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WOOD FOR THE FUTURE: INTEGRATING SUSTAINABILITY ACROSS INDUSTRIES

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TRENDS AND MAIN CHALLENGES IN THE WOOD INDUSTRY IN SLOVENIA

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01 Market conditions are constantly changing:

- rapid technological development,
- changes in legislation, and
- environmental requirements.

→ direct **impact on the activities of companies** and the functioning of the entire economy.

02 In **Slovenia**, the wood industry represents an important part of the Slovenian economy.

03 Numbers:

- **3,500** companies operate in this sector,
- employing about **12,000** people.

The sector has experienced **significant growth and development in recent years.**

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04 The **goal** of this paper is to **present the situation** in the Slovenian wood industry based on some economic indicators and to analyse possible measures to improve the situation.

05 Examination of some **economic and financial indicators** in the Slovenian wood industry in relation to modern development trends in the areas of

- sustainability,
- digitalisation, and
- technological development.

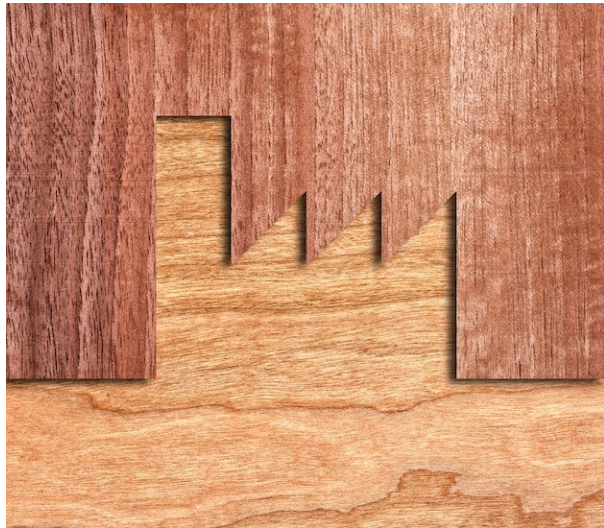
06 For ensuring the **competitiveness and long-term development** of the Slovenian wood industry (and broader), it is important to know the current state and the future trends, which present the main challenges for future development of the sector.

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- ☐ The research was based on the search and analysis of data from official statistical databases and reports
 - ☐ We calculated some **key performance indicators** of the Slovenian wood industry.
 - ☐ An **analysis of trade** was also carried out, including exports, imports, and trade shares by economic group.
 - ☐ **SWOT analysis** in two key phases:
 - ☐ Creation of a SWOT matrix
 - ☐ Creation of the best combinations of strategies
- based on a review of relevant sources

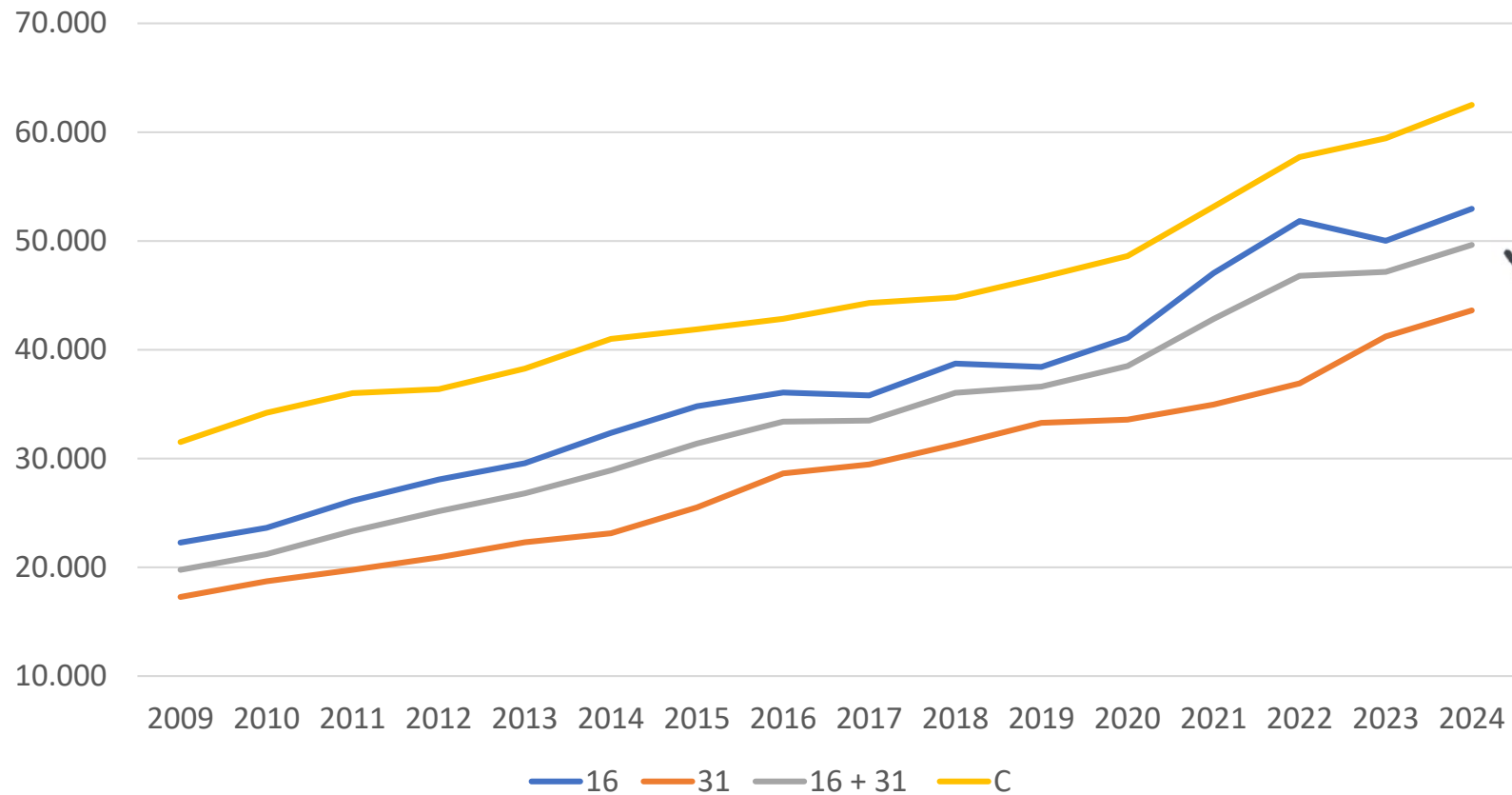


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Graph 1: Value added per employee

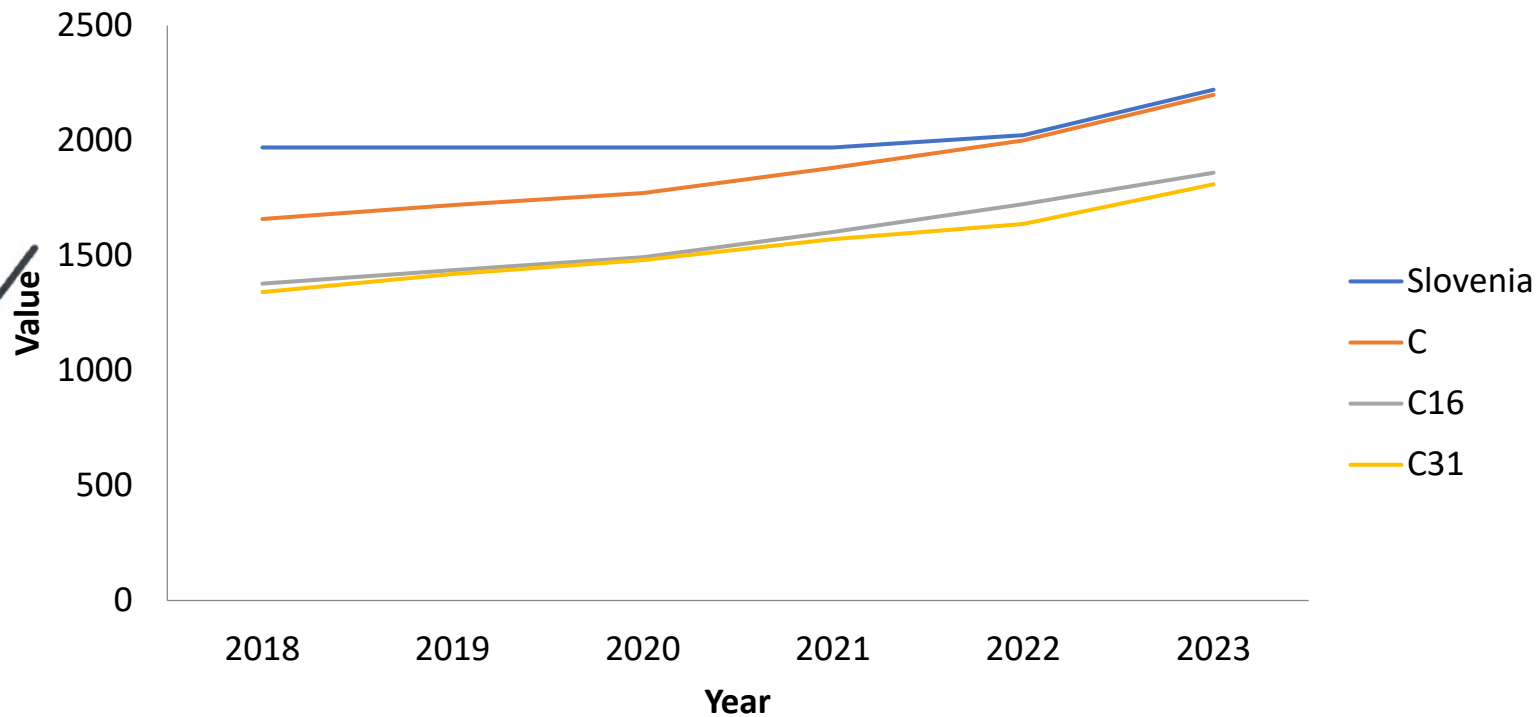


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Graph 3: Average gross salary for the period in Slovenia

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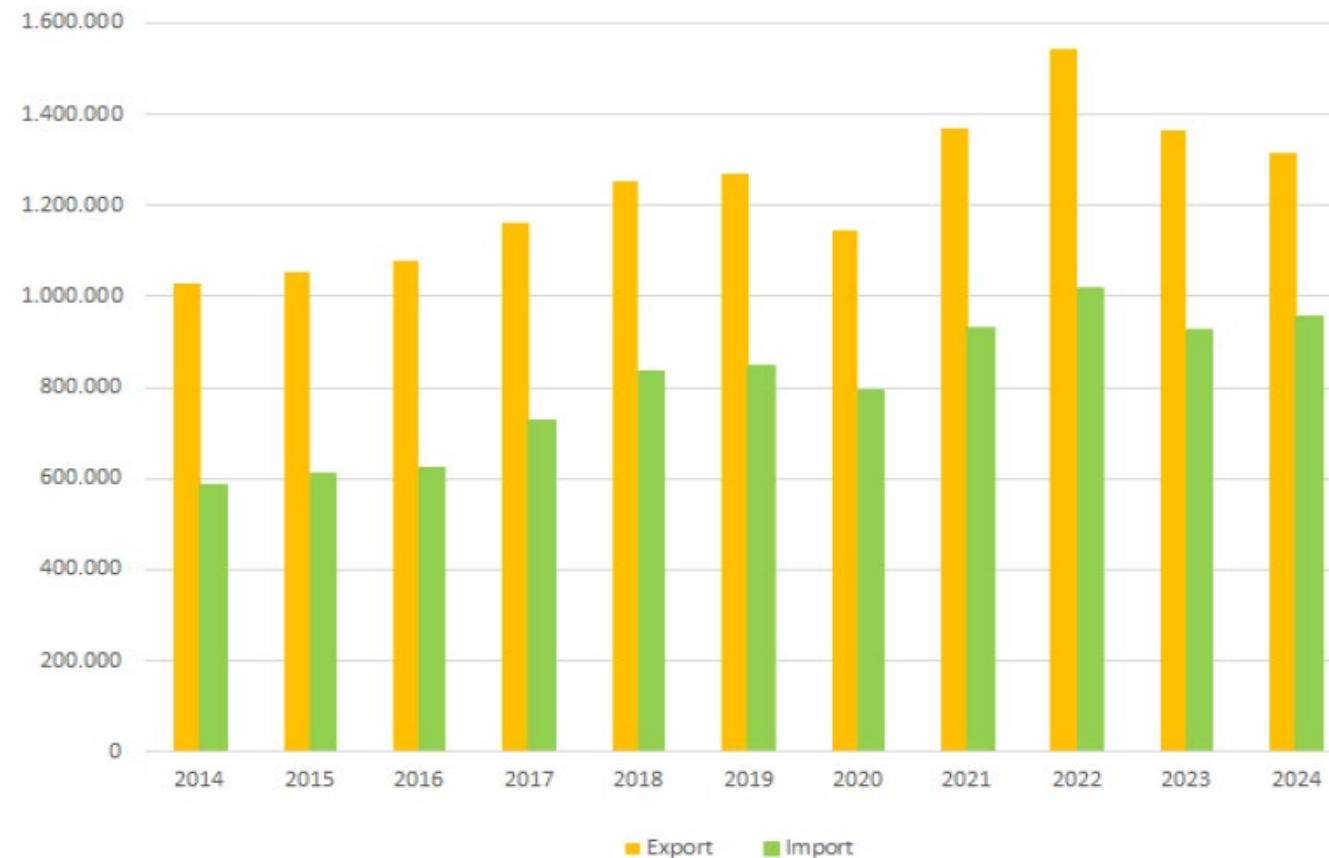
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Trade of goods (wood industry)

- share sales on the foreign market in the structure of net sales revenue amounted to **50.2%**.
- The most important export and import markets for wood and furniture products were the European countries (**Germany, Austria, Italy, Croatia**) and, albeit to a lesser extent, China and the USA.



Graph 4: Goods exchange by product activity in 000€ for C16+C31

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Table 1: Comparison of the geographical dispersion of exports by product activity in 2024 by country

rang	C16	Export (€)	C31	Export (€)	C16+31	Export (€)
1	Italy	206.723.220	Germany	102.885.291	Germany	167.922.498
2	Austria	123.661.922	Austria	45.886.159	Italy	252.356.838
3	Germany	65.037.207	Italy	45.633.618	Austria	169.548.081
4	Croatia	107.153.878	USA	11.755.400	Croatia	156.727.885
5	Switzerland	28.775.551	Croatia	49.574.007	France	38.297.662
6	France	20.809.136	UK	12.300.130	UK	18.871.565
7	Slovakia	9.522.793	France	17.488.526	USA	16.588.052
8	UK	6.571.435	Switzerland	7.587.281	Slovakia	19.861.252
9	USA	4.832.652	Slovakia	10.338.459	Switzerland	36.362.832
10	Czech Republic	5.006.669	Czech Republic	21.931.503	Czech Republic	26.938.172

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Table 2: Comparison of the geographical dispersion of product activity imports in 2024 by country

rang	C16	Import (€)	C31	Import (€)	C16+31	Import (€)
1	Austria	156.725.937	Germany	92.201.757	Austria	188.627.983
2	Germany	68.128.944	Italy	49.166.521	Germany	160.330.701
3	Croatia	55.774.961	China, LR	33.636.363	Italy	103.392.113
4	Czech Republic	41.318.873	Austria	31.902.046	Croatia	76.488.768
5	Italy	54.225.592	Serbia	24.026.675	Czech Republic	44.246.485
6	BiH	32.527.024	BiH	31.404.511	BiH	63.931.535
7	Hungary	14.938.065	Croatia	20.713.807	Serbia	39.812.030
8	Serbia	15.785.355	Slovakia	6.425.539	China, LR	42.740.674
9	China, LR	9.104.311	Czech Republic	2.927.612	Hungary	14.938.065
10	Macedonia, NJR	190.918	Estonia	212.561	Macedonia, NJR	190.918

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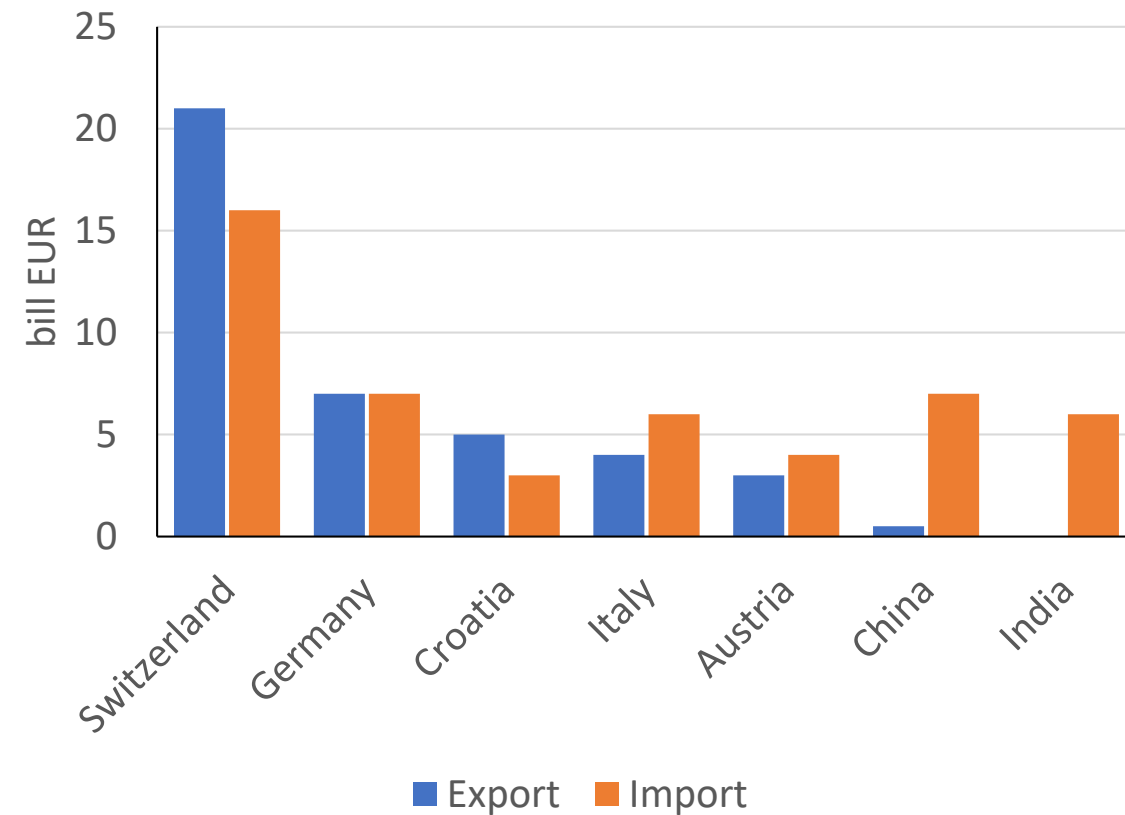
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Trade in goods (in SLO)

- ❑ Slovenia's foreign trade in goods increased slightly in 2024.
- ❑ The most important product group in exports and imports was **chemical products**.
- ❑ The most important **export markets** were: **Switzerland, Germany, Croatia, Italy, and Austria**.
- ❑ The most important **import markets** were: **Switzerland, Germany, China, India, and Italy**.



Graph 5: Foreign trade in goods - Slovenia

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Table 3: SWOT matrix of the Slovenian wood processing industry (adapted from (Kropivšek et al., 2023))

STRENGTHS

- Availability of raw materials
- Enabling the **circular economy**
- Potential for added value in products
- Connection/**synergy with other industries**
- Impact on **rural development** and the preservation of tradition
- Innovation and market potential
- Potential for new jobs
- (Established) market and customer trust

OPPORTUNITIES

- Recognition of wood as a strategic raw material
- **National/EU incentives**
- Development of a digital society
- **Environmental awareness of the market and customers**
- Purchasing power in the market (SLO, EU)
- **Legal opportunities** (e.g. green public procurement; packaging waste management, etc.)

WEAKNESSES

- Failure of certain value chains
- **Technological obsolescence and the amount of investment needed in technology**
- The amount of investment required in R&D and promotion
- **Poorer availability of (skilled) labor**
- Cost inefficiency
- The complexity of product quality management
- Poor management of supply logistics

THREATS

- Competition in search for market channels for high value-added products
- **Bureaucratic obstacles**
- Changes in the market (emergence of competition, price increases, etc.)
- **Legal risks** (e.g. regarding pollution from production...)

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Trends and challenges

- ☐ global trends of sustainable development and digital transformation
- ☐ global social and economic development
- ☐ new digital technologies and climate goals on EU level (European Green Deal).
- ☐ dual transition in the development of the Slovenian wood industry, including:
 - ☐ political and strategic,
 - ☐ technological, and
 - ☐ design and human resources perspective.



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POLITICAL AND STRATEGIC
PERSPECTIVE

- ❑ The development of the industry is influenced by **strategic EU documents** such as Next Generation Europe, which lead to initiatives:
 - ❑ the New European Bauhaus
 - ❑ Ready for 55.
- ❑ In Slovenia, **the wood industry is a strategically important sector** (included in the Slovenian Industrial Strategy 2021–2030).
- ❑ **Result:**
 - ❑ better planning, a systematic approach, and state financial support for Slovenian wood industry.

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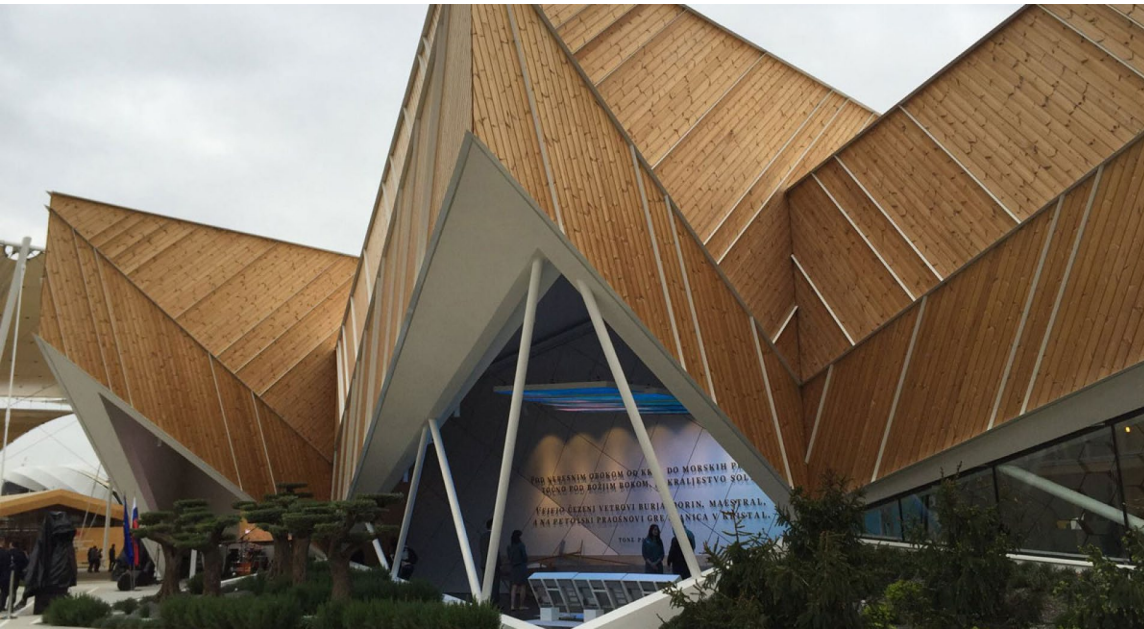
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TIMBER CONSTRUCTIONS

- ☐ Timber construction is a key trend in **sustainable development**.
- ☐ Recent research shows that **Slovenians are increasingly aware of climate change**.



- ☐ Demand for timber materials is expected to grow, **especially for larger, complex buildings**

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MODERNIZATION AND DIGITALIZATION

- ❑ companies are **modernising and digitalising their processes** = the digital transformation of the industry is taking place
- ❑ Direction: **smart factories** with all technologies (like 3D printing, robotics, machine learning, big data, virtual and augmented reality and artificial intelligence) and new aspects of **Industry 5.0** concepts.



❑ Goal:

- ❑ more efficient processes,
- ❑ improved product quality and
- ❑ sustainable production.

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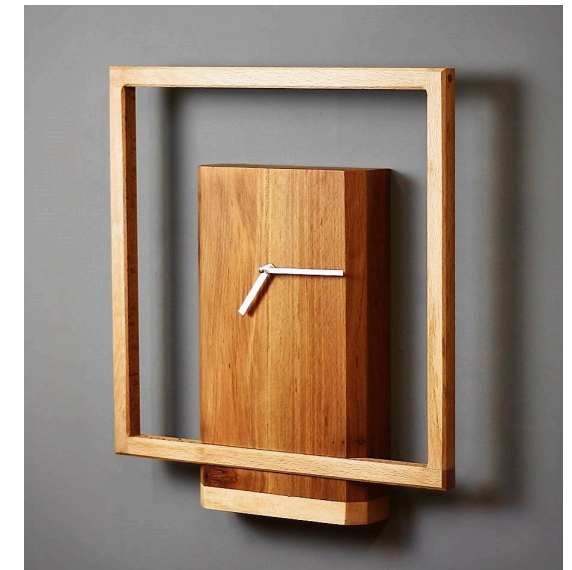
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PERSONALIZED, INNOVATIVE AND AESTHETIC PRODUCTS

- ❑ Modern consumers demand **personalised, innovative, and attractive, well designed products**, pushing companies to be adaptable with **shorter production cycles** and **fast responses** to demand changes.
- ❑ **Design** is a key competitive advantage



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NEW KNOWLEDGE AND EXPERTISE

- ❑ growing need for **new knowledge and skills**
- ❑ **role of education** in improving performance and increasing value added per employee



- ❑ **Employee education strongly impacts company performance—**
higher numbers of tertiary-educated staff boost revenue and VA/e
- ❑ This shows that **investing in higher education is key to long-term productivity and financial growth** in the sector.



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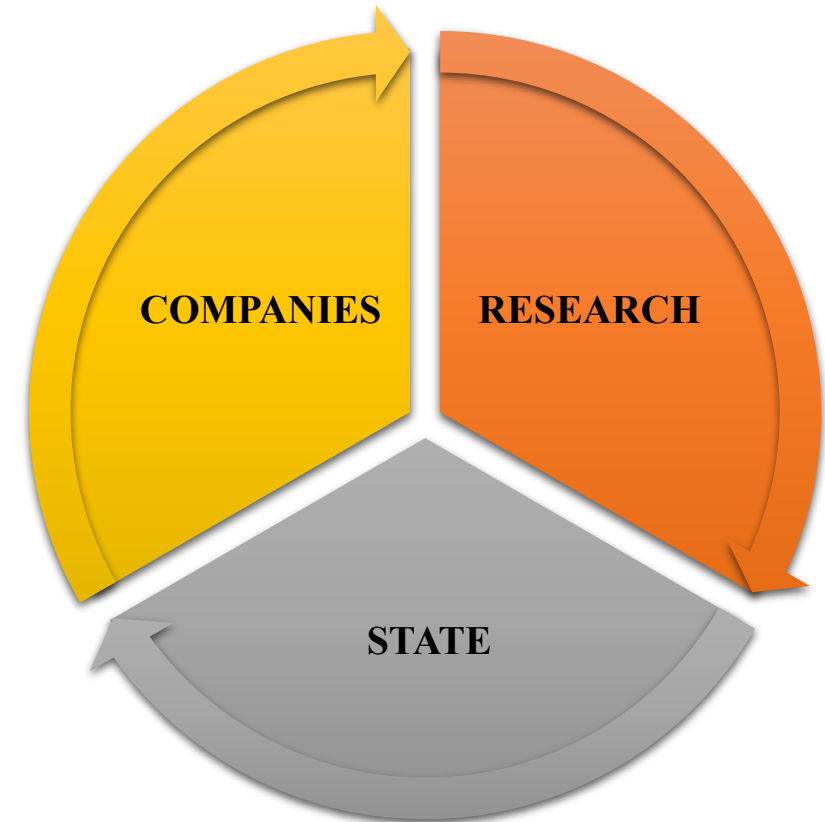
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COOPERATION BETWEEN COMPANIES, RESEARCH INSTITUTIONS AND THE STATE

- ☐ is **vital**, especially for developing skills needed in green and digital transitions.
- ☐ **The state needs to:**
 - ☐ modernise **educational programmes**
 - ☐ promote **lifelong learning**
 - ☐ speed up **implementing European directives** and
 - ☐ **offer financial support** to companies investing in sustainable and digital solutions.



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The results of a quantitative analysis of the wood industry in Slovenia **point to an improvement in the industry's key financial indicators.**

2

The industry is growing in terms of **revenue, value added per employee and labour productivity.**

3

Trade is also increasing and shows a significant structural shift in destinations, whereby it is particularly important that the **share of exports is increasing.**

4

The wood industry **has numerous advantages** that we must maintain and strengthen in our further development and, above all, it must utilise its **opportunities.**

5

Slovenian wood processing companies must recognise and follow the most **important global trends.**

6

These are **sustainable development, digitalisation and automation.**

7

They must also take into account **consumer demands for modern design and personalised products.**

8

Companies must **modernise processes, adopt Industry 4.0 and 5.0 technologies, upskill employees, and innovate products and services.**



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THANK YOU!