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Regional effects of the Northern Karelia Cooperative Society





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Purpose of the study

The purpose of this study is to assess the significance of the Northern Karelia Cooperative Society (Pohjois-Karjalan Osuuskauppa, PKO) as an operator in the region of North Karelia. Economic and employment effects in particular have been selected as indicators of regional effect. Since PKO has a wide-ranging effect on the development of the region, the study also examines the societal effect of PKO's activities from perspectives such as the cooperation between municipalities, organisations and educational institutions.

Methods, material and implementation of the study

The term “regional effect” refers to the part of the effect of the reviewed organisation’s activities that takes place within the defined geographical area. This report examines the operating area of the Northern Karelia Cooperative Society (Pohjois-Karjalan Osuuskauppa, PKO), which is the region of North Karelia and the municipality of Rautavaara in Northern Savonia. In addition to the *direct* economic and employment effects of PKO, the *indirect* or multiplier effects of PKO’s operations on the income and employment of companies and municipalities in the region have also been studied. It should be noted that some direct and indirect effects occur outside the region. Such effects are largely excluded from this study. In addition, examples of social and cultural effects are also presented, such as cooperation with municipalities in the construction of sports and parking facilities, as well as in the development of the city centre, the development of musical events and support for higher education.

The report is based on PKO Group’s financial statements for 2018–2022, materials intended for PKO’s internal use and discussions with PKO’s executive management. In addition, the assessment of effects used material from media news articles and Statistics Finland’s open data.

The study’s methodological choices for determining economic effect are described in chapter 4 with the description of each regional effect indicator.

PKO has commissioned this study from the Karelia University of Applied Sciences, and it was carried out in cooperation between both organisations. The main author of the study was Teppo Tarnanen, a lecturer at Karelia University of Applied Sciences. PKO’s contact person was Petri Vähä, Director of Communications and Responsibility, who wrote the sections describing the cooperative’s current status and future outlook. In addition, comments and information for the report have been provided by Antti Pölönen, PKO’s CFO (formerly accounting manager); Osmo Nevalainen, construction and business location manager (now retired); Riitta Lahtinen, head accountant at SOK Palveluässä (regarding certain accounting data); and others. The layout of the publication was provided by graphic designer Riikka Helakisa. As the report will be published in the Karelia University of Applied Sciences publication series, data specialist Kaisa Varis provided instructions for the layout to comply with Karelia University of Applied Sciences’ graphic design guidelines. Any errors left in the content of the report are the author’s own.





Northern Karelia Cooperative Society

A brief history of PKO

In the early years of the twentieth century, several small cooperative societies were established in Finland by the workers and farmers of the region. The Northern Karelia Cooperative (Pohjois-Karjalan Osuusliike) was founded quite soon after Finland's independence in the spring of 1919 (PKO 2019). Finland's population was then just over half its current level (about 3.1 million), and North Karelia had about 140,000 inhabitants (Statistics Finland 2023e). As an operating environment, North Karelia was an area dominated by agriculture and forestry, with a low income level compared to the national average. The operations of many cooperatives were not sustainable for long, as they were in similar situations and were founded on optimistic outlooks.

The continuity of PKO's operations was also occasionally in jeopardy in its early decades. After a challenging start, business started to flow reasonably well. The next challenge came in the early 1980s, when the entire S Group found itself in crisis, which also threatened the continuity of PKO's operations. But S Group was able to change course for the better. Since the establishment of Prisma Joensuu in 1989 and the development of the S-market network and its sales since the 1990s, PKO's operations have been continuously profitable,

and its finances have been stable. With net sales of EUR 484.4 million in 2022 (2022), PKO is one of the most significant cooperatives in Finland relative to the size of its operating area.

Over the decades, other regional cooperatives have merged with PKO, especially in the latter half of the twentieth century. When the Lieksa and Liperi cooperatives were merged with PKO in 1984, and the Central Karelian Cooperative Society was merged in 1991, PKO's operating area covered the entire region, except for Nurmes, Juuka and Valtimo. Due to the merger of Jukolan Osuuskauppa and PKO in the cooperative's centenary year of 2019, the operations of PKO, as its name suggests, cover the entire region of North Karelia, and a small part of Northern Savonia (Rautavaara).

PKO today

PKO is a consumer cooperative with more than 105,000 co-op member households (31 December 2022).

PKO's mission or core function is to make North Karelia an even better place to live. To achieve this mission, PKO produces services and benefits for its co-op members and improves the region's vitality.



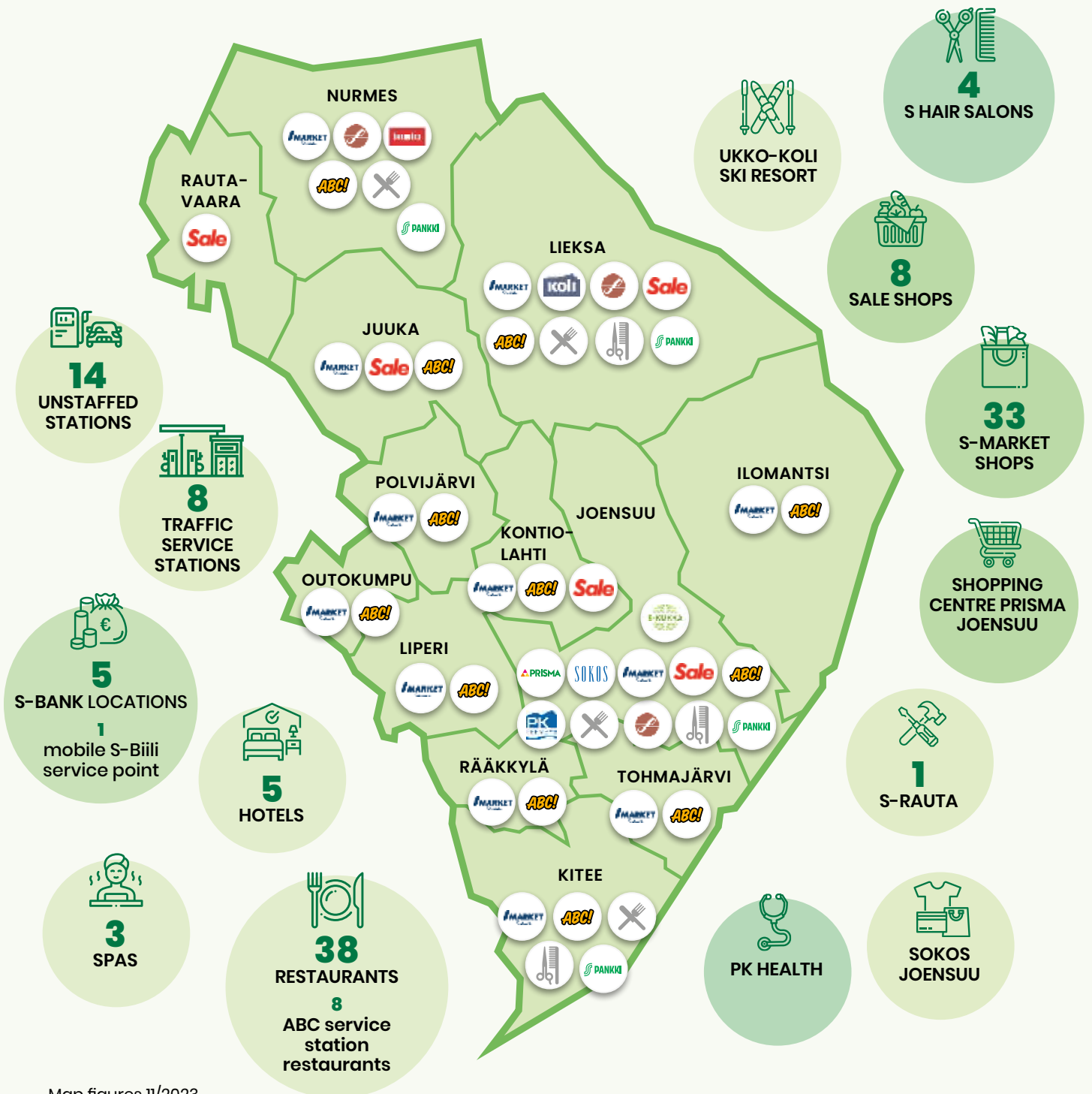
The Northern Karelia Cooperative Society plays a dual role, as is typical of cooperatives, meaning it is both a business entity and a member community. PKO operates grocery, accommodation, hospitality, traffic and consumer goods business as well as service businesses in 13 municipalities and cities in 126 locations. PKO has business in Ilomantsi, Joensuu, Juuka, Kitee, Kontiolahti, Lieksa, Liperi, Nurmes, Outokumpu, Polvijärvi, Rautavaara, Rääkkylä and Tohmajärvi. PKO's location map and the number of business locations are visualised on the next page.

In 2022, PKO employed an average of 1,603 people, making the cooperative the largest private employer in the region. PKO is also the largest private company in the region in terms of sales. PKO's taxable sales in 2022 amounted to EUR 584.6 million, which represents an increase of EUR 60.9 million (11.6%) compared to 2021. In 2021, PKO was S Group's 11th largest cooperative in terms of sales volume. In 2022, PKO's net sales increased by EUR 50.6 million from the previous year, amounting to EUR 484.4 million. The operating result of EUR 21.3 million (EUR 20.1 million in 2021) was 4.4% of net sales, and investments amounted to EUR 22.0 million, or 4.5% of net sales. PKO's equity ratio in 2022 was 78.1%.

In accordance with its member community role, PKO uses all its profits to reward co-op members, ensure its solvency, invest in the development of its operations and network, and promote the well-being of its personnel. Most of the profit is returned to the cooperative's co-op members, meaning North Karelian households. In 2022, the operating result was EUR 21.3 million. In accordance with a proposal from PKO's Executive Board, 64% (EUR 9.6 million) of the distributable profit of EUR 14.9 million was distributed to the co-op members, and 34% (EUR 5.3 million) was spent on the development of PKO's operations and services. 2.3% of the purchases made during 2022 (EUR 8.4 million) were returned to the co-op members as a surplus return, and interest of 12% (EUR 1.2 million) was paid on membership fees. In a cooperative society, unlike in listed companies, the expenditure of profits is decided by representatives elected by the members, meaning ordinary people in North Karelia.

PKO's activities are characterised by the balanced development of a variety of matters. In addition to the development of business figures, indicators related to matters such as customer experience, personnel and co-op membership are closely monitored. At the end of 2022, PKO had 105,846

PKO operates grocery, accommodation, hospitality, traffic and consumer goods business as well as service businesses in 13 municipalities and cities in 126 locations. PKO has business in Ilomantsi, Joensuu, Juuka, Kitee, Kontiolahti, Lieksa, Liperi, Nurmes, Outokumpu, Polvijärvi, Rautavaara, Rääkkylä and Tohmajärvi.



Map figures 11/2023

co-op members, which is 90.7% (89.3% in 2021) of the region's households. PKO's co-op membership coverage is the highest of S Group's cooperatives. The number of new members was 5,509. The number of members who resigned from PKO or transferred to other cooperatives was 2,875, resulting in a net increase of 2,634 people.

Direct benefits of PKO's operations to the region amount to 134.2 million

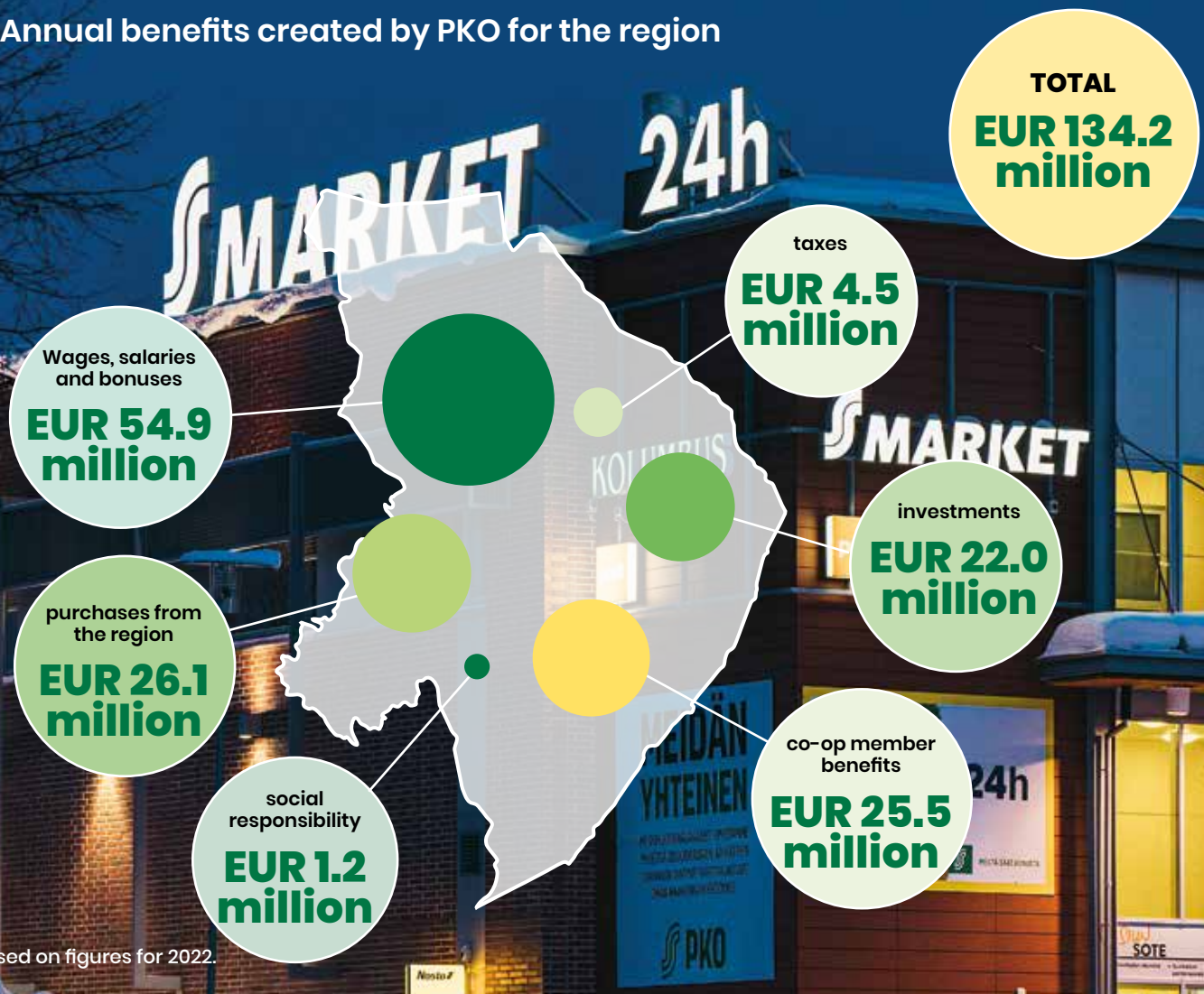
PKO has previously calculated that in 2022, the direct benefits of its own operations to its region amounted to EUR 134.2 million. Benefits by component:

- ◆ wages, salaries and bonuses (EUR 54.9 million)
- ◆ purchases within the region (EUR 26.1 million)
- ◆ co-op member benefits (EUR 25.5 million)
- ◆ investments (EUR 22.0 million)
- ◆ taxes (EUR 4.5 million)
- ◆ social responsibility (EUR 1.2 million)

Social responsibility includes the summer employment of young people, support given to numerous sporting, cultural and NGO operators, and charity. In the summer of 2023, PKO recruited a total of 1,100 young people as summer employees, 130 of whom were special-needs young people and their assistants.

PKO's own calculated figure of EUR 134.2 million differs from the direct regional income effect of EUR 150 million according to this study, but both are good indicators of the magnitude of the regional economic effect. On the one hand, the difference between the calculations is due to differences in definitions – for example, the fact that the regional income effect in this study also includes the Other operating expenses item in the income statement – and, on the other, to the higher level of detail in the study's examination of the regional allocation of different income effects.

Annual benefits created by PKO for the region



Calculations based on figures for 2022.

PKO's management model

PKO is part of S Group. It consists of 19 regional cooperatives, including PKO, and six local cooperatives, as well as SOK Corporation (SOK) and its subsidiaries. The regional cooperatives are owned by co-op members, and the regional cooperatives in turn own SOK.

Council of Representatives

The highest decision-making authority of PKO's owners, meaning its co-op members, is exercised by the Council of Representatives, which consists of 50 members. The members of the Council of Representatives are elected for four years at a time through an election among the co-op members.

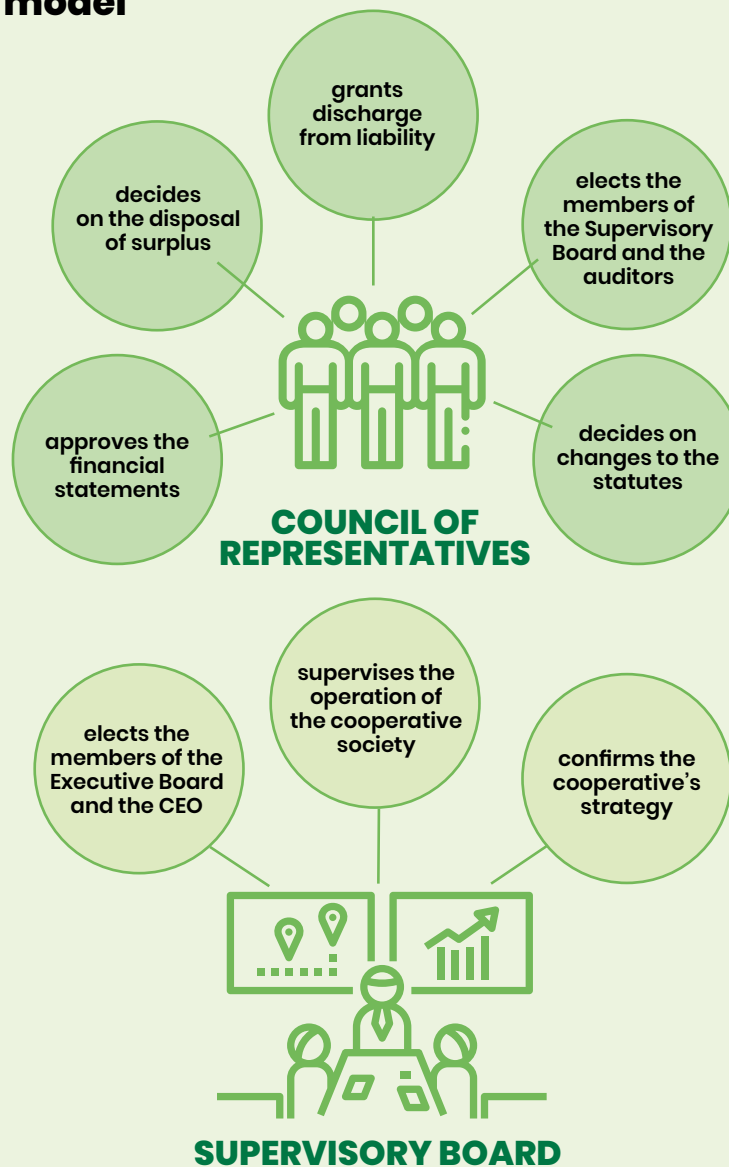
Supervisory Board

PKO's Supervisory Board has 22 members, 20 of whom are elected by the Council of Representatives. The other two are representatives of the cooperative's employees. The Supervisory Board's members have a term of three years, and one third of the members are outgoing each year.

Executive Board

The Executive Board consists of the CEO and five members elected by the Supervisory Board for a calendar year at a time. In accordance with the statutes, the CEO of the cooperative society serves as Chair of the Executive Board. The Executive Board elects a Vice Chair from among its members for one calendar year at a time. The Executive Board convenes when necessary, but at least six times per year at the invitation of the Chair.

The Executive Board is responsible for carefully promoting the interests



of the cooperative and managing its matters in accordance with the Cooperatives Act, PKO's statutes and the guidelines and decisions of the Supervisory Board. The Executive Board decides on PKO's operational strategies, overall objectives, annual financial and other objectives, and any necessary action plans. In addition, the Executive Board is responsible for making decisions on investments, the sale of assets, the appointment of management, HR policy and loans, among other matters.

Management team

The CEO is assisted in the operational management of PKO by a management team. The meetings prepare matters to be decided by the Executive Board, for example, and manage issues related to investments, co-op membership, personnel, marketing and monthly results. The key task of the management team is to implement the decisions made by the Executive Board.



PKO's indicators of regional effect

The concept of regional effect

The term “regional effect” refers to the part of the effect of the reviewed organisation’s activities that takes place within the defined geographical area. As the reviewed organisation is the regional cooperative PKO, it is natural that the target area of this study is the North Karelia region.

This chapter focuses on regional income and employment effects. In addition to the *direct* economic and employment effects of PKO, the *indirect* or multiplier effects of PKO’s operations on the income and employment of companies and municipalities in the region have also been studied. It should be noted that some direct and indirect effects occur outside the region. Such effects are largely excluded from this study. The definitions of income effect and employment effect have been provided in context below, as well as the difference between direct and indirect effect.

PKO's income effects

Direct income effect

In this study, direct income effects refer to the direct income effect resulting from the expenses in accordance with PKO’s financial statements to operators in the region. Revenue is generated as sales revenue to companies selling groceries, consumer goods, foodstuffs and various services to PKO, net sales to construction companies, wage income to PKO’s staff, and tax revenue to the region’s municipalities, for example. Of course, some of the cooperative’s procurement is made outside the region, so the direct income effect of such purchases takes place outside the region.

The following is an estimate of the share of expenditures in PKO’s financial statements that is allocated to the North Karelia region. To define the shares, this study has used data from Statistics Finland and examined the matter further through discussions with PKO’s management. Some uncertainty will inevitably remain in the figures, but they have been estimated based on the precautionary principle.

Proportions of PKO's expenditure in the region by type of expenditure:

- ◆ revenue from the sale of goods and services to companies in the region
 - ◆ at least 9.5% of purchased goods remains in the region
 - ◆ at least 70% of purchased services remains in the region
- ◆ income effect of investments on companies in the region
 - ◆ at least 80% of investment expenditure remains in the region
- ◆ (net) wage income for employees living in the region
 - ◆ 99% of salary expenses remain with those registered in the region
- ^a taxes on wage income (excl. state tax) for the region's municipalities where employees reside permanently
 - ◆ the amount of income tax in euros has been estimated as a proportional share of the data in each year's financial statements using data from PKO's accounting: the share of tax withholdings is 18.4% of wages and salaries.
 - ◆ in 2018–2022, municipalities' average share of household income taxes in the whole of Finland ranged between 63–69%, and the state's share between 31–37% (Statistics Finland 2023d),
→ because in a lower-than-average income region such as North Karelia the share of progressive state taxes is lower, and the share of municipalities' taxes is correspondingly higher, the upper end of 69% of the range is used as the municipalities' share of taxes on wages and salaries
- ◆ the employees' share of social security contributions has been estimated as a proportional share of the data in each year's financial statements using data from PKO's accounting: the employees' share of social security contributions is 9.51% of wages and salaries.
- ◆ Payments of Bonuses, membership fee interest and surplus returns to co-op members
 - ◆ practically 100% remains in the region
 - ◆ Bonuses and surplus returns are tax-exempt for the recipient
 - ◆ capital gains tax is paid on the membership fee interest, but its effect has not been taken into account in the calculation
- ◆ taxes paid by the cooperative on its earnings
 - ◆ the share of tax received by municipalities is calculated as 37%, which is the average share of corporate income taxes received by municipalities in 2018–2022 (Statistics Finland 2023d)

These shares will be used below to calculate the income effect remaining in the region.



Table 1: PKO Group's income statements for 2018–2022

Items of the income statement	2022	2021	2020	2019	2018	Average 2018–2022	Total 2018–2022
Net sales	484,411,476	433,795,329	404,137,982	370,038,331	346,739,706	407,824,565	2,039,122,824
Other income from business operations	835,830	82,276	402,357	169,558	102,443	318,493	1,592,465
Materials and services	347,989,059	311,628,085	294,119,677	261,768,590	245,739,332	292,248,949	1,461,244,744
Personnel costs	54,873,054	50,221,099	45,723,197	44,313,854	40,029,918	47,032,224	235,161,121
Depreciation and impairment	14,015,845	12,852,126	11,743,733	11,490,456	11,076,968	12,235,826	61,179,129
Other operating expenses	47,617,426	41,753,333	37,830,376	37,857,039	33,922,009	39,796,037	198,980,184
Operating surplus (deficit)	20,751,921	17,422,961	15,123,355	14,777,950	16,073,923	16,830,022	84,150,110
Share of profit (loss) of associated companies (+/-)	-12,338	11,065	23,267	9,110	250	6,271	31,355
Financial income and costs	-193,582	1,954,397	1,829,722	2,658,471	85,722	1,266,946	6,334,729
Surplus (deficit)	20,546,001	19,388,423	16,976,344	17,445,531	16,159,895	18,103,239	90,516,194
Surplus before appropriations and taxes	20,546,001	19,388,423	16,976,344	17,445,531	16,159,895	18,103,239	90,516,194
Income taxes (+/-)	-4,460,075	-3,991,335	-3,253,974	-3,460,161	-3,517,719	-3,736,653	-18,683,263
Minority interests (+/-)	-	0	0	0	0	0	0
Surplus (deficit) for the financial year	16,085,926	15,397,088	13,722,371	13,985,370	12,642,176	14,366,586	71,832,931

The magnitude is significant on the scale of North Karelia: PKO's five-year net sales totalled approximately EUR 2.04 billion, purchases approximately EUR 1.46 billion and personnel costs approximately EUR 235 million.

Table 1 presents the financial statements of the PKO Group for the 2018–2022 five-year period. The average net sales in that period was approximately EUR 407.8 million per year. The magnitude is significant on the scale of North Karelia: PKO's five-year net sales totalled approximately EUR 2.04 billion, purchases approximately EUR 1.46 billion and personnel costs approximately EUR 235 million.

In addition to the income statement data, other key material includes the profit distribution items paid annually (Bonuses, membership fee interest, surplus

return), which is included in Table 2. The sources are the PKO Group's financial statements for the years in question. Instead of depreciations in the income statement, this study has used the actual investments of each year, which describe the income generated by the expanding company in its environment better than the depreciation indicated in the income statement.



Table 2: PKO's direct income effect in the region of North Karelia

Income statement expenditure / profit distribution item	Share remaining in the region, %	Income remaining in the region in 2022, EUR	Average income remaining in the region in 2018–2022, EUR	Total income remaining in the region in 2018–2022, EUR
Materials and services	-	34,136,616	28,504,820	142,524,099
Materials, equipment and goods	9.5%	32,889,742	27,647,268	138,236,341
External services	70.0%	1,246,874	857,552	4,287,759
Personnel costs				
Wages, salaries and bonuses	99.0%	44,378,887	38,320,856	191,604,278
Tax withheld	-	-8,164,517	-7,050,003	-35,250,014
Other deductions	-	-4,221,927	-3,645,604	-18,228,020
Wages, salaries and bonuses - deductions = purchasing power in the region	-	31,992,443	27,625,249	138,126,245
Social security contributions (employer)	50.0%	4,972,718	4,120,523	20,602,616
Social security contributions (employee)	50.0%	2,110,963	1,822,802	9,114,010
Adding municipalities' share of taxes (estimate)	69.0%	5,633,517	4,864,502	24,322,510
Depreciation → investments instead of depreciations	80.0%	17,600,000	15,616,000	78,080,000
Other operating expenses	-	26,796,479	22,465,425	112,327,123
Facility rents	100.0%	1,348,654	1,283,565	6,417,826
Other costs	55.0%	25,447,824	21,181,859	105,909,297
Cooperative's corporate income tax, municipalities' share (estimate)	37.0%	1,650,228	1,382,561	6,912,807
Bonuses paid, membership fee interest and surplus return	100.0%	25,000,000	21,014,000	105,070,000
Total	-	149,892,964	127,415,882	637,079,410

Components of direct income effect	Income remaining in the region in 2022, EUR	Average income remaining in the region in 2018–2022, EUR	Total income remaining in the region in 2018–2022, EUR	Proportional share, %
procurement of goods and services and investments	85,616,776	72,529,570	362,647,848	56.9%
effect of municipal tax revenue	7,283,744	6,247,063	31,235,317	4.9%
effect of purchasing power of wages	31,992,443	27,625,249	138,126,245	21.7%
effect of purchasing power of co-op member benefits	25,000,000	21,014,000	105,070,000	16.5%
Total	149,892,964	127,415,882	637,079,410	100.0%

The direct income effect of PKO in the North Karelia region in 2022 was approximately EUR 150 million.



PKO's direct income effect in the North Karelia region in 2022 was approximately EUR 150 million. The average direct income effect for the 2018–2022 five-year period was EUR 127 million per year, and the sum of the direct income effects for the 2018–2022 five-year period was EUR 637 million.

Of the direct income effect, the share of PKO's purchases of goods, services and investments was on average about 57%, the share of wages paid by PKO about 22%, the share of co-op member benefits (Bonuses, membership fee interest, surplus return) about 17%, and the share of tax revenue received by municipalities (withholding taxes on wages, corporate income tax paid by PKO) about 5%.

Indirect income effect

In this study, indirect income effect refers to:

- ◆ the increase in net sales for third parties resulting from the companies in the region that supply goods and services to PKO also purchasing goods or services from other companies in the region.

In this context, purchases of goods and services are defined more broadly than that included in the income statement's definition of "materials and services": in addition to that definition, this study takes into account investments, rent, personnel-related costs (such as insurance-related service purchases), other actual operating expenses and financing expenses.

- ◆ Revenue generated by the purchasing power of PKO's personnel in companies in the region
- ◆ net sales generated by the use of Bonuses paid to co-op members, membership fee interest and surplus returns in companies in the region
- ◆ growth in net sales resulting municipalities in the region purchasing goods or services from companies in the region with the tax revenue they receive (municipalities' calculated share of the taxes on wages paid by PKO and PKO's corporate income tax)

Table 3: Indirect income effect of PKO in the North Karelia region

Income statement expenditure / profit distribution item	Indirect income effect, % of direct income effect	2022	Average 2018–2022	Total 2018–2022
Materials and services				
Materials, equipment and goods	30%	9,866,923	8,294,180	41,470,902
External services	30%	374,062	257,266	1,286,328
Personnel costs				
Purchasing power of wages, etc. in the region	67%	21,434,937	18,508,917	92,544,584
Social security contributions (employer)	30%	1,491,815	1,236,157	6,180,785
Social security contributions (employee)	30%	633,289	546,841	2,734,203
Adding municipalities' share of taxes (estimate)	30%	1,690,055	1,459,351	7,296,753
Depreciation → investments instead of depreciations	30%	5,280,000	4,684,800	23,424,000
Other operating expenses				
Facility rents	30%	404,596	385,070	1,925,348
Other costs	30%	7,634,347	6,354,558	31,772,789
Cooperative's income tax, municipalities' share (estimate)	30%	495,068	414,768	2,073,842
Bonuses paid, membership fee interest and surplus return	67%	16,750,000	14,079,380	70,396,900
PKO's total indirect income effect	-	66,055,093	56,221,287	281,106,433

Components of indirect income effect	2022	Average 2018–2022	Total 2018–2022	Proportional share, %
procurement of goods and services and investments	25,685,033	21,758,871	108,794,354	38.7%
effect of municipal tax revenue	2,185,123	1,874,119	9,370,595	3.3%
effect of purchasing power of wages	21,434,937	18,508,917	92,544,584	32.9%
effect of purchasing power of co-op member benefits	16,750,000	14,079,380	70,396,900	25.0%
Total	66,055,093	56,221,287	281,106,433	100.0%

The indirect income effect of PKO in the North Karelia region in 2022 was approximately EUR 66 million.

PKO's indirect income effects in the region are summarised in Table 3. Statistics Finland's open industry data and data from PKO have been used to calculate the indirect income effect.

Assumptions:

- ◆ of the income after taxes and social security contributions (wages, co-op member benefits), PKO employees spend about two thirds in the region
- ◆ PKO's suppliers of goods and services spend approximately 30% of the net sales they receive from PKO on their own purchases of goods and services and the expenses of their operations in the region
- ◆ Similarly, municipalities that receive tax revenue spend about 30% of their tax revenue on acquisitions from the region

The indirect income effect of PKO in the North Karelia region in 2022 was approximately EUR 66 million. The average indirect income effect for the 2018–2022 five-year period was approximately EUR 56 million per year, and the sum of the indirect income effects for the 2018–2022 five-year period was EUR 281 million.

In the following subsections, the occurrence of indirect income effects has been defined in more detail.

Indirect income effect of investments and the purchase of goods and services

In addition to purchases in the income statement, the line Other operating expenses, as well as the employees' and employer's social security contributions, have been included in the purchases of goods and services.

Statistics Finland's open industry data and data from PKO have been used to calculate the indirect income effect of investments and purchases of goods and services.

- ◆ Companies in the region that supply *goods* to PKO purchase goods and services themselves from other companies in the region at an average of 30% of the value of their net sales
- ◆ Companies in the region that provide *services* to PKO purchase goods and services themselves from other companies in the region at an average of 30% of the value of their net sales
- ◆ Companies in the region implementing PKO's *investments* purchase goods and services themselves from other companies in the region at an average of 30% of their net sales value

The indirect income effect of PKO's purchases of goods and services and investments (including

all other items in the income statement except wages, salaries and taxes) in the region was approximately EUR 25.7 million in 2022, an average of approximately EUR 21.8 million per year in 2018–2022 and a total of approximately EUR 108.8 million in 2018–2022 (Table 3).

The total direct and indirect income effect of PKO's purchases of goods and services and investments was approximately EUR 111.3 million in 2022, an average of approximately EUR 94.3 million per year in 2018–2022, and a total of approximately EUR 471.4 million in 2018–2022 (Table 4).

Indirect income effect of personnel's purchasing power

The following formula has been used to calculate the indirect income effect resulting from the purchasing power of PKO personnel, meaning the growth of the net sales of companies in the region:

- ◆ **99% of the personnel live in North Karelia.**
Criterion: Internal data produced by PKO's financial administration, based on the postal code of the address provided by the employee.
- ◆ **The average withholding rate is 18.4%.**
Criterion: Internal data produced by PKO's financial administration.
- ◆ **The employee's share of compulsory social security contributions is on average 9.5%.**
Criterion: Internal data produced by PKO's financial administration. The data have not been examined separately for each year, so the same ratio has been used for all the years examined.
- ◆ **Based on a conservative estimate, an average of 67% of the income after taxes and other charges is spent on the purchase of goods and services from North Karelia, which is reflected in the net sales of companies in the region.**
Criterion: The estimate is based on Statistics Finland's data and information received from PKO.

PKO's indirect income effect in the region through the purchasing power of the personnel's wages, salaries and bonuses was approximately EUR 21.4 million in 2022, an average of approximately EUR 18.5 million per year in 2018–2022 and a total of approximately EUR 92.5 million in 2018–2022 (Table 3).

The total direct and indirect income effect of the purchasing power of the personnel's wages, salaries and bonuses was approximately EUR 53.4 million in 2022, an average of approximately EUR 46.1 million per year in 2018–2022 and a total of approximately EUR 230.7 million in 2018–2022 (Table 4).

Indirect income effect of purchasing power of co-op member benefits

The Bonuses paid by PKO to its co-op members, the membership fee interest and the surplus return (co-op member benefits) enable their recipients to purchase goods and services, some of which results in increased net sales in companies in the region (indirect income effect).

PKO's indirect income effect in the region through co-op member benefits was approximately EUR 16.8 million in 2021, an average of approximately EUR 14.1 million per year in 2018–2022, and a total of approximately EUR 70.4 million in 2018–2022 (Table 3).

The total direct and indirect income effect of the purchasing power of co-op member benefits was approximately EUR 41.8 million in 2022, an average of approximately EUR 35.1 million per year in 2018–2022, and a total of approximately EUR 175.5 million in 2018–2022 (Table 4).

Indirect income effect of municipalities' tax revenue

One part of the indirect income effect is realised through the use of the tax revenue received by municipalities. Municipalities use the tax revenue they receive for purposes such as purchasing goods and services and making investments, some of which are from companies in the region. Municipalities' tax revenue includes both income taxes paid by PKO's personnel (calculations based on withheld taxes) and corporate tax paid by PKO based on its profit. Interpreting Statistics Finland's statistics (Statistics Finland 2023d), the municipalities of North Karelia receive approximately a 69% share of income taxes, and the state a 31% share. The municipalities receive about 37% of corporate income taxes. The calculation assumes that the region's municipalities use approximately 30% of the tax revenue they receive for purchases of goods and services and investments from the region's companies.

PKO's indirect income effect in the region through the expenditure of municipalities' tax revenue was approximately EUR 2.2 million in 2022, an average of approximately EUR 1.9 million per year in 2018–2022, and a total of approximately EUR 9.4 million in 2018–2022 (Table 3).

The total direct and indirect income effect of municipalities' tax revenue was approximately EUR 9.5 million in 2022, an average of approximately EUR 8.1 million per year in 2018–2022, and a total of approximately EUR 40.6 million in 2018–2022 (Table 4).

In 2018–2020, the gross domestic product of North Karelia was approximately EUR 5.4–5.6 billion. Although the income effect of PKO calculated above cannot be directly compared to GDP figures, the income effect generated by the cooperative is very significant on the regional scale.

Total direct and indirect income effects

The direct and indirect income effects of PKO in the North Karelia region amounted to approximately EUR 216 million in 2022, approximately EUR 184 million per year on average in 2018–2022 and a total of approximately EUR 918 million in 2018–2022.

In 2018–2020, the gross domestic product of North Karelia was approximately EUR 5.5 billion per year (Statistics Finland 2023a). Although the income effect of PKO calculated above cannot be directly compared to GDP figures, the income effect generated by the cooperative is very significant on the regional scale.

PKO's employment effects

Direct employment effect

Direct employment effect refers to the total person-years represented by PKO's part-time and full-time employees. The number of employees has increased in each year of the review period 2018–2022. PKO employed 1,260 people in 2018 and 1,603 people in 2022. On average, PKO employed 1,424 people during the review period. As some of the staff are part-time, as is typical in the retail industry, it makes sense to examine PKO's employment effect not only in terms of the number of personnel but also in terms of person-years. Both types of data are shown in Table 5.

Table 4: Total direct and indirect income effect of PKO in the North Karelia region

Income statement expenditure / profit distribution item	2022	Average 2018–2022	Total 2018–2022
Materials and services			
Materials, equipment and goods	42,756,665	35,941,449	179,707,243
External services	1,620,936	1,114,817	5,574,087
Personnel costs			
Purchasing power of wages, etc. in the region	53,427,380	46,134,166	230,670,829
Social security contributions (employer)	6,464,533	5,356,680	26,783,401
Social security contributions (employee)	2,744,252	2,369,643	11,848,213
Adding municipalities' share of taxes (estimate)	7,323,572	6,323,852	31,619,262
Depreciation → investments instead of depreciations	22,880,000	20,300,800	101,504,000
Other operating expenses			
Facility rents	1,753,251	1,668,635	8,343,174
Other costs	33,082,172	27,536,417	137,682,086
Cooperative's income tax, municipalities' share (estimate)	2,145,296	1,797,330	8,986,649
Bonuses paid, membership fee interest and surplus return	41,750,000	35,093,380	175,466,900
PKO's total direct and indirect income effect	215,948,057	183,637,169	918,185,843

Income effect components	2022	Average 2018–2022	Total 2018–2022	Proportional share, %
procurement of goods and services and investments	111,301,809	94,288,440	471,442,202	51.3%
effect of municipal tax revenue	9,468,868	8,121,182	40,605,912	4.4%
effect of purchasing power of wages	53,427,380	46,134,166	230,670,829	25.1%
effect of purchasing power of co-op member benefits	41,750,000	35,093,380	175,466,900	19.1%
Total	215,948,057	183,637,169	918,185,843	100.0%

The direct and indirect income effects of PKO in the North Karelia region amounted to approximately EUR 216 million in 2022 and a total of approximately EUR 918 million in total in 2018–2022.



Table 5: PKO's direct employment effect in the region of North Karelia

Employment effect	2022	2021	2020	2019	2018	Average 2018–2022	Total 2018–2022
Personnel	1,603	1,445	1,431	1,379	1,260	1,424	–
Direct employment effect in person-years	1,116	1,021	982	907	829	971	4,855
Percentage of people living in North Karelia	99%	99%	99%	99%	99%	99%	99%
Direct employment effect in North Karelia (person-years)	1,105	1,011	972	898	821	961	4,807



PKO's direct employment effect in the North Karelia region in 2018–2022 averaged approximately 961 person-years per year and a total of approximately 4,807 person-years in the entire five-year period.

The regional restriction of the employment effect data is based on the postal code of the address provided by the employees to PKO. Based on this, approximately 99% of PKO's personnel live in the region (PKO's internal data).

During the 2018–2022 reference period, the number of annual person-years increased from 829 to 1,116. PKO's direct employment effect in the North Karelia region in 2018–2022 averaged approximately 961 person-years per year and a total of approximately 4,807 person-years in the entire five-year period.

Indirect employment effect

In this report, the direct employment effect refers to the number of persons directly employed by PKO, converted into person-years.

Indirect employment effect refers to

- 1. the calculated number of employees (in person-years) that companies selling goods and services have to hire to**
 - ◆ deliver the goods and services purchased by PKO
 - ◆ implement the investments made by PKO
 - ◆ deliver the goods and services purchased by PKO's employees with their earned income from PKO
 - ◆ deliver the goods and services purchased by PKO's co-op members through Bonuses, membership fee interest and surplus returns received from PKO
- 2. the employment effect of tax revenue received by municipalities in municipal organisations**
 - ◆ the calculated municipal employment effect due to corporate income taxes and property taxes received by municipalities from PKO
 - ◆ The calculated municipal employment effect of taxes paid by PKO's employees on their earned income from PKO. These calculations are based on the total amount of tax withholding data from PKO's accounting.

Indirect employment effects refer to employment effects outside the employment of PKO, as the personnel employed by PKO are counted towards the direct employment effect.



Co-op membership benefits (Bonuses and return of surplus) received by PKO's co-op members in relation to PKO's purchases are exempt from tax (Income Tax Act 1992/1535, section 53), so they also do not generate tax revenue for the public sector. Interest on the membership fee is considered taxable capital income, but this has not been counted as income for municipalities that would have an effect on employment.

The employment effect assessment's calculations for companies are based on the industry-specific net sales/employee data produced by Statistics Finland. Parts of the calculations use the net sales/employee data at the regional level (North Karelia), while other parts use the national industry-specific data, as not all data are available as region-specific figures. If the use of a single industry is unsuitable for the context, the average of several or all industries has been used instead.

In this study, the following net sales/employee data have been used to calculate the indirect employment effect (Table 6). The data have been obtained from Statistics Finland's Toimiala Online service (Statistics Finland 2023b). The industry classification codes are in accordance with the current Standard Industrial Classification TOL 2008 (Statistics Finland 2023c).

For municipalities, the employment effect assessment is based on the ratio of *municipal tax revenue per employee* in 2022. The average tax revenue of the municipalities in North Karelia (excluding central government transfers) was EUR 3,744.16 per capita in 2022, and there were 163,281 residents in North Karelia at the end of 2021 (Association of Finnish Local and Regional Authorities 2023). This brings the tax revenue of

Table 6. Data used to calculate the indirect employment effect

Income statement item / profit distribution item (share allocated to the region)	Net sales EUR/ employee 2021	Industry selection / Other criteria
Materials, equipment and goods	131,000	Average of 19 industry medians, Finland as a whole (industry size not weighted)
External services	92,300	Average of 22 service industry medians, Finland as a whole (industry size not weighted)
Purchasing power of wages, salaries and bonuses	271,700	average of all industries (TOL 00000) in North Karelia
Social security contributions (employer's share) and social security contributions (employee's share)	271,700	average of all industries (TOL 00000) in North Karelia
Municipalities' share of taxes on wages	42,750	municipal tax revenue per employee in the municipalities of North Karelia
Investments	290,500	average for the building construction industry (TOL 41) in North Karelia
Facility rents	65,400	average for services to buildings and landscape activities industry (TOL 81) in North Karelia
Other costs	271,700	average of all industries (TOL 00000) in North Karelia
Corporate income tax paid by PKO, municipalities' share	42,750	municipal tax revenue per employee in the municipalities of North Karelia
Bonuses paid, membership fee interest and surplus return	271,700	average of all industries (TOL 00000) in North Karelia

the municipalities of North Karelia to about EUR 611,350,000 per year. In 2021, the region's municipalities had a total of approximately 14,300 employees (municipalities and joint municipal authorities) (Local Government and County Employers KT, 2023). The tax revenue received by municipalities was therefore approximately EUR 42,750 per employee. At first glance, the ratio seems low, but in addition to tax revenue, municipalities naturally also receive funding such as central government transfers and income from fees.

Municipalities' tax revenue per employee has not been determined separately for each year, so the same ratio has been used for all years in the review period. This is sufficient for the principle of materiality, as the differences are evened out by annual fluctuations. For example, if the difference

between the data and the actual figure were 10%, the effect on the overall indirect employment effect of PKO would be approximately 3 people, or 0.5%.

The indirect employment effect of taxes paid by PKO in municipal organisations can be calculated as follows:

$$\text{indirect employment effect in municipalities} = \frac{\text{taxes received by municipalities from PKO (EUR)}}{\text{municipal tax revenue per employee}}$$

Table 7: PKO's indirect employment effect in the region of North Karelia

Income statement expenditure / profit distribution item	2022			Direct income effect in the region (EUR)
	Direct income effect in the region (EUR)	Net sales estimate EUR/employee	Indirect employment effect in the region (person-years)	
Materials and services				
Materials, equipment and goods	32,889,742	131,000	251.1	27,647,268
External services	1,246,874	92,300	13.5	857,552
Personnel costs				
Purchasing power of wages, etc. in the region	21,434,937	271,700	78.9	18,508,917
Social security contributions (employer)	4,972,718	271,700	18.3	4,120,523
Social security contributions (employee)	2,110,963	271,700	7.8	1,822,802
Adding municipalities' share of taxes (estimate)	5,633,517	42,750	131.8	4,864,502
Depreciation → investments instead of depreciations	17,600,000	290,500	60.6	15,616,000
Other operating expenses				
Facility rents	1,348,654	65,400	20.6	1,283,565
Other costs	25,447,824	271,700	93.7	21,181,859
Cooperative's income tax, municipalities' share (estimate)	1,650,228	42,750	38.6	1,382,561
Bonuses paid, membership fee interest and surplus return ^(*)	16,750,000	271,700	61.6	14,079,380
Total indirect employment effect	-	-	776.4	-

PKO's indirect employment effect in the North Karelia region in 2018–2022 averaged approximately 660 person-years and a total of approximately 3,298 person-years in the entire five-year period.

Average 2018–2022		Total 2018–2022		
Net sales estimate EUR/employee	Indirect employment effect in the region (person-years)	Direct income effect in the region (EUR)	Net sales estimate EUR/employee	Indirect employment effect in the region (person-years)
131,000	211.0	138,236,341	131,000	1055.2
92,300	9.3	4,287,759	92,300	46.5
271,700	68.1	92,544,584	271,700	340.6
271,700	15.2	20,602,616	271,700	75.8
271,700	6.7	9,114,010	271,700	33.5
42,750	113.8	24,322,510	42,750	568.9
290,500	53.8	78,080,000	290,500	268.8
65,400	19.6	6,417,826	65,400	98.1
271,700	78.0	105,909,297	271,700	389.8
42,750	32.3	6,912,807	42,750	161.7
271,700	51.8	70,396,900	271,700	259.1
-	659.6	-	-	3298.1

(* For items marked with an asterisk (wages, co-op member benefits), the employment effect is considered to be caused by the indirect income effect, meaning the share of employees' salaries and co-op members' benefits that are used within the region. Assumed ratio 2/3.

Table 8: Total direct and indirect employment effect of PKO in the North Karelia region

Employment effect	2022	Average 2018–2022	Total 2018–2022
Direct employment effect in North Karelia	1,105	961	4,807
Indirect employment effect in North Karelia	776	660	3,298
Total direct and indirect employment effect	1,881	1,621	8,105

In total, the employment effect of PKO in the North Karelia region (both direct and indirect) was about 1,881 person–years in 2022 and about 8,105 person–years in the 2018–2022 five–year period.

Taxes paid by PKO have been calculated based on the corporate income taxes according to the income statement, of which the share pertaining to the region has been estimated. Property taxes are included in the income statement within the lump sum of other operating expenses, so their employment effect is included in the employment effect of such expenses in companies and is therefore not reflected in this calculation as an employment effect in municipalities. The number of municipal employees for each year is presented as the same number, although in reality it may vary slightly from year to year.

In 2022, PKO’s indirect employment effect in the region was approximately 776 person–years (Table 7). PKO’s indirect employment effect in the North Karelia region in 2018–2022 averaged approximately 660 person–years, and a total of approximately 3,298 person–years in the entire five–year period.

The indirect employment effects created by PKO in North Karelia are about two thirds of the direct employment effect. Table 8 shows both the indirect and direct employment effects.

In total, the employment effect of PKO in the North Karelia region (both direct and indirect) was about 1,881 person–years in 2022 and about 8,105 person–years in the 2018–2022 five–year period.

Other regional effects of PKO

Collaboration with companies and educational institutions

Due to the scale of its operations, PKO plays a particularly important role as a sales channel for the products of companies in the region. Many North Karelian companies that first started as local companies have been able to start growing and expand elsewhere in Finland after gaining experience as a partner of PKO.



PKO has developed the Työtä Pohjois-Karjalasta (“Work from North Karelia”) brand, which can be used by companies in their products manufactured or processed in the region that are available in grocery stores’ product selections. PKO is the only grocery trade operator that has marked all North Karelian products in all its stores with this label. This makes it easy to make a choice supporting local business (Kauppalehti 2018). The customer relationship of a large regional cooperative is a good reference that brings credibility to a small local company when communicating with other buyers. Several companies in the region have started to grow and have expanded from the local and regional level to the rest of Finland, as well as to exports, having first been coached by the specialists responsible for PKO’s procurement. For example, Porokylän Leipomo Oy, operating in Nurmes and Lieksa, has grown into a national bakery product supplier with net sales of EUR 20 million (STT Info, 30 March 2022). PKO’s role as a reference buyer has been significant, especially in the early stages of growth.

For example, Porokylän Leipomo Oy, operating in Nurmes and Lieksa, has grown into a national bakery product supplier with net sales of EUR 20 million. PKO’s role as a reference buyer has been significant, especially in the early stages of growth.

PKO interacts with educational institutions in the region in many ways – and the collaboration benefits both parties. Numerous young people studying in different fields do internships at PKO locations, ranging from basic tasks to more demanding managerial tasks. For many, the internship experience has served as a springboard for applying for positions in the retail or hospitality industry, either in PKO or elsewhere. Without the internship opportunities offered by PKO, many would have had to seek internships outside the region. Of course, young people are also employed in normal employment relationships – part-time work is well suited to the life situation of many students.

PKO has been able to develop its own operations with the aid of Karelia University of Applied Sciences and the advanced students of the University of Eastern Finland by commissioning a wide range of studies and surveys as theses. PKO staff members also study continuously, completing bachelor's or master's degrees, other such qualifications, or otherwise complementing their education. Naturally, PKO also has close cooperation with the Riveria Vocational School through programmes such as students' work placements.

Today, universities obtain a significant part of the resources they need for their activities from sources other than the state budget. PKO made its contribution by supporting the development of business education at the University of Eastern Finland in 2017 with a significant donation of EUR 200,000. In total, companies donated EUR 7,000,000 for this purpose. With the support, the University of Eastern Finland also develops its research and teaching, which also concern cooperatives (Pellervo 2017; PKO 2017). In 2022, PKO donated EUR 205,000 to the University of Eastern Finland, which was allocated to the field of business studies.

Collaboration in public construction

A good example of close cooperation with the public sector is the parking facility of 393 parking spaces under the marketplace in central Joensuu, which was completed in the autumn of 2018. PKO was responsible for the construction of the parking facility, and the City of Joensuu for the design and construction of the market square's aboveground structures. Without the cooperative's private funding, the implementation of the market's parking facility, which had long been planned, would have had an uncertain future or might not have been built at all. Similarly, in the spring of 2021, the P-Asemaparkki parking facility, which serves both passenger traffic and Original Sokos Hotel Kimmel, was opened at Joensuu railway station. In addition, PKO built a new commercial building, the Joensuu Market Hall,

to replace the old market hall in Joensuu's market square. The new building was opened in June 2023.

The cooperation between PKO and the City of Lieksa in 2018 was recognised by accepting it as a participant in a European innovation competition. The City of Lieksa and PKO were accepted as the only representative of Eastern Finland to participate in the competition, which recognised social projects in categories such as quality of life and communality.

The Lieksa Sports Hall was included because it was an example of a new kind of cooperation between the private and public sectors. PKO financed and built the hall, and the city first leases it and later buys it. The City of Lieksa has leased the hall built by PKO with a floor area of approximately 2,500 m² with a 20-year lease agreement. After the lease expires, the hall will be transferred to the city's ownership for a purchase price of EUR 200,000.

PKO supported the construction of the Mehtimäki ball game sports centre, opened in Joensuu in 2022, with a contribution of EUR 500,000. The total cost estimate of the sports centre's construction was EUR 10.3 million. The financing of the sports centre was assisted by companies in the region raising EUR 2.7 million in funding.

PKO allocates approximately EUR 1.2 million annually from the proceeds of its operations to youth employment, as well as to support sports,

PKO made its own contribution by supporting the development of business education at the University of Eastern Finland in 2017 with other cooperative companies in the region. PKO donated EUR 200,000. In total, companies donated EUR 7,000,000 for this purpose.

culture and various non-profit organisations. The cooperative's most visible act of responsibility is hiring summer employees. In the summer of 2023, PKO recruited 1,100 young people, 100 of whom were special-needs young people and their assistants. The actual need for temporary employees during the summer holidays is about 300 people, but in accordance with PKO's strategic decision, the aim is to offer young people a lot of summer jobs so that as many people as possible can both earn money and gain experience of working life.

PKO takes care of the vitality of the region's cultural offering by extensively supporting events such as Kihaus in Rääkkylä, Lieksa Brass Week in Lieksa, Nurmes Summer Music in Nurmes, and Vekararock and Ilosaarirock in Joensuu. PKO also organises and participates as a co-organiser in several musical and cultural events around the region, such as Koli Jazz in Lieksa and Osuuskaupparock in Joensuu.

Experience of decision making in a large organisation

The cooperative also influences its operating environment in many ways that are not immediately obvious. One of the characteristics of cooperative societies is the participation of their members in decision making. PKO has a typical management

PKO allocates approximately EUR 1.2 million annually from the proceeds of its operations to support various non-profit organisations.

structure for a large regional cooperative: the members elect a representative body that elects the Supervisory Board, and the Supervisory Board, in turn, elects an Executive Board that makes business decisions with the management. By assembling an electoral association, co-op members can nominate candidates they like for the Council of Representatives election and stand as candidates themselves. Over the decades, many members of the cooperative have taken part in PKO's management structure and gained experience in the decision making of a large organisation – some have also had the opportunity to influence the decision making of the entire cooperative group at the national level. This experience has had positive knock-on effects on the region's business life and societal activities.



PKO will continue to have an effect in the future

As the purpose of the cooperative is not to make the maximum profit, and the profit does not go to a small number of shareholders, the money spent at PKO's locations goes back to their own region. Through salaries, taxes, investments, local purchases, affordable prices, support for NGOs and sports clubs, hiring summer employees, and rewarding co-op members, the money remains in the same region.

Business competitiveness, profitability and adequate preparedness buffers are essential for the continuity of operations. When the business is profitable, PKO can fulfil not only its business role but also its role as a member community, which means working for the common good. Profitable business enables benefits such as Bonuses paid to co-op members, a payment method benefit, competitive prices and surplus returns.

Only a profitable company can invest in renovations for its locations and make investments that increase the vitality of the region. Actions for the benefit of the environment and personnel are also possible only when the company is profitable.

PKO is the most widely owned company in the region, as 9 out of 10 households are PKO's co-op members. As it stands, a consumer cooperative owned by the locals is a stable and profitable company that cannot be sold abroad. The starting point for the planning of operations is to allow the cooperative's operations to continue for at least the next 100 years. PKO will therefore continue to operate in accordance with its mission in the coming years, which is to make North Karelia an even better place to live. The region will thus benefit in many ways both directly and indirectly from the operations of PKO, now and in the future.

As the purpose of the cooperative is not only to make a profit, and the profit does not go to a small number of shareholders, the money spent at PKO's locations largely goes back to their own region. Through salaries, taxes, investments, local purchases, affordable prices, support for NGOs and sports clubs, hiring summer employees, and rewarding co-op members, the money remains in the same region.

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Regional effects of the Northern Karelia Cooperative Society

This study describes the social effects of the Northern Karelia Cooperative Society (Pohjois-Karjalan Osuuskauppa, PKO) in the region of North Karelia mainly through economic and employment effects, but also more broadly through perspectives such as the cooperation between businesses, municipalities and educational institutions. As a large operator, PKO is a regionally significant employer, both directly and indirectly. PKO's purchases of goods and services, construction and other investments, as well as wage expenditure, generate essential income streams for the region's businesses and people, and generate tax revenue for the region's municipalities. Cooperation with municipalities has enabled or accelerated public construction projects in different parts of the region. Long-term cooperation with educational institutions in the region at different levels of education has been beneficial in many ways for all parties.

The study has calculated the direct and indirect income effect of PKO in the region in 2022 to be approximately EUR 216 million. In the same year, the direct and indirect employment effect of PKO in the region was about 1,880 person-years. During the five-year review period, the trend has been upward for both effects.

