2020). Firms with IP protection are more incentivized to invest in research and development (Hall & Ziedonis, 2001). This increased R&D expenditure can result in a higher rate of new product introductions, which is crucial for remaining competitive (Grant, 2022).

In terms of competitiveness, IPRs play a pivotal role in securing a market position (Porter, 1996). Strong trademark protection ensures brand recognition and distinguishes a firm's products or services from those of competitors (Kotler et al., 2019). Additionally, a robust IP portfolio can facilitate global expansion, as firms can protect their innovations in multiple markets. In today's digital age, having intellectual property rights also extends to online visibility and digital presence, which impact competitiveness (Chaffey, 2006).

Ultimately, intellectual property rights are not only tools for safeguarding innovation but also instruments for enhancing a firm's competitiveness and driving sustained growth.

2.2 Growth and Competitiveness

As emphasized by the Resource-Based View (RBV) of the firm (Barney, 1991), sustained growth and competitiveness are influenced by a combination of firm-specific resources and capabilities. While IPRs can indeed play a vital role, they may not be the sole determinant. The RBV suggests that firms with diverse resources, including human capital, physical assets, and unique processes, can achieve sustained growth (Wernerfelt, 1984). Intellectual property is just one component of a broader resource portfolio. Several other aspects include:

- **Market Demand:** A firm's ability to identify and address changing market demand is crucial for growth (Day, 1994).
- **Operational Efficiency:** Operational excellence, as highlighted by the Operational Capability View (Ahmed et al., 2014), can drive competitiveness.
- **Innovation Ecosystem:** Collaborative innovation networks and partnerships (Powell et al., 1996) can enhance competitiveness.
- **Regulatory Compliance:** Strict adherence to industry regulations and standards is vital for competitiveness (Hitt et al., 2009).
- **Global Strategy:** Competing in global markets often requires internationalization strategies (Rugman & Verbeke, 1988).

In assessing the impact of intellectual property rights on sustained growth and competitiveness for firms, it's crucial to recognize that while IPRs play a significant role, they are not the sole determinants. According to the Resource-Based View (RBV) of the firm sustained growth relies on a diverse resource portfolio encompassing human capital, physical assets, and unique processes (Salazar & Armando, 2017), where IPRs represent just one component. Moreover, a firm's ability to adapt to evolving market demand, engage in operational excellence, foster innovation through networks, ensure regulatory compliance, and execute effective global strategies all contribute to competitiveness. Hence, a holistic approach is called for.

2.3 Collaboration of IP

SMEs that recognize the value of IP can leverage it to establish mutually beneficial collaborations with larger firms, thereby gaining access to resources, expertise, and distribution channels that may otherwise be beyond their reach (Laursen & Salter, 2006). Through licensing or selling their intellectual property, SMEs can effectively enter into partnerships with industry giants, allowing them to scale their operations and compete more effectively in the marketplace (Chesbrough et al., 2006).

Collaboration of IP can be transformative for SMEs striving to achieve sustained growth and remain competitive (Breschi & Malerba, 2005). Through licensing agreements for instance, SMEs strategically share their intellectual property with larger corporations or complementary partners, enabling them to tap into new revenue streams while expanding their market reach (Damanpour & Gopalakrishnan, 2001). This collaborative approach yields financial benefits and also allows SMEs to access valuable resources, including technological expertise and distribution networks, which are instrumental in outpacing competitors and sustaining long-term growth. The RBV concept, which primarily emphasizes internal resources, might not fully appreciate the power of these dynamic collaborations, which serve as a critical driver of sustained growth and competitiveness (Costello, 2019).

Licensing of IP stands as a strategic approach that can significantly impact the competitiveness of SMEs (Shapiro, 2000). Through collaboration agreements, SMEs grant permission for the use, distribution, or sale of their innovations, often in exchange for royalties or fees. This approach can enhance competitiveness in several ways:

- First, collaboration agreements allow SMEs to expand their reach and market presence rapidly. By partnering with larger companies or those with established distribution networks, SMEs can leverage the partner's resources to tap into new customer segments and geographic markets that might have been challenging to access independently (Denicolo & Alberto Franzoni, 2004).
- Second, collaboration agreements can lead to specialization and the division of labor. SMEs might focus on their core competencies, such as innovation and product development, while licensing their IP to partners who excel in manufacturing or distribution (Shapiro, 2000).
- Third, collaboration agreements can facilitate risk-sharing (Fama & Jensen, 2021). SMEs often face resource constraints and the inherent risks associated with bringing new products or technologies to market. Licensing IP to partners can help spread the financial and operational risks, allowing SMEs to pursue growth opportunities without shouldering the entire burden.

2.4 Leveraging IP for High-Growth Transition

IPRs serve as a dynamic pathway for small and medium-sized enterprises to transition into high-growth firms by strategically combining various forms of collaboration (Mazzoleni, 2006). In this strategic approach, SMEs embrace a dual strategy that empowers them to leverage their IP for sustainable growth.

Through collaborative efforts, SMEs pool their resources, share expertise, and co-innovate with partners (Fernald et al., 2014). This collaborative approach drives the development of new and innovative products or services. These innovations, protected by IP rights, not only create unique market offerings but also position SMEs favorably for sustainable growth.

Simultaneously, agreements open doors to broader market access and specialization (Bessen & Meurer, 2009). By licensing their IP, SMEs can rapidly expand their presence in new territories and sectors, capitalizing on the established distribution networks and expertise of their licensing partners. The generated revenue and efficiency gains from specialization can bolster competitiveness and provide financial resources for further investments in innovation (Davis et al., 2023).

Together, these strategies empower SMEs to leverage their intellectual property, fostering innovation, expanding market reach, and enhancing competitiveness. This approach, with collaboration driving innovation and licensing promoting market expansion, propels SMEs along the journey to becoming high-growth firms. Numerous successful cases across diverse industries exemplify the effectiveness of this combined approach in facilitating SMEs' transition into high-growth entities.

3. Methodological Approach

The research was focused on analyzing intellectual property in Small and Medium-sized Enterprises (SMEs). The goal was not to find out the current state of SMEs in Slovakia in relation to IP, but to point out the possible causes of low cooperation of companies in this area. The collection of qualitative data was achieved through a survey administered to a selected sample of SMEs in different sectors and different geographical locations. The sampling technique employed in this research is purposive sampling, whereby SMEs are purposefully selected based on specific criteria. The sample consisted of 43 Slovak SMEs, and the study was conducted in January to April 2023 through an electronic questionnaire. Respondents expressed their views on IP ownership, IP licensing, and the impact of IP partnerships on competitiveness and business growth. Respondents had the opportunity to provide recommendations and comments on barriers to IP collaboration. The research specifically targeted SMEs in Slovakia that exhibit a lower level of cooperation in the fields of innovation and IP protection, as indicated by the European Innovation Scoreboard in 2022.

In data analysis, we used correlation analysis with a significance level of $p = 0.01$. We followed Rimarčík's (2007) approach to the evaluation of qualitative data, where a correlation of 0.1–0.3 was determined as low, from 0.3–0.5 as moderate, and from 0.5 or higher as high.

The research results not only shed light on the current state of the surveyed SMEs but also highlight differences in the behavior of micro, small, and medium-sized companies. The correlation analysis revealed the significance of the relationship between IP licensing and its effects on the competitiveness and growth of SMEs.

4. Results of the Research

Out of the total sample of surveyed companies, 60.5% own intellectual property (IP) rights. Among these, the surveyed SMEs most commonly possess trademarks and patents. Companies most frequently license IP with the primary objectives of cost reduction and accessing new markets. Interestingly, revenue generation was the primary motivation for collaboration in only 27% of SMEs in our sample. Similarly, in the context of IP creation through collaboration, the ability to share resources and expertise and gain access to new markets had a significantly more substantial impact. Accessing new markets and revenue generation were significantly more common reasons for collaboration in micro and small businesses compared to medium-sized enterprises.

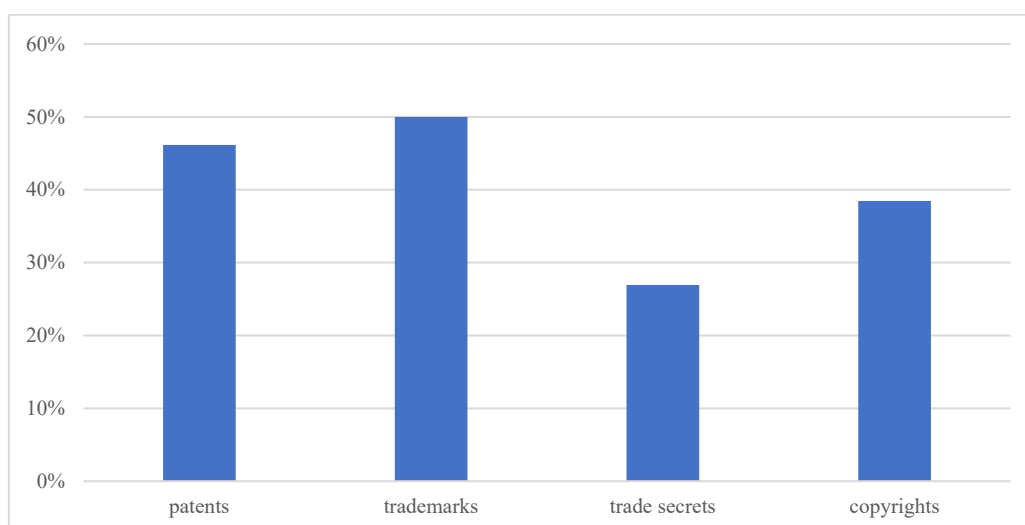


Figure 1: Type of IP owned by SMEs.

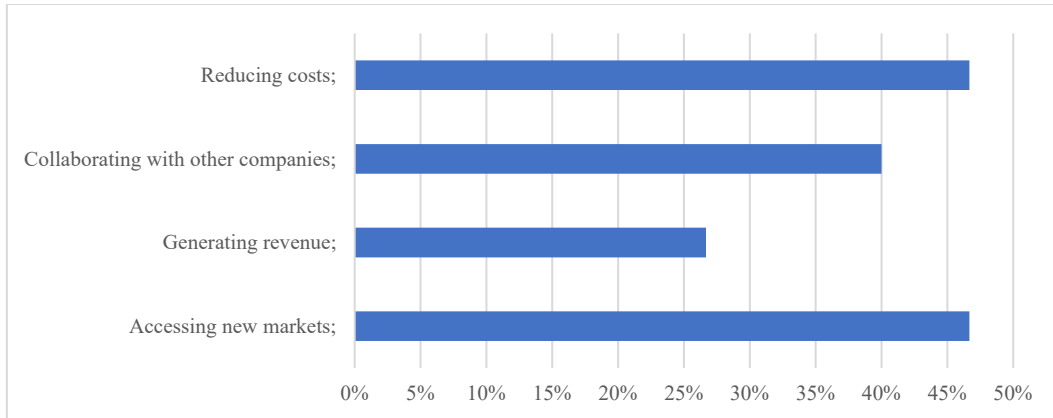


Figure 2: Reasons for licencing IP among SMEs.

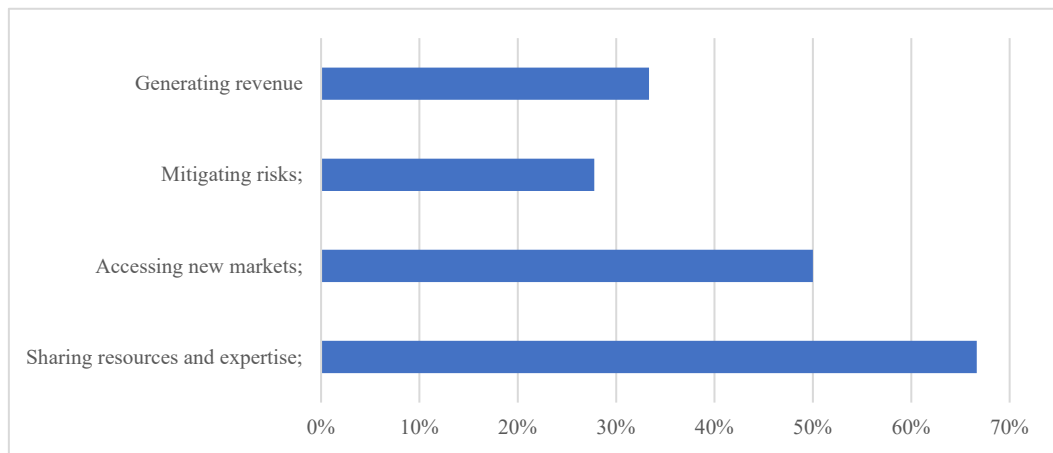


Figure 3: Resons for collaborating on IP among SMEs.

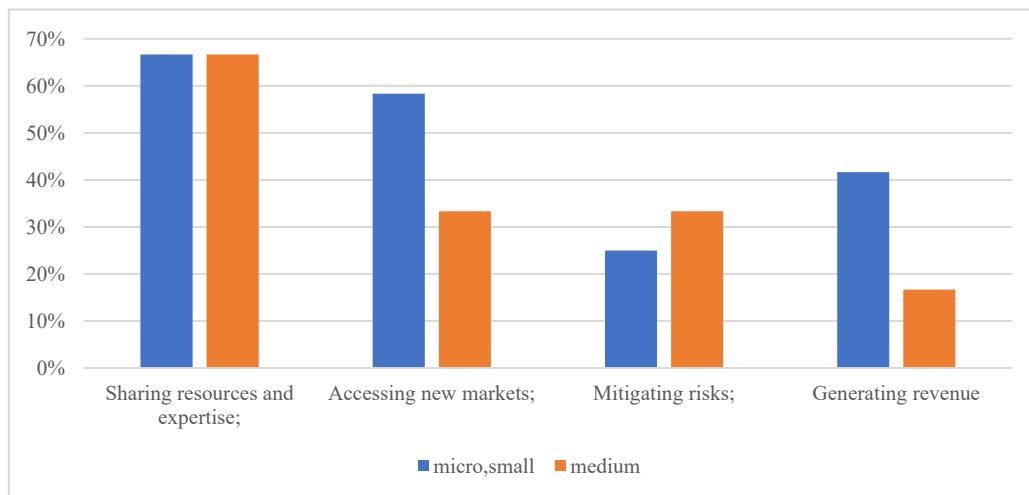


Figure 4: Comparison of reasons for collaborating on IP based on company size.

To facilitate collaboration among micro and small businesses, it is important within the research to analyze the challenges associated with collaboration. More than 50% of SMEs in our sample consider finding suitable collaborators to be a challenging aspect. Additionally, 44% identified protecting and sharing intellectual property (IP) as an issue, followed by 33% facing challenges in aligning business goals and objectives. The results indicate that terms and conditions or disputes themselves are not significant issues.

When comparing companies in the micro and small categories to medium-sized ones, notable differences are observed. For micro and small businesses, finding partners for collaboration is a more significant challenge

(67% compared to 33%). Conversely, aligning business goals is a more prominent issue for medium-sized companies (50% compared to 25%).

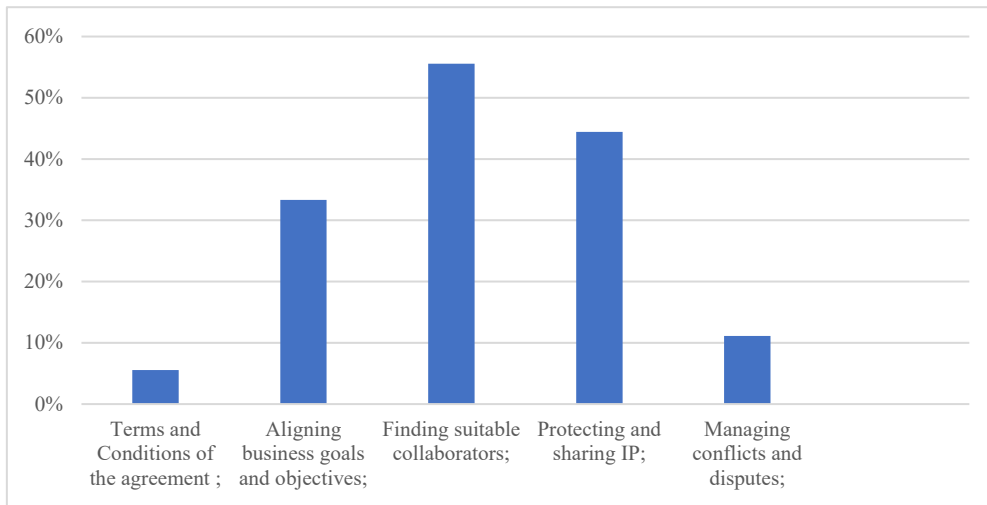


Figure 5: Main challenges faced in negotiating and executing IP collaboration agreement.

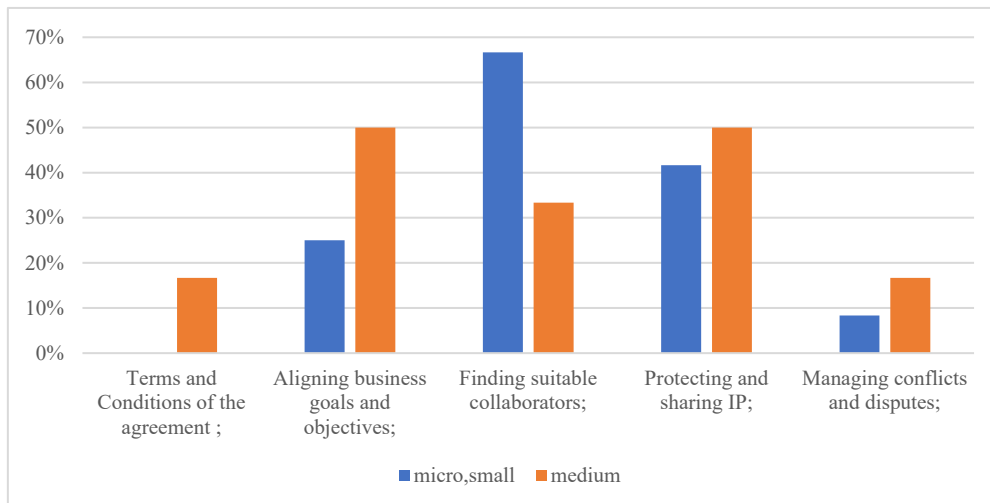


Figure 6: Comparison of perceived challenges based on company size.

The results reveal interesting disparities in the motivations and challenges of businesses within the SME category, depending on their size. Subsequently, we conducted a correlation analysis to examine the relationship between IP ownership, its licensing, and collaboration in the IP domain with the perception of business satisfaction and positioning. The results indicate a significant positive relationship between IP ownership among SMEs and the assessment of competitive advantage compared to the industry (correlation coefficient of 0.47; we consider this a strong relationship within the qualitative data). Likewise, a positive relationship is observed regarding IP licensing and the perception of a competitive advantage (0.43). Respondents highlight a positive experience with IP collaboration, where we also see a positive relationship with a correlation coefficient of 0.31.

Table 1: Correlation analysis

	Does your SME own any intellectual property (IP) rights?	Has your SME ever licensed any of its IP to another party?	Has your SME ever collaborated with another company to jointly develop or exploit IP?
Overall, how satisfied was your SME with the outcomes and benefits of the IP licensing and collaboration agreement?	0,10	0,08	0,31

	Does your SME own any intellectual property (IP) rights?	Has your SME ever licensed any of its IP to another party?	Has your SME ever collaborated with another company to jointly develop or exploit IP?
How would you rate the level of sustained growth your SME has experienced over the last year?	0,11	0,13	0,20
How would you rate the competitive advantage your SME holds compared to its industry competitors?	0,47	0,43	0,22

These results were further subjected to regression analysis, revealing a statistically significant positive correlation between IP licensing and competitive advantage in SMEs ($\beta = 2.32$, $p < 0.01$). This implies that SMEs engaging in IP licensing activities are more likely to have a stronger competitive advantage compared to their industry peers. The coefficient of 2.32 suggests a robust positive effect, indicating that an increase in IP licensing is associated with a corresponding increase in the assessment of competitive advantage. This finding suggests that SMEs can benefit from strategically leveraging their intellectual property assets through licensing agreements to drive long-term growth through competitive advantage.

The analysis also identified a statistically significant positive correlation between IP ownership and competitive advantage in SMEs ($\beta = 2.75$, $p < 0.01$). This indicates that SMEs that own IP are more likely to gain a competitive advantage in their respective markets.

Within the recommendations obtained from respondents, three key factors were identified:

- IP expert: To enhance collaboration, it is recommended to have an in-house IP expert, someone experienced in IP collaboration, development, and exploitation, or to utilize an IP consultant.
- Right partner: Clear goals and objectives are crucial for successful collaboration, and it is recommended to create a memorandum of understanding between partners.
- Innovative approach: To benefit from IP development and collaboration, a company should have an innovative mindset or an innovative team that allows room for experimentation.

In the context of the question, "What were the main challenges your SME faced in negotiating and executing the IP licensing agreement?" within the surveyed SMEs, we observe that up to 67% of companies perceived negotiating fair terms and compensation as a significant challenge.

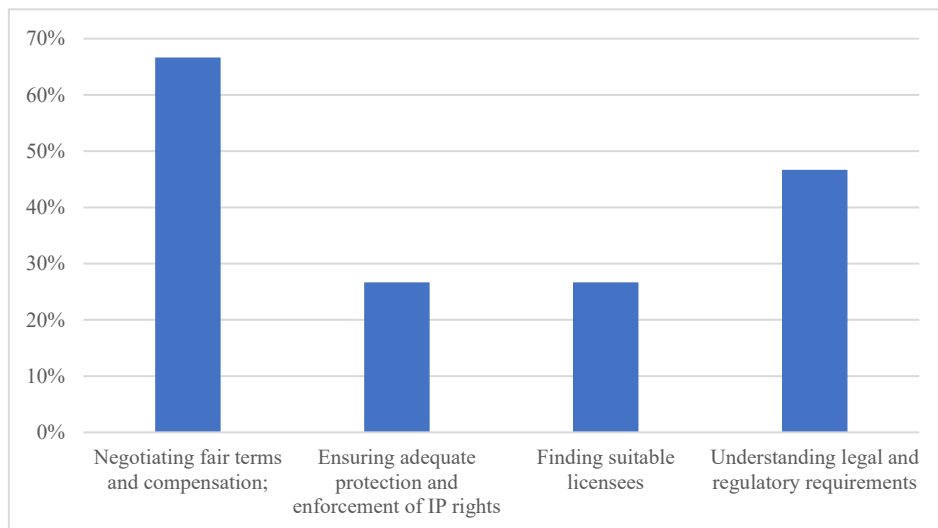


Figure 7: Main challenges in negotiating and executing IP licensing agreement.

5. Conclusions and Discussion

Our research underscores the growing recognition among SMEs regarding the importance of leveraging their IP assets to drive growth, innovation, and competitive advantage. IP licensing and collaborations present viable pathways for SMEs to access complementary resources, expand their market reach, and accelerate product development. Strategically utilizing their IP assets allows SMEs to capitalize on opportunities for growth and market expansion. The strategic utilization of intellectual property rights can be a pivotal enabler

for SMEs looking to expand their presence (Tietze et al., 2017). They offer SMEs the means to establish a firm footing in international markets, safeguarding their interests as they embark on the journey of international growth (Moschini, 2010). These IP protections not only provide a shield against potential infringements but also instill a sense of security, ensuring that a firm's innovations and brand identity remain protected (Teece, 2018). The results of the statistical analyses in our research have highlighted the significance of the opportunity for expansion into new markets, which serves as a motivator for micro and small businesses. For these smaller enterprises, achieving rapid expansion is challenging without partnerships. However, the research has confirmed that micro and small businesses face notably greater difficulty in finding suitable partners. In contrast, medium-sized companies see challenges in aligning their strategic goals and objectives with their partners.

Overall, the results directly underscore the substantial impact of IP and IP licensing on the competitive advantage of SMEs, emphasizing the need to reduce barriers and overcome challenges that hinder Slovak businesses in managing and acquiring IP.

When addressing the issue of SME IP management, it's essential to emphasize the significant challenges arising from resource limitations that affect SMEs' involvement in IP licensing and collaboration agreements. To be specific, financial constraints (Osano & Languitone, 2016), hinder their ability to invest in comprehensive IP protection measures, seek legal expertise, and conduct thorough market research. Furthermore, limited human resources constrain their capacity for evaluating and negotiating potential partnerships. These challenges align with prior research on resource constraints faced by SMEs, particularly in developing countries (Bris & Cabolis 2018).

Small and medium-sized businesses often lack access to business events, trade associations, and industry networks, limiting their ability to build relationships and seize collaboration opportunities. This networking gap results in missed connections and fewer partnership options. To enhance collaboration, SMEs should focus on open membership clusters rather than restricted networks and ensure cultural and organizational compatibility alongside technological alignment (OECD, 2004). Improving partner selection can be achieved through innovative strategies such as using networking platforms, innovation clusters and hubs (De Propris & Driffield, 2019), collaborative research initiatives (Wessner, 2020), industry associations, and government initiatives, which help broaden the pool of potential collaborators and foster cross-sector creativity (Lee & Park, 2021).

When engaging in IP licensing and collaborations, SMEs must also consider legal support. According to our research, SMEs often lack in-house legal expertise, necessitating external legal assistance. To protect SMEs' interests and negotiate fair and equitable terms, it is crucial to establish strong relationships with knowledgeable patent attorneys and other legal professionals who understand the intricacies of IP licensing agreements. Furthermore, SMEs can directly utilize legal and IP training through initiatives like the European Union Intellectual Property Office (EUIPO).

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