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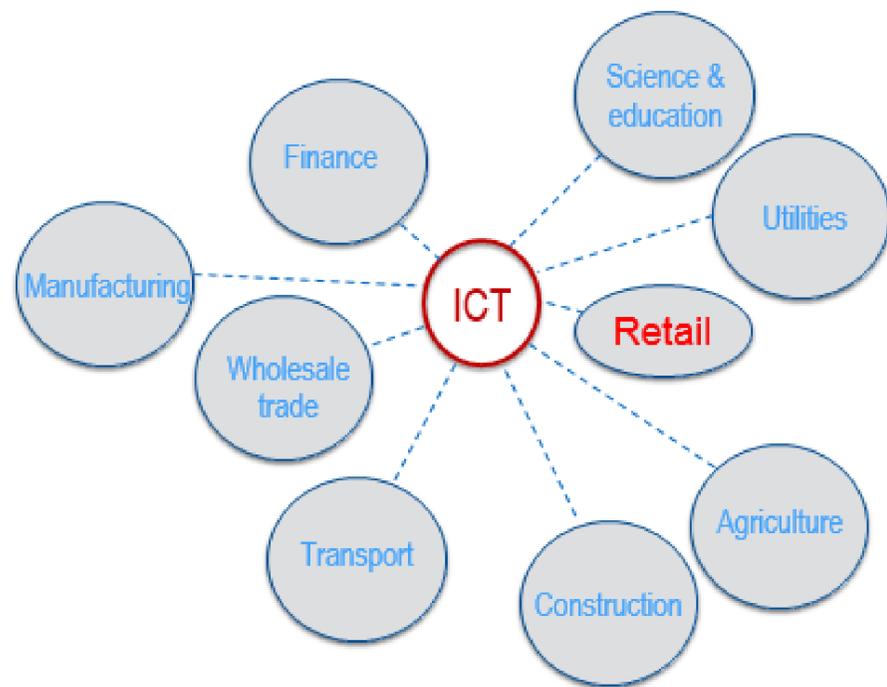
# **EFFECTS OF INFLUENCE OF ECONOMIC AND TECHNOLOGICAL DEVELOPMENT OF IT SEGMENTS ON DIGITAL TRANSFORMATION OF RETAIL TRADE**

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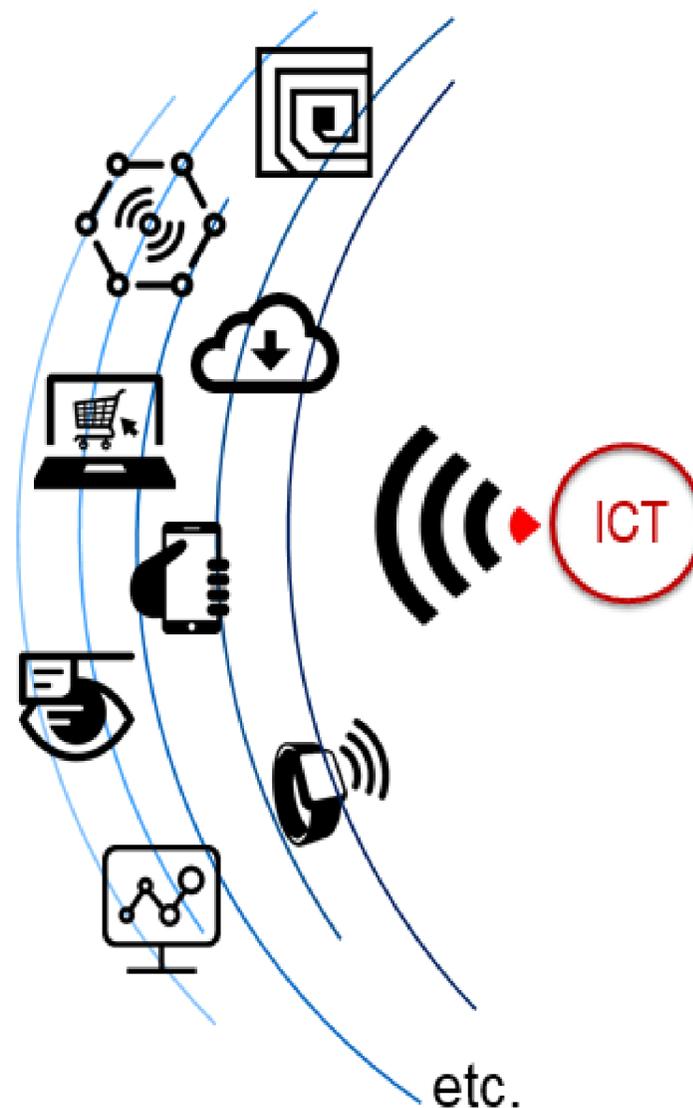
# TOPICALITY RESEARCH QUESTION



- The **ICT sector** forms the infrastructure for digital transformation and act as the **core element** of the digital economy
- Along with the spread of digital technology, the **dependence** of different economy industries on the ICT sector **increases**
- The role of the ICT sector is associated with **two channels of influence**: firstly, with the development of **the latest advanced technologies** and, secondly, with the **spread of existing innovations** in other sectors of the economy.
- A particularly profound **effect** can be observed in **high-tech** or **consumer-oriented** segments

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**Retail**

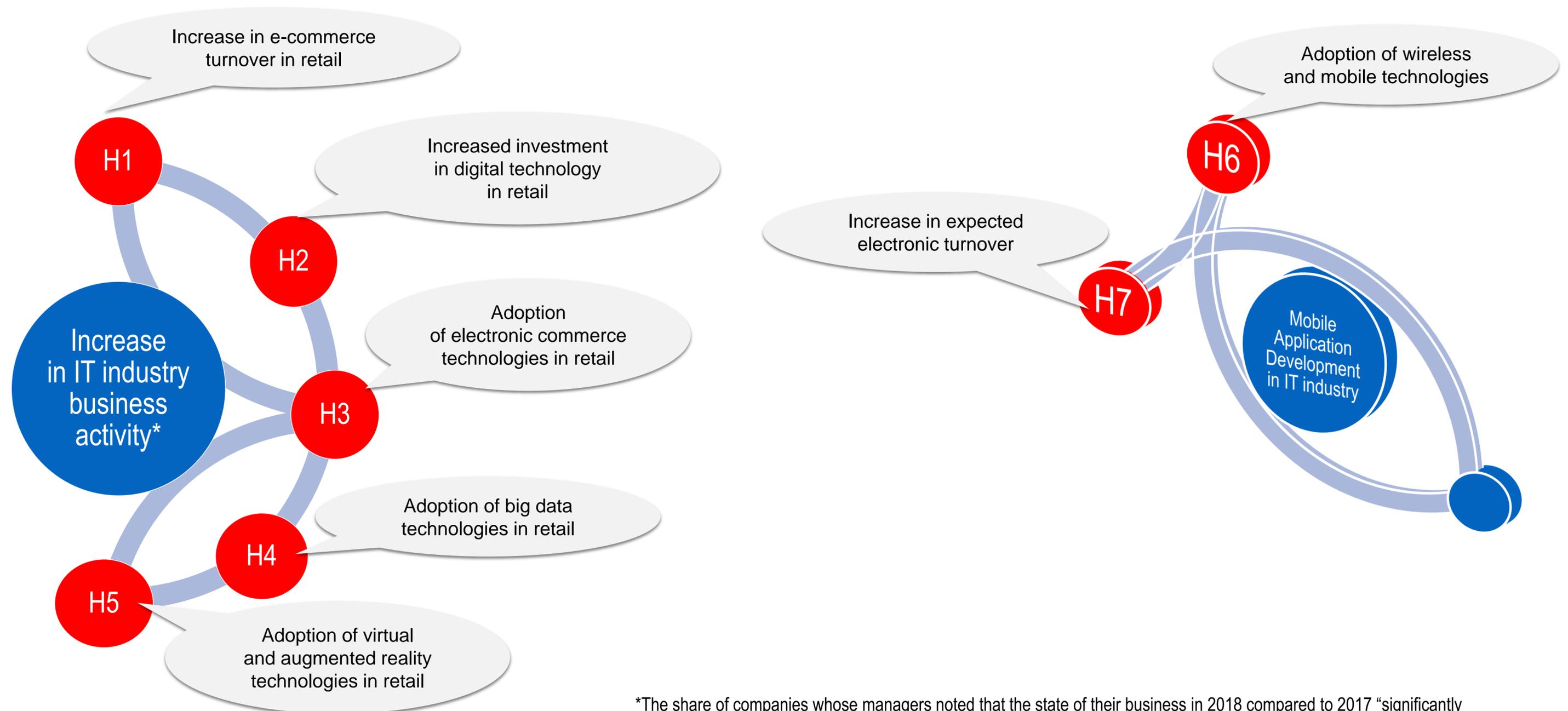


- At the moment, digital development primarily determines the use of the following technologies in retail: electronic commerce, electronic payments, big data, mobile applications, radio frequency identification (RFID) systems, social media, IoT, virtual and augmented reality, CRM systems, cloud computing etc
- In recent years, the **most successful** Russian industries in digital have been **telecommunications, banks and retail\***. The digital transformation of retail has great potential to promote the country's economic development, given that retail is the leader in terms of the number of jobs created (about 20% of the total employed population of the country)
- **Is there really a link between the Russian IT industry economic and technological development and the adoption of digital technologies in the retail sector?**



# PURPOSE HYPOTHESES

The purpose of the paper is to identify the presence and establish the strength of the relationship between the IT and retail industries in terms of the existing localized industry effects, expressed in the transfer of technology from the IT industry to retail



\*The share of companies whose managers noted that the state of their business in 2018 compared to 2017 “significantly improved” or “became slightly better”



# METHODOLOGY OF BUSINESS TENDENCIES STUDIES

## ☐ Survey of business activity of organizations providing **IT services** (OKVED 2 section “J”)

✓ The results of observations that have been held since **2010** are used (more than 600 firms)



## ☐ Survey of business and digital activity of **retail organizations** (OKVED 2 section “G”)

✓ The first pilot surveys were conducted in **2018** (more than 700 firms)



- ☐ The surveys were conducted by the Information & Publishing Centre "Statistics of Russia" commissioned by the Centre for Business Tendencies Studies of ISSEK HSE in the framework of the Basic Research Program on the topic “Business tendency monitoring of business climate, economic sentiment and digital activity in the Russian economy”
- ☐ The sample is representative, multidimensional, stratified, and also representative of the main economic parameters of thirty regions of Russia
- ☐ The survey program is harmonized with the methodological approaches adopted in OECD countries, as well as is based on methodology of building the European composite indicator DESI (The Digital Economy and Society Index) and the digital economy monitoring, conducted by the European Commission

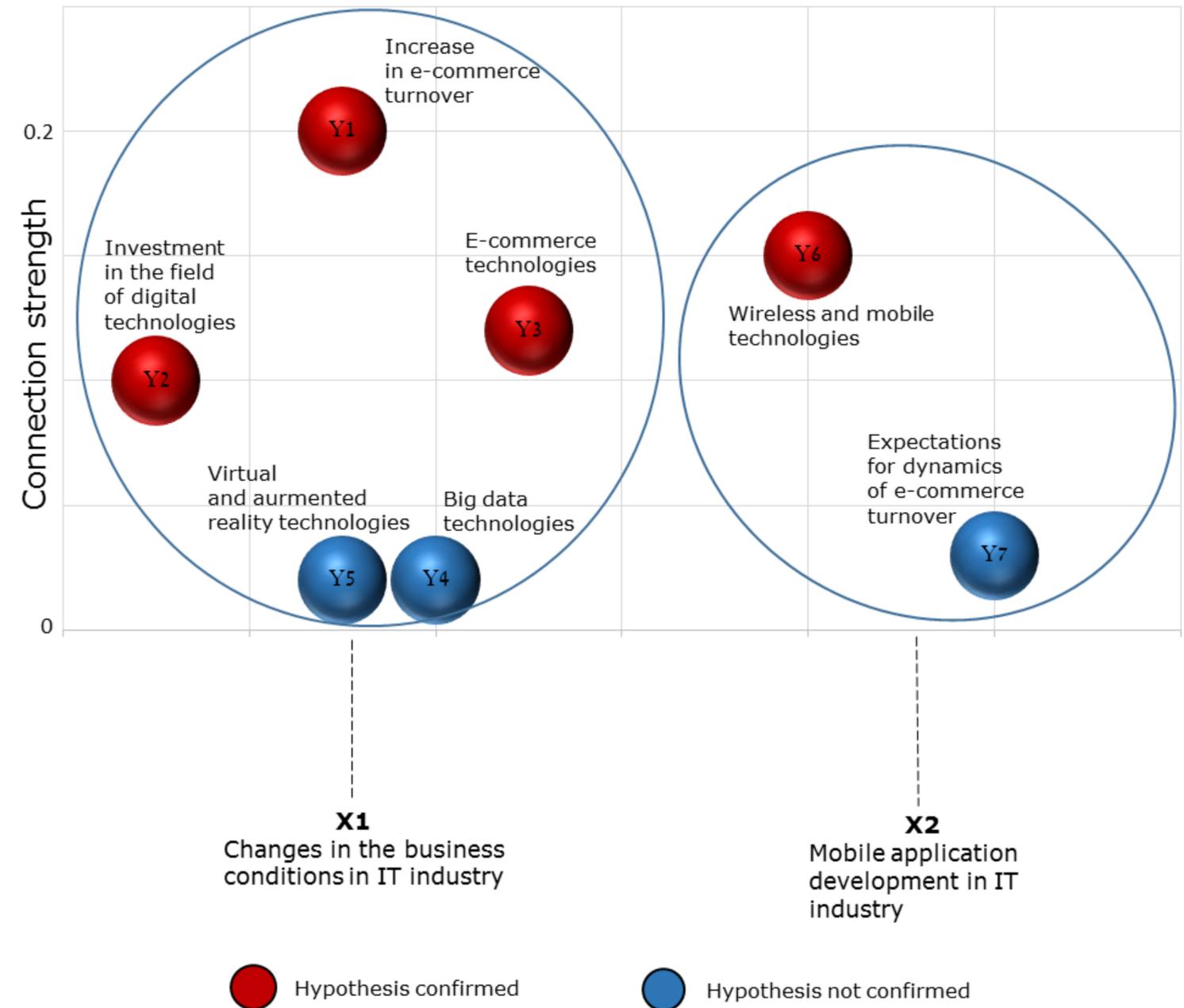


# RESULTS

Model	Dependent variable	Independent variable	Coefficient (beta)	Statistical significance (p-value)	R <sup>2</sup>
1	Y1	X1	0,523	0,016**	0,197
2	Y2	X1	0,28	0,099*	0,098
3	Y3	X1	0,275	0,058*	0,126
4	Y6	X2	0,371	0,04**	0,147
5	Y7	X2	0,089	0,184	0,064

Note: \*, \*\*, \*\*\* are significant on levels  $p < 0.1$ ;  $p < 0.05$ ;  $p < 0.01$  respectively.

- It was found that the growth of business activity in the IT industry determines increasing the **e-commerce turnover** in retail
- The business activity in IT companies contributes to the growth of **investments in digital technologies** and the development of **e-commerce technologies** (the use of Internet platforms, market places and online stores)
- We confirmed the existence of cross-industry connections at the level of individual technological developments, showing the link between high activity in the development of **mobile applications** in the IT industry and the dynamics of the **use of wireless and mobile technologies in retail**
- However, in the study, three hypotheses (H4, H5, H7) were not confirmed: connections were not found for **Big data** and **virtual and augmented reality** technologies in retail, as well as between **expectations for e-commerce turnover** in retail and mobile application development in IT





## DISCUSSION

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- ❑ Our attempt to detail the tendencies and assessments of the ongoing technological transformation in Russia based on **the first results** of a survey of digital activity was timely and successful. The obtained results **confirmed the majority** of the hypotheses put forward, thereby proving the IT industry is currently an **important component** of the digital transformation of Russian retail organizations. This indicates the importance of studying cross-sectoral effects of digitalization in future research covering various sectors
- ❑ Why was there no connection found for Big data, virtual and augmented reality technologies in retail?
- ❑ Of course, the direction and properties of the cross-sectoral relations we have examined are somewhat ambiguous. In this regard, further industry research is needed to understand to what extent the demand and supply of technologies are the leading factors in strengthening cross-sectoral economic and technological connections, how important these links are for digital transformation, and in general, what role digitalization plays in the technological development of economies. This requires the continuation of the survey program and development of tools and statistical methods of **business tendencies studies** used to measure digitalization, which complement **capacities of quantitative statistics**
- ❑ Thereby, our research becomes the **initial stage** in a large direction of researching the causes and measuring the effects of digital transformations with an emphasis on industry specifics



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