

# Benefits of using tax relief for R&D works

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**Abstract**— Research and development works (RD works) in accounting and management are increasingly being implemented and used, both in Poland and around the world. The legislator is constantly trying to introduce new benefits into the legal system in the form of tax breaks. However, as shown in the article, respondents (accountants, managers, beneficial owners) have low awareness and knowledge of possible solutions.

The article aims to verify research hypotheses through chi-square tests of independence. The research questions regarding the relationship between the length of service and the position held, the position held and the knowledge of the combined (simultaneous) tax relief, as well as the relationship between the impact of the simultaneous tax relief and the respondents' suggestions regarding potential legal changes in its scope, were verified using hypotheses. research.

The conducted research contributes to a current look at the work of RD, increasing the awareness of accountants and managers, and may also constitute the basis for the development and drawing of more reliable results in the future, assuming greater return of surveys.

**Keywords**— RD works, simultaneous relief, tax reliefs

## I. INTRODUCTION

In the early 18th century, Benjamin Franklin said that „the only things certain are death and taxes”. Death results from the fundamental principles that define our reality and it is impossible to function in our world without it, and the state's economy will not survive without taxes. In Poland, various facilities for tax payers are introduced into the tax systems in the form of reliefs and deductions. One of such reliefs is research and development relief (R&D relief). So far, it has been the subject of many studies, but public awareness of this topic is still low, as evidenced by the results of this research and

the experience of the authors of the article.

A modern economy based on knowledge and intensive technological progress requires constant expenditure on research and development (Skrodzka, 2024). The innovativeness of enterprises has become a key factor building their competitiveness both on the domestic and international markets (Bańkowski, Rzepka, 2024).

The main goal of this article is to present research results regarding the respondents' awareness and knowledge of the issue of R&D relief, IP BOX, prototype and innovative employees. The analysis is based on collected empirical data and the results of an online survey addressed to accountants, managers and beneficial owners, which show how the mentioned tax reliefs are understood by the mentioned professional groups.

The authors of the article asked the following research questions:

Q1: Is there a statistically significant relationship between the respondents' work experience and the position held in the accounting department or manager?

Q2: Is there a statistically significant relationship between the position held and knowledge of the simultaneous relief for RD work?

Q3: Is there a statistically significant relationship between the impact of the simultaneous relief and the respondents' suggestion of the need to change the regulations regarding it?

They subsequently test the following research hypotheses based on the above research questions. The relationships between the research questions and hypotheses and the questions from the survey questionnaire are included in the empirical part of this article.

H1: There is no statistically significant relationship between

the respondents' work experience and the position held in the accounting department or the position of a manager.

H2: There is no statistically significant relationship between the position held and knowledge of the simultaneous relief for RD work.

H3: There is a statistically significant relationship between the impact of the simultaneous relief and the respondents' suggestion of the need to change the regulations regarding it.

The article uses research methods such as analysis and criticism of the literature, own observations, a survey questionnaire and analysis of the chi-square test of independence.

## II. RESEARCH AND DEVELOPMENT WORK AND TAX RELIEFS

Research and development (RD) work in accounting and management is still an extremely interesting issue. So far, they have been the subject of research by many authors (Dyhdalewicz, 2021; Hołda, Łojek, 2024, Hołda, Łojek, 2023; Hołda, Łojek, 2022, Kępa, 2022; Nehrebecka, Białek - Jaworska, 2015; Stasiak, 2023). All the above-mentioned authors unanimously pointed out that the skillful application of BR work in an enterprise can lead to numerous benefits. The financial and tax aspects through the use of tax reliefs should be particularly pointed out here.

A tax relief is an amount or percentage specified in tax law, understood as an exemption, deduction, reduction of the tax base and/or tax amount (Ofiarski, 2007). The accounting and management community mainly perceives tax relief as a reference to income taxes (in Poland, mainly PIT and CIT) (Kuźniacki, 2021). The first one concerns natural persons, the second one concerns legal persons.

However, in order to correctly qualify expenses for RD works, the provisions of the accounting law should be analyzed. This element requires distinguishing and defining research and development work separately. The first of them concern discovery activities, the search for new materials and technologies, so it can be indicated that their task is to acquire new knowledge (Hazak, Männasoo, Virkebau, 2017). The second one concerns the improvement of materials and/or technologies, as well as testing and production of experimental models (Huang, Duu-Jong, 2015). This stage is intended to prepare for serial production of a given good and/or implementation of the technology for sale (Chiesa, 2003). This information can be found in the elements of accounting law.

When analyzing the provisions of the balance sheet law in the scope of BR work, it is worth mentioning Art. 33 section 2 of the Act of September 29, 1994 on Accounting (Act, 1994), where there is a mention of the general definition of these works as well as their valuation. However, in accordance with Art. 10 section 3 of this legal act, reference should be made to international standards - IAS 38 "Intangible Assets" (IAS 38).

Entrepreneurs' expenses for BR works in the research part should be classified directly as current costs when these expenses were incurred. However, those for development

works can be settled over time on active accounts of accruals (Łojek, 2024). Moreover, in accordance with Art. 17 UoR, the economic entity should also keep detailed analytical records. This approach allows for the proper qualification of expenses and will also enable the determination of the appropriate tax base. The provisions of the Act on R&D require an appropriate division of analytics into the expenditure incurred for research and development work, in particular:

1. gross remuneration of employees and contractors,
2. overheads for these remunerations,
3. depreciation write-offs on fixed assets,
4. depreciation write-offs on intangible assets,
5. costs of: expert opinions, opinions, consultancy, obtaining and maintaining a patent, as well as the right of protection for this design.

In recent years, economic practice has often used off-balance sheet accounts to determine the so-called tax result.

Its correct determination allows for determining the tax base and, consequently, the income tax due. However, business entities that used BR works should also appropriately account for possible tax reliefs related to the issue in question according to the above-mentioned amounts. We can distinguish:

1. tax on research and development work (R&D relief),
2. IP BOX,
3. for a prototype,
4. on innovative employees.

The first one concerns the possibility of high qualification of expenses as tax costs (up to 200% in special cases). This limit applies to all taxpayers in terms of salary costs and related overheads. In the case of other expenses, the possibility of deduction depends on the taxpayer's status: micro, small or medium-sized entrepreneur, as well as an entrepreneur with the status of a Research and Development Center, who can also benefit from this limit. Other taxpayers who do not meet the above criteria can deduct standard costs in the amount of 100% of the expenses incurred. This relief is regulated by the provisions of Art. 26e of the Act of July 26, 1991 on personal income tax (Act, 1991) and Art. 18d of the Act of February 15, 1992 on corporate income tax (Act, 1992).

The second one, introduced into the Polish legal system with effect from January 1, 2019, involves a preferential tax system (tax rate 5%). However, not every taxpayer is able to use this solution, as this relief is intended for income obtained from intellectual property rights that are subject to legal protection.

It is mainly used by IT specialists and programmers. The development prospects for programmers are not optimistic in this respect, because the regulations that are planned to be introduced require employment. In the opinion of the authors of the article, this may pose a threat to sole proprietorships, where in fact only the person running the business is self-employed. Legal regulations regarding reliefs were introduced in Art. 30 ca and art. 30 cb of the Personal Income Tax Act and Art. 24d and art. 24e of the CIT Act.

The third solution allows you to deduct an additional 30% of eligible expenses from the tax base, but it cannot exceed 10% of the income obtained. The main idea of this solution is the

possibility of creating a prototype much cheaper and then implementing an innovative solution or technology into production. The functioning of these provisions has been implemented in the provisions of Art. 26ga of the PIT Act and 18ea of the Act and CIT.

The last of the mentioned tax reliefs is described in the provisions of Art. 26eb of the Personal Income Tax Act and Art. 18db of the CIT Act. It concerns the possibility of deduction available to a taxpayer if he employs "innovative employees". According to the statutory definition, these are people who devote at least 50% of their working time to carrying out tasks related to research and development. Employment should be based on an employment contract, but mandate contracts or contracts for specific work are also acceptable. However, B2B or B2C contracts are not eligible.

The last of the reliefs mentioned were introduced from January 1, 2022 as a result of the so-called Polish Order, and cannot be granted to taxpayers who conducted business in a SSE (Specjalna Strefa Ekonomiczna) and/or within the PSI (Polska Strefa Inwestycji).

The application of the R&D relief may result in its combination with the other reliefs mentioned above. Combining it with the IP BOX relief creates the so-called simultaneous tax relief, thanks to which income from qualified property rights will be taxed at a 5% income tax rate. However, it is also possible to combine the B+R relief with the other two reliefs to obtain preferential taxation.

### III. ENTITIES BENEFITING FROM TAX RELIEF FOR R&D WORKS

Data for the study were collected using a survey questionnaire. The study took place between May and September 2024 in Poland. 37 respondents responded. The survey questionnaire contained 10 questions and is available upon request.

The observations are summarized in table no. 1.

TABLE 1. RESPONDENTS' ANSWERS COLLECTED IN THE SURVEY.

No	Question – survey questionnaire	answers	results
1	position held in the company	accountant assistant	14%
		junior accountant	14%
		senior accountant	24%
		chief accountant	11%
		director	0
		management board/supervisory board	14%
		owner	24%
2	length of service in the position held	under 1 year	8%
		from 2 to 4 years	46%
		from 5 to 7 years	11%
		over 8 years old	35%
3	Has your company ever used relief for research and development work and/or IP BOX?	yes	19%
		no	81%
4	Do you know about the issue of	Yes	38%
		No	62%

No	Question – survey questionnaire	answers	results
5	If so, how do you evaluate the process of applying for simultaneous relief?	Very easy	3%
		Easy	10%
		hard	17%
		Very hard	7%
		No opinion	63%
6	does the company where you work apply (or used) simultaneous relief for RD work?	Yes	22%
		No	78%
7	To what extent did the simultaneous relief influence your financial decisions?	little impact	6%
		Small impact	9%
		moderate	13%
		big impact	6%
		very big influence	0
		No opinion	66%
8	Did the application of this relief require the employment of specialized employees?	Yes	6%
		No	28%
		no opinion	66%
9	Was the application of the above-mentioned relief related to the intention to create an innovative product?	Yes	16%
		No	16%
		no opinion	68%
10	Do you think that the current regulations regarding simultaneous relief should be changed?	Yes	14%
		No	14%
		no opinion	72%

Source: own study based on a survey.

The first part of the survey examined the positions held by the respondents and their work experience. Among the respondents, most people held the position of senior accountant (24%) and business owner (24%). The next positions were occupied by junior accountants (14%), accounting assistants (14%) and members of the management board or supervisory board (14%). The lowest represented positions were that of chief accountant (11%) and director, which was not indicated by any respondent. In terms of work experience, nearly half (46%) of respondents had been working in their position for 2 to 4 years, and every third respondent (35%) had experience of more than 8 years. Therefore, in the opinion of the authors of the article, the collected observations may indicate a relatively high level of knowledge of tax reliefs for R&D work.

The next questions concerned knowledge of tax reliefs related to RD and IP BOX works. The majority of respondents (81%) declared that their company had never used such relief. Knowledge of the simultaneous relief for RD work was also limited - 62% of respondents did not know this issue, while of those who knew it, only 22% admitted that their company had used this relief. The majority assessed the process of applying for relief as difficult (17%) or easy (10%), with the largest group (63%) having no opinion on this matter. As mentioned, the authors expected other observations before conducting this analysis.

The last part of the survey concerned the impact of the simultaneous relief on companies' financial decisions and related activities. 66% of respondents said that this relief did not apply to their company, and for most others it had a moderate

or small impact. Only 6% of companies had to employ specialized employees due to the relief, and only 16% of respondents indicated that its use was related to the idea of creating an innovative product. Interestingly, the majority of respondents (72%) had no opinion on the need for changes in the regulations regarding simultaneous relief, which, in the authors' opinion, confirms the above part of the research on the low awareness of respondents regarding relief for RD works.

The next step in the research was to conduct chi-square statistical tests of independence occurring in individual hypotheses. The summary results are presented in Table 2.

TABLE 2. HYPOTHESIS TESTING OF INDEPENDENCE TESTS.

hypothesis	question	survey questionnaire	$\chi^2$	df	p	verification	N	V-Cramer
H1	1	1 i 2	20.9	15	0.140	rejected	37	-
H2	2	1 i 4	6.98	5	0.222	rejected	7	-
H3	3	7 i 10	22.0	8	0.005	accepted		0.586

Source: own study.

The first research question asked in connection with the verification of the first hypothesis is: Is there a statistically significant relationship between the respondents' work experience and the position held in the accounting department or manager?

In order to verify the first hypothesis, a chi-square test of independence was performed. The test results indicate that there is no statistically significant relationship between the position held and the respondent's work experience:  $\chi^2 (15 = 20.9; p = 0.140)$ , which means that this hypothesis should be rejected.

The lack of a statistically significant relationship between the variables suggests that promotion to higher positions in accounting or management may not depend on the length of experience, which may result from the dynamic nature of the labor market, where the ability to adapt to changes is more important. In conditions of increasing automation and digitization of accounting, qualifications and adaptability may be more important than experience alone, reflecting the need to respond more quickly to new technologies and regulations.

Subsequently, the second hypothesis was verified, based on the second research question: Is there a statistically significant relationship between the position held and the knowledge of the simultaneous relief for RD works?

The value of the chi-square test of independence was ( $5 = 6.98; p = 0.222$ ), which means that there is no statistically significant relationship between the position held and the knowledge of the simultaneous tax relief for RD works.

The lack of a statistically significant relationship between position and knowledge of the R&D relief may suggest that knowledge of tax relief in this area is not fully widespread, even in higher positions, which may mean limited use of these tools in companies. In the broader economic context, this may indicate the need for more education and support from the tax administration to increase awareness and use of reliefs that can accelerate innovation and market competitiveness.

The last research question was: Is there a statistically significant relationship between the impact of the simultaneous

relief and the respondents' suggestion of the need to change the regulations regarding it?

The verification of the chi-square test of independence was ( $8 = 22.0; p = 0.005$ ), which means that there is a statistically significant relationship between the impact of the simultaneous relief and the respondents' suggestions regarding changes in tax regulations. The value of Cramer's V is 0.586, which means a moderate strength of relationship between the mentioned variables.

A statistically significant relationship between the variables suggests that the current regulations regarding simultaneous relief may not be optimal and people involved in it see the need to improve them. This may be a reflection of companies' general dissatisfaction with tax policy or overly complicated regulations, which inhibits the full use of tools supporting innovation, and changing the regulations could improve their effectiveness and accessibility for enterprises.

#### IV. CONCLUSIONS

At the beginning of this article, there was an overview of possible tax reliefs for RD works that exist in Poland. It should be added that some of them have been introduced into the Polish legal system since 2016 (R&D relief), IP BOX (since 2019), and ending with the newest ones, introduced only from 2022 (for the prototype and for innovative employees).

The issue of research and development work is gaining popularity among entrepreneurs because it constitutes a significant contribution to the development of the industry and, to some extent, it is a tool for perceiving a company on a competitive market. The article focuses on the perception of the title issue from the tax side of enterprises, with emphasis on presenting the issue of reliefs provided for by the legislator for entrepreneurs and knowledge of these issues.

Lower tax burdens on entrepreneurs may be an incentive to reinvest money or spend it on broadly understood employee benefits (new jobs, bonuses, allowances, prizes and others).

In the empirical part of this article, a statistical analysis of the data was performed. Observations were collected through surveys, with descriptive and statistical interpretation of the data. The added value is provided by the results of chi-square tests of independence in the research hypotheses. Two of the three hypotheses had to be rejected due to the lack of a statistically significant relationship in the conducted research. One of the mentioned hypotheses was accepted.

The results of the observations should be considered surprising, because the declared work experience of the respondents and their positions held could indicate a high level of knowledge of tax reliefs related to RD work. Meanwhile, statistical verification of the hypotheses showed a low level of knowledge of the issues discussed.

The article may constitute the basis for further research in this field, assuming a larger research sample. However, in the opinion of the authors of the article, the collected observations constitute a significant contribution to the development of the disciplines of finance and management.

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## LEGAL ACTS

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## SURVEY QUESTIONNAIRE

Q1: Please indicate your position in the company:

- a. Assistant,
- b. Junior accountant,
- c. Senior accountant,
- d. Chief accountant,

e. Director,

f. Management Board / Supervisory Board,

g. Owner / shareholder / shareholder.

Q2: Please indicate your length of service in the position you hold:

- a. 0 – 1 years,
- b. 2 – 4 years old,
- c. 5-7 years,
- d. Over 8 years old.

Q3: Has your company ever used relief for research and development work and/or IP BOX?

- a. Yes,
- b. No.

Q4: Do you know the issue of simultaneous tax relief for BR work?

- a. Yes,
- b. No.

Q5: If so, how do you evaluate the process of applying for simultaneous relief?

- a. Very easy,
- b. Easy,
- c. Difficult,
- d. Very difficult,

e. I have no opinion.

Q6: Does the company where you work apply (or used) simultaneous relief for BR work?

- a. Yes,
- b. No.

Q7: To what extent did the simultaneous tax relief influence your financial decisions?

- a. Very large influence,
- b. Great influence,
- c. Medium impact,
- d. Low impact,
- e. No impact.

Q8: Did the application of this relief require the employment of specialized employees?

- a. Yes,
- b. No.

Q9: Was the application of the above-mentioned relief related to the intention to create an innovative product?

- a. Yes,
- b. No.

Q10: Do you think that the current regulations regarding simultaneous relief should be changed?

- a. Yes,
- b. No,
- c. I have no opinion.