

# **COVID Induced Inequalities: Education. Health Services. Digital Access. and Female Labor Force Participation (*Case Study from Kazakhstan*)**

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# Overview

- The COVID-19 pandemic has affected the economy of Kazakhstan more than the recent financial and economic crises
- In 2020 the national GDP declined by 2.6%. GDP per capita – by 7.1%.
- Oil prices plummeted to \$20 per barrel
- Global trade flows fell by 8.5% (the highest fall in the last 11 years)
- Global investment flow down 40%
- The services sector fell by 5.6% (the sectors of trade, logistics and tourism were most affected).
- Excess mortality was more than 24% higher than average of the years 2017-2019. This was especially noticeable in the urban population.

# The KZ government support

- Decrees of the President:
  - "On measures to ensure socio-economic stability"
  - "On further measures to stabilize the economy“, including the Employment Roadmap for 2020-2021.
- 8% of GDP to support employment, monthly payments for loss of income by citizens, housing construction, compensation for losses of local budgets and other areas, including infrastructure projects, favorable lending money SME, interest rate subsidies, state guarantees for fulfilment of obligations, tax and payment holidays, and more.

# Research question

- How did COVID-19 affect education, health services, digital access, and female labor force participation in Kazakhstan?

## Methods

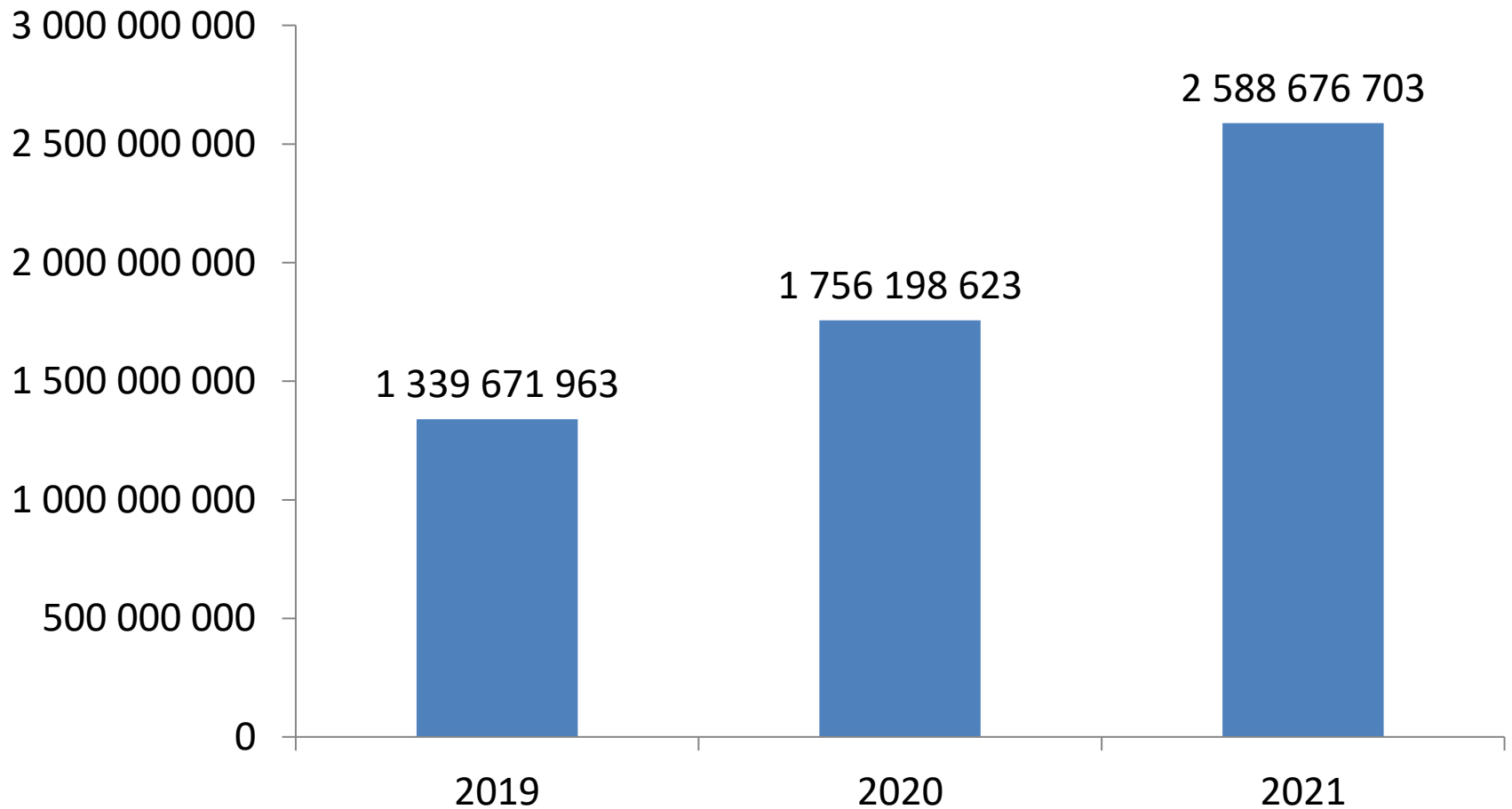
- Statistical descriptive analysis of health services, Education, female labor force and digital access indicators
- Expert interviews for evaluation of health services

# Methods

*Statistical descriptive analysis of the following indicators:*

No	Indicators	Unit of measurement	Period of study
<b>Health services</b>			
1	Hospitals by region	Unit	2015-2021
2	Hospital beds by region	unit	2015-2021
3	Secondary medical personnel by region	people	2015-2021
<b>Female labor force participation</b>			
4	Labor force participation rate	%	2019 - 2021
5	Number of employed (incl. self-employed)	thousand people	2019 - 2021
6	Unemployment rate	%	2019 - 2021
7	Gender segregation of labor and gender wage gap	%. tenge	2019 - 2021
<b>Education</b>			
8	Preschoolers by region and gender	people	2018 - 2021
9	Secondary school pupils in urban and rural areas	people	2018 - 2021
10	Secondary school pupils by locality and gender	people	2018 - 2021
11	Students of higher education organizations by gender	people	2018 - 2021
<b>Digital access</b>			
12	ICT users by age group (16-24 years old and 25-74 years old)	%	2010, 2019, 2021
13	ICT users by gender	%	2010, 2019, 2021
14	Users of digital resources., including computers and the Internet	%	2018-2020

# *Amount of health services provided in Kazakhstan, tenge*



# Hospitals

	2015	2019	2015 to 2019 change rate. %	2020	2021	2019 to 2021 change rate. %
<b>Kazakhstan</b>	901	749	<b>83</b>	773	773	<b>103</b>
<b>Akmola</b>	38	27	<b>71</b>	29	29	<b>107</b>
<b>Aktobe</b>	47	44	<b>94</b>	44	44	<b>100</b>
<b>Almaty</b>	86	79	<b>92</b>	82	82	<b>104</b>
<b>Atyrau</b>	36	28	<b>78</b>	29	29	<b>104</b>
<b>West Kazakhstan</b>	37	29	<b>78</b>	29	29	<b>100</b>
<b>Jambyl</b>	57	47	<b>82</b>	47	47	<b>100</b>
<b>Karaganda</b>	83	72	<b>87</b>	75	75	<b>104</b>
<b>Kostanay</b>	51	39	<b>76</b>	42	42	<b>108</b>
<b>Kyzylorda</b>	50	36	<b>72</b>	33	33	<b>92</b>
<b>Mangistau</b>	29	26	<b>90</b>	31	31	<b>119</b>
<b>Pavlodar</b>	42	35	<b>83</b>	36	36	<b>103</b>
<b>North Kazakhstan</b>	28	22	<b>79</b>	43	43	<b>195</b>
<b>Turkestan</b>	122	39	<b>32</b>	24	24	<b>62</b>
<b>East Kazakhstan</b>	88	62	<b>70</b>	61	61	<b>98</b>
<b>Nur-Sultan city</b>	31	36	<b>116</b>	37	37	<b>103</b>
<b>Almaty city</b>	76	92	<b>121</b>	91	91	<b>99</b>
<b>Shymkent city</b>	-	36	-	40	40	<b>111</b>

# Hospital beds

	2015	2019	2015 to 2019 change rate, %	2020	2021	2019 to 2021 change rate, %
<b>Kazakhstan</b>	102 489	96 286	<b>94</b>	127 464	125 034	<b>130</b>
<b>Akmola</b>	4 807	4 445	<b>92</b>	5 192	5 888	<b>132</b>
<b>Aktobe</b>	4 399	4 166	<b>95</b>	5 376	5 214	<b>125</b>
<b>Almaty</b>	9 229	9 278	<b>101</b>	12 808	12 387	<b>134</b>
<b>Atyrau</b>	3 107	2 540	<b>82</b>	5 245	4 048	<b>159</b>
<b>West Kazakhstan</b>	4 239	3 700	<b>87</b>	4 552	4 584	<b>124</b>
<b>Jambyl</b>	5 897	5 338	<b>91</b>	6 207	6 497	<b>122</b>
<b>Karaganda</b>	9 985	9 187	<b>92</b>	11 712	12 973	<b>141</b>
<b>Kostanay</b>	5 042	4 696	<b>93</b>	6 058	6 602	<b>141</b>
<b>Kyzylorda</b>	5 241	4 361	<b>83</b>	6 399	5 448	<b>125</b>
<b>Mangistau</b>	2 837	2 725	<b>96</b>	3 411	3 574	<b>131</b>
<b>Pavlodar</b>	5 175	4 364	<b>84</b>	7 904	6 199	<b>142</b>
<b>North Kazakhstan</b>	3 900	3 448	<b>88</b>	4 265	4 671	<b>135</b>
<b>Turkestan</b>	12 852	9 022	<b>70</b>	11 195	11 200	<b>124</b>
<b>East Kazakhstan</b>	8 871	8 135	<b>92</b>	9 067	11 093	<b>136</b>
<b>Nur-Sultan city</b>	6 369	6 516	<b>102</b>	12 222	8 182	<b>126</b>
<b>Almaty city</b>	10 539	10 763	<b>102</b>	9 556	11 109	<b>103</b>
<b>Shymkent city</b>	-	3 601		6 295	5 365	<b>149</b>



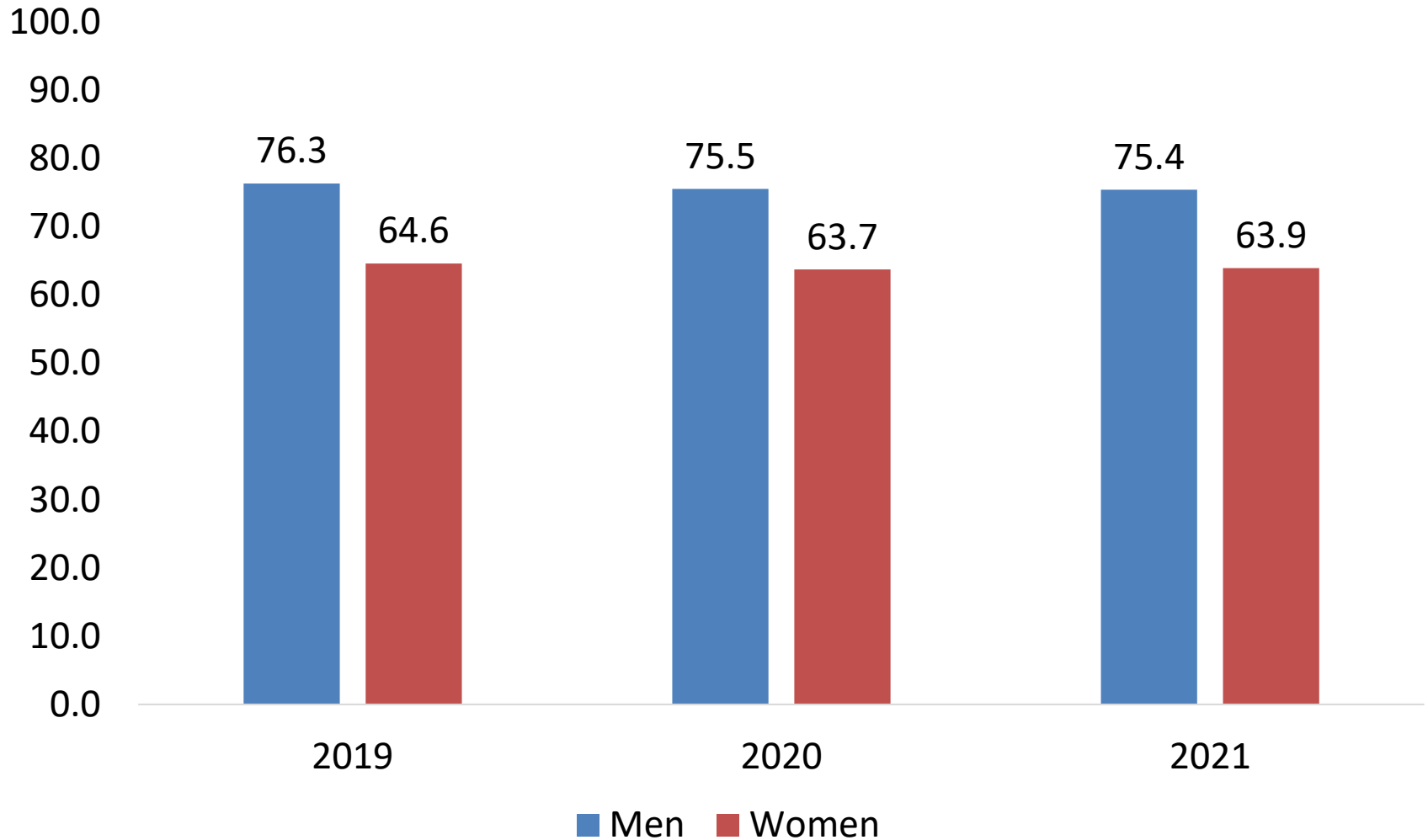
# Medical staff (nurses)

	2015	2019	2015 to 2019 change rate, %	2020	2021	2019 to 2021 change rate, %
<b>Kazakhstan</b>	163 937	179 837	<b>110</b>	185 757	188 800	<b>105</b>
<b>Akmola</b>	6 796	6 361	<b>94</b>	6 497	6 557	<b>103</b>
<b>Aktobe</b>	7 010	8 093	<b>115</b>	8 150	8 108	<b>100.1</b>
<b>Almaty</b>	13 564	15 534	<b>115</b>	16 276	17 290	<b>111</b>
<b>Atyrau</b>	5 074	5 733	<b>113</b>	6 117	6 248	<b>109</b>
<b>West Kazakhstan</b>	6 441	6 952	<b>108</b>	7 094	7 207	<b>104</b>
<b>Jambyl</b>	10 392	11 474	<b>110</b>	11 535	12 105	<b>105</b>
<b>Karaganda</b>	13 400	13 766	<b>103</b>	14 034	14 033	<b>102</b>
<b>Kostanay</b>	7 154	7 081	<b>99</b>	7 141	6 998	<b>99</b>
<b>Kyzylorda</b>	8 590	10 402	<b>121</b>	10 601	10 721	<b>103</b>
<b>Mangistau</b>	5 736	7 150	<b>125</b>	7 412	7 518	<b>105</b>
<b>Pavlodar</b>	6 979	7 002	<b>100</b>	7 174	7 107	<b>101</b>
<b>North Kazakhstan</b>	6 297	5 875	<b>93</b>	5 839	5 713	<b>97</b>
<b>Turkestan</b>	24 077	19 220	<b>80</b>	20 036	20 292	<b>106</b>
<b>East Kazakhstan</b>	14 523	14 965	<b>103</b>	15 707	15 297	<b>102</b>
<b>Nur-Sultan city</b>	11 125	12 196	<b>110</b>	12 557	13 078	<b>107</b>
<b>Almaty city</b>	16 779	18 858	<b>112</b>	19 477	19 987	<b>106</b>
<b>Shymkent city</b>	-	9 175	-	10 110	10 541	<b>115</b>

# *Expert interview on the healthcare services*

- 80% of those surveyed indicated that their organization facilitated partnerships with other organizations as a response to COVID-19, and 20% - are not involved in partnerships
- 40% of respondents: their organization is in partnership with other organizations *to use data*, 40%: their organization is collaborating with other organizations *to collect and process data*
- 40% of respondents believe that the financial crisis has not affected the redistribution of financial resources in their medical organization, 40% - the redistribution of financial resources has taken place and 20% of respondents found it difficult to answer
- regarding the availability of the equipment for the COVID-19 patients, 80% of the respondents answered positively, 20% - negatively
- the need for telemedicine in emergency situations; 80% of respondents agreed, and 20% - do not know
- When asked “What are your recommendations for improving the delivery of healthcare services to better prepare for future pandemics” the following suggestions were received: “training of epidemiologists, virologists, infectious disease specialists”, “high-quality equipment for infectious diseases hospitals”, “in all clinics to have infectious diseases departments”, “to develop a telemedicine”, “creation of a multidisciplinary association with opinion leaders who could work with doctors and the public”, “to conduct studies, pieces of training for cases of emergency situations”

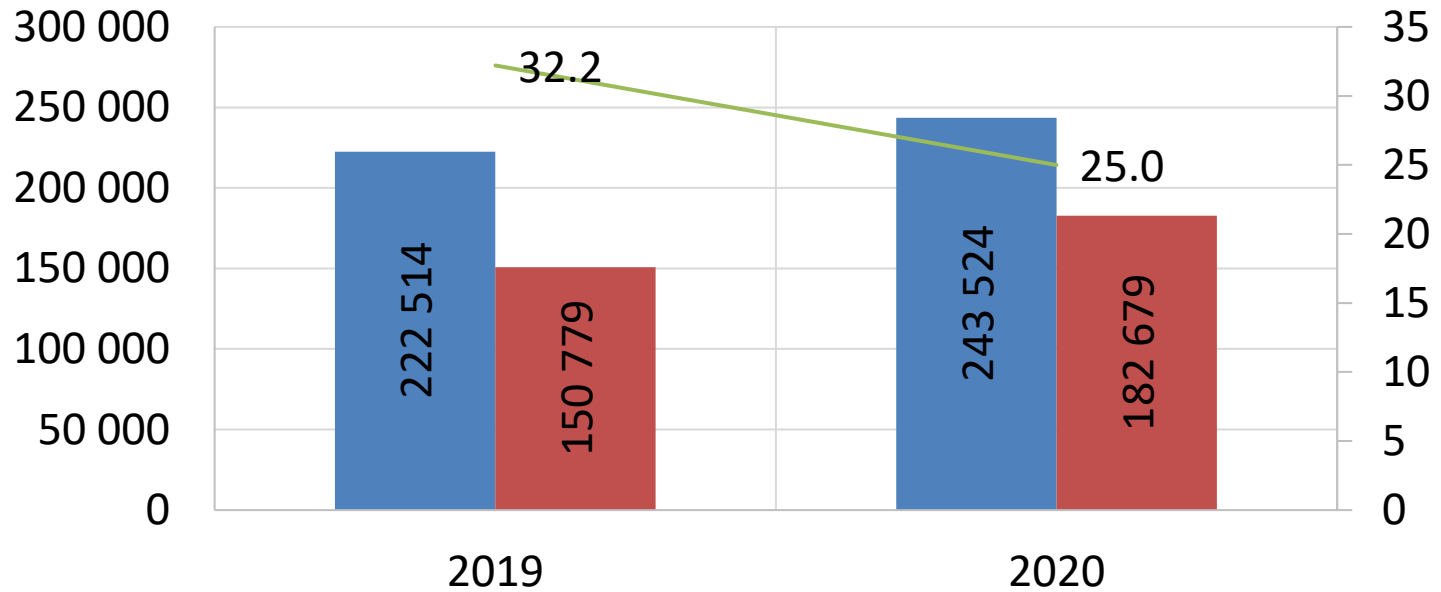
# *Labor force participation rate*



# *Unemployment rate*

Indicator	2019			2020			2021		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Unemployment rate, %	4.8	4.3	5.3	4.9	4.4	5.4	4.9	4.2	5.5
Youth unemployment rate, %	3.6	3.2	4.0	3.8	3.4	4.2	3.7	3.3	4.3
Long-term unemployment rate, %	2.2	1.7	2.6	2.2	1.7	2.7	2.1	1.6	2.6

# Gender wage gap

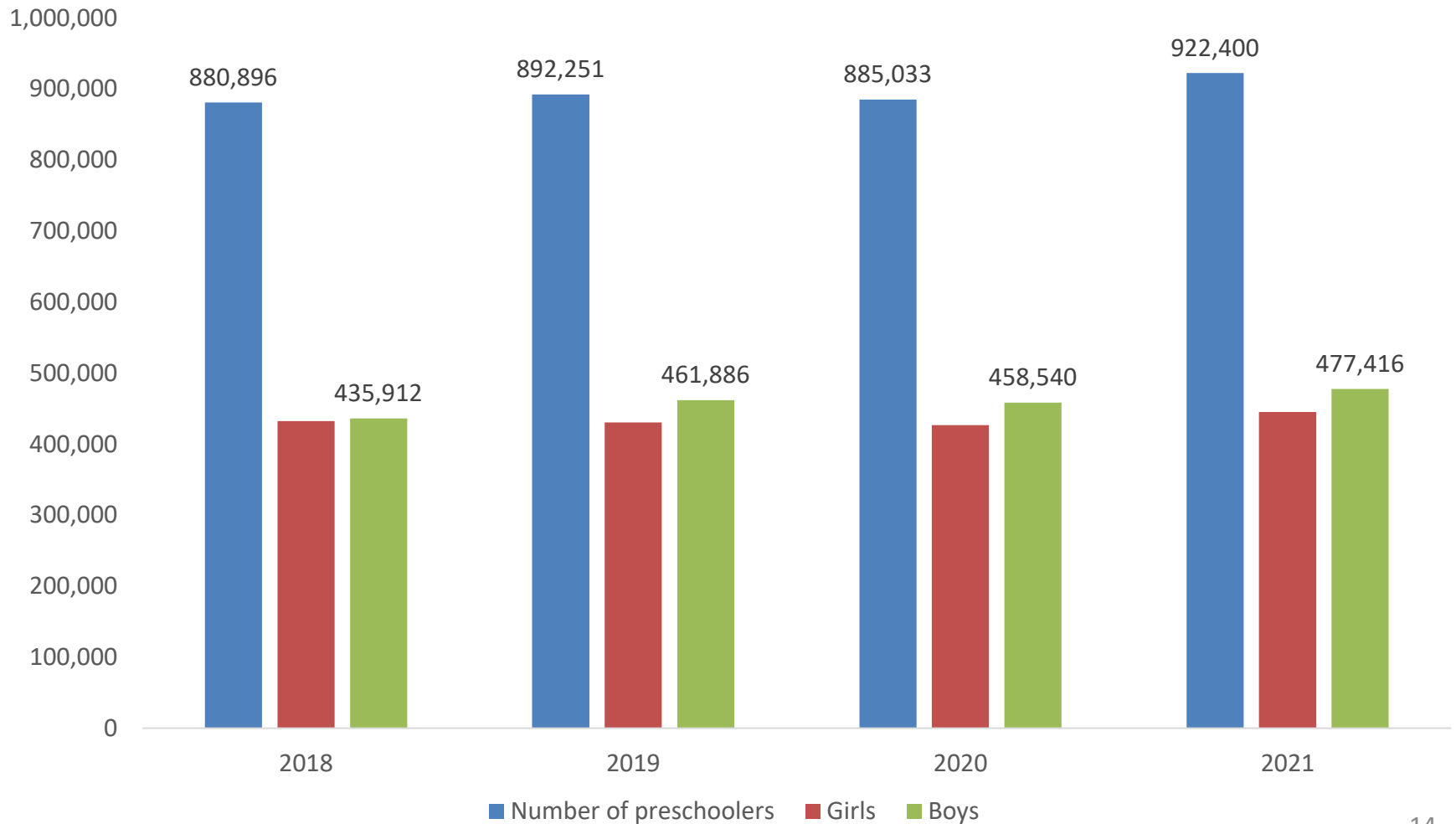


■ Average monthly salary of men, tenge

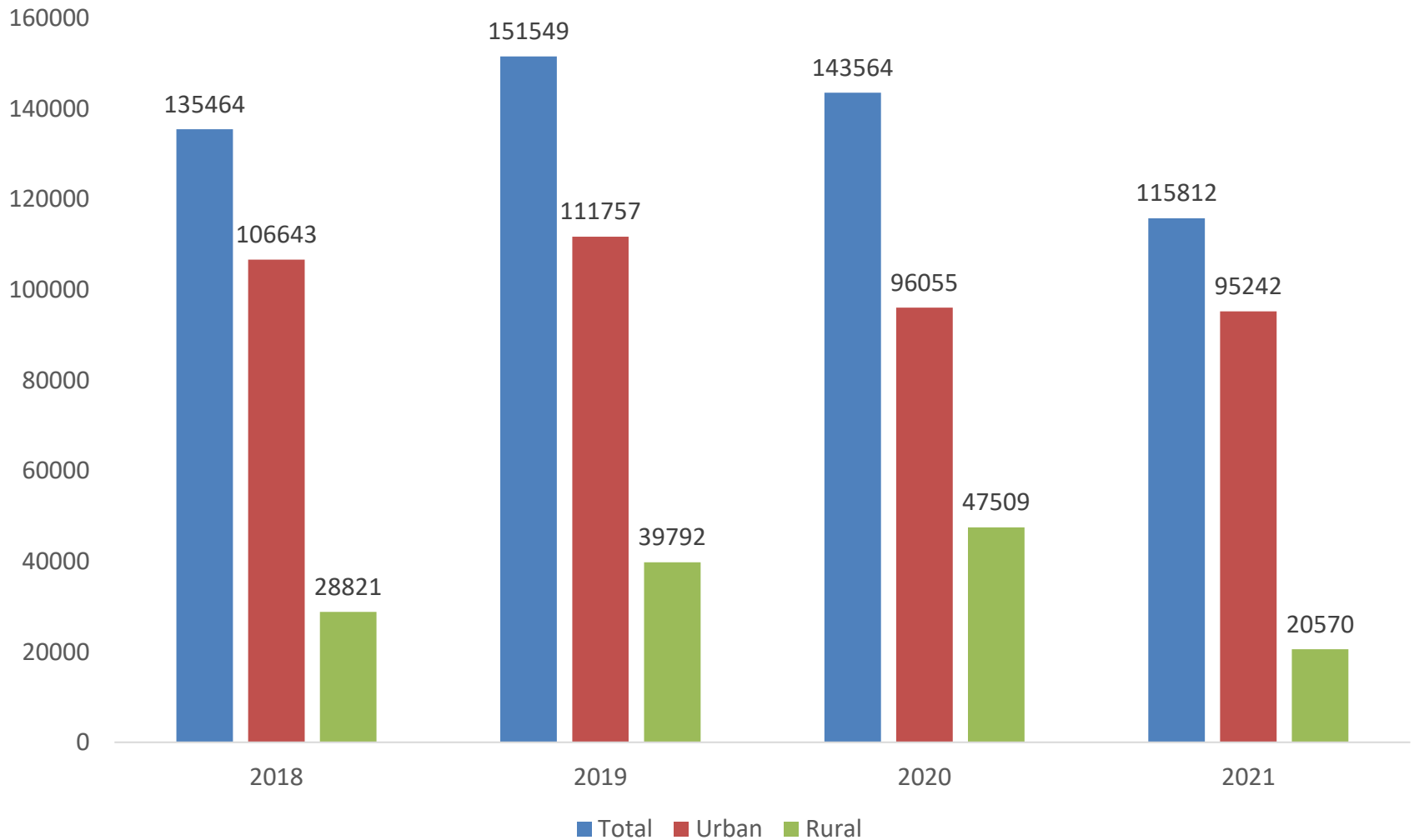
■ Average monthly salary of women, tenge

— Ratio of average monthly wages of women to men, %

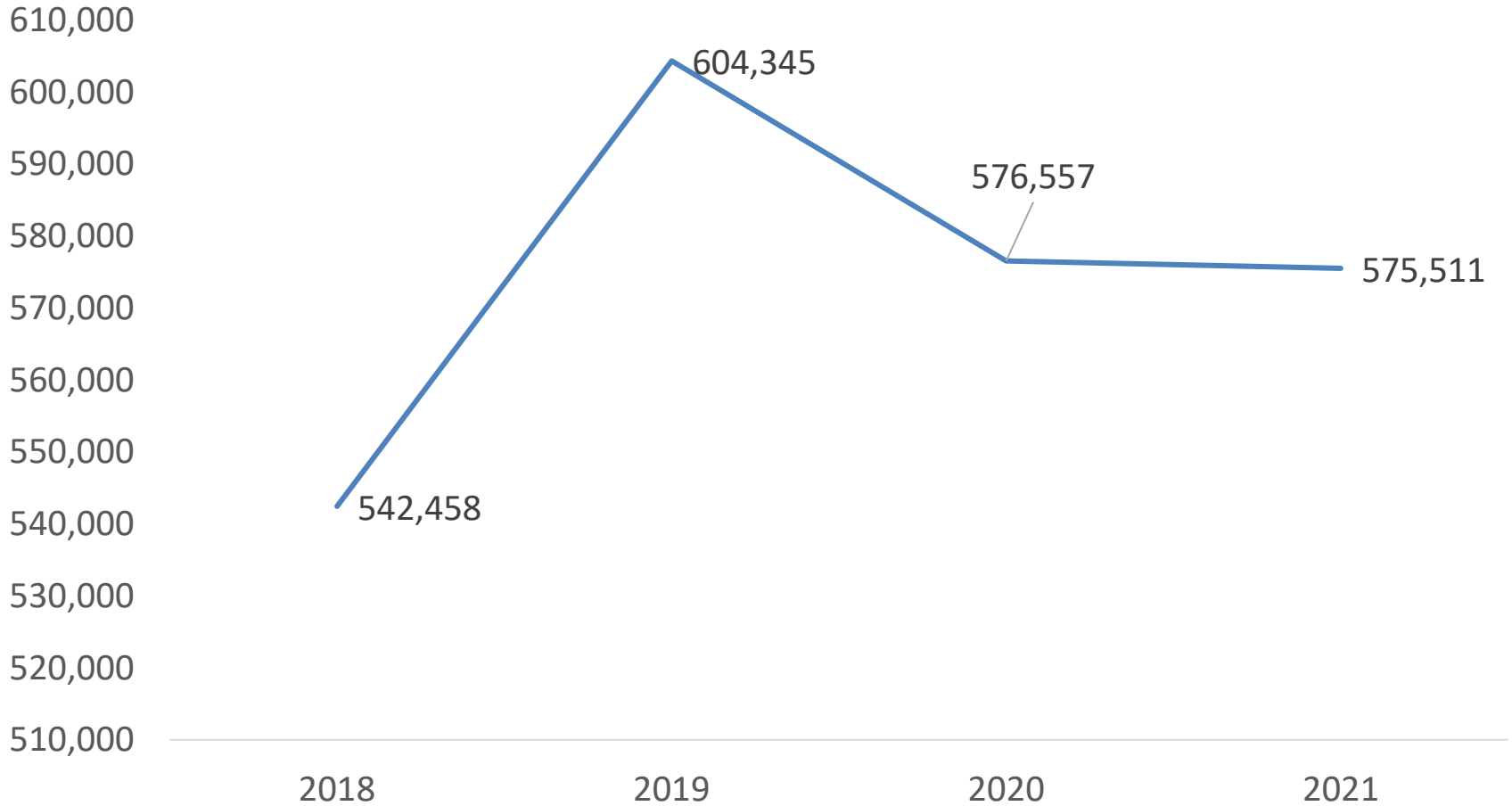
# Preschoolers



# *Children enrolled in secondary school*



# *Students enrolled in higher education*





## *ICT users by age group, %*

Region	2010		2019		2021	
	16-24 age	25-74 age	16-24 age	25-74 age	16-24 age	25-74 age
<b>Kazakhstan</b>	<b>27.9</b>	<b>72.1</b>	<b>28.3</b>	<b>71.7</b>	<b>28.5</b>	<b>71.5</b>
<b>Akmola</b>	28.1	71.8	30.5	69.5	31.3	68.7
<b>Aktobe</b>	34.3	65.7	33.0	67.0	33.3	66.7
<b>Almaty</b>	23.2	76.8	33.8	66.2	36.9	63.1
<b>Atyrau</b>	23.1	76.9	36.7	63.3	38.5	61.5
<b>West Kazakhstan</b>	51.8	48.3	32.0	68.0	30.5	69.5
<b>Zhambyl</b>	26.1	73.8	39.0	61.0	40.5	59.5
<b>Karaganda</b>	21.6	78.4	30.9	69.1	31.4	68.6
<b>Kostanay</b>	23.5	76.5	28.3	71.7	28.6	71.4
<b>Kyzylorda</b>	35.0	65.1	39.7	60.3	40.1	59.9
<b>Mangystau</b>	17.2	82.8	38.6	61.4	40.2	59.8
<b>Turkestan</b>	43.3	56.7	44.6	55.4	44.5	55.5
<b>Pavlodar</b>	25.0	74.9	28.1	71.9	29.8	70.2
<b>North Kazakhstan</b>	24.0	76.1	28.2	71.8	29.5	70.5
<b>East Kazakhstan</b>	24.5	75.6	29.6	70.4	29.6	70.4
<b>Nur-Sultan city</b>	47.0	53.0	32.3	67.7	30.3	69.7
<b>Almaty city</b>	9.8	90.3	29.4	70.6	29.2	70.8

## *Users of digital resources, including computers and the Internet, %*

	2018	Growth rate	2019	Growth rate	2020	Difference of growth rates
Kazakhstan	83.4	<b>103.8</b>	86.6	<b>102.8</b>	89.0	<b>-1.1</b>
Akmola	70.7	<b>108.1</b>	76.4	<b>105.1</b>	80.3	<b>-3.0</b>
Aktobe	69.7	<b>108.6</b>	75.7	<b>109.1</b>	82.6	<b>0.5</b>
Almaty	74.6	<b>93.4</b>	69.7	<b>124.5</b>	86.8	<b>31.1</b>
Atyrau	70.5	<b>102.8</b>	72.5	<b>120.3</b>	87.2	<b>17.4</b>
West Kazakhstan	68.5	<b>111.2</b>	76.2	<b>108.7</b>	82.8	<b>-2.6</b>
Zhambyl	77.4	<b>92.8</b>	71.8	<b>119.2</b>	85.6	<b>26.5</b>
Karaganda	70.3	<b>89.6</b>	63	<b>144.8</b>	91.2	<b>55.1</b>
Kostanay	72.5	<b>106.3</b>	77.1	<b>112.2</b>	86.5	<b>5.8</b>
Kyzylorda	64.7	<b>101.9</b>	65.9	<b>109.1</b>	71.9	<b>7.2</b>
Mangystau	67.6	<b>104.7</b>	70.8	<b>118.8</b>	84.1	<b>14.1</b>
South Kazakhstan	77.4	<b>104.5</b>	80.9	<b>105.8</b>	85.6	<b>1.3</b>
Pavlodar	67.4	<b>111.6</b>	75.2	<b>120.5</b>	90.6	<b>8.9</b>
North Kazakhstan	83.7	<b>100.6</b>	84.2	<b>103.3</b>	87	<b>2.7</b>
East Kazakhstan	70.5	<b>109.9</b>	77.5	<b>113.0</b>	87.6	<b>3.1</b>
Nur-Sultan city	78.6	<b>113.7</b>	89.4	<b>102.1</b>	91.3	<b>-11.6</b>
Almaty city	65.4	<b>119.1</b>	77.9	<b>110.8</b>	86.3	<b>-8.3</b>

# ICT users by gender

Region	2010		2019		2021	
	Male	Female	Male	Female	Male	Female
<b>Kazakhstan</b>	<b>50.7</b>	<b>49.3</b>	<b>51.6</b>	<b>48.4</b>	<b>50.9</b>	<b>49.1</b>
<b>Akmola</b>	53.3	46.7	53.6	46.4	52.8	47.2
<b>Aktobe</b>	50.9	49.1	51.2	48.8	49.2	50.8
<b>Almaty</b>	55.1	44.9	55.4	44.6	54.3	45.7
<b>Atyrau</b>	57.1	42.9	57.5	42.5	49.1	50.9
<b>West Kazakhstan</b>	55.0	45.0	55.4	44.6	54.4	45.6
<b>Zhambyl</b>	53.6	46.4	54.0	46.0	52.3	47.7
<b>Karaganda</b>	45.3	54.7	45.7	54.3	43.4	56.6
<b>Kostanay</b>	44.8	55.2	45.2	54.8	43.1	56.9
<b>Kyzylorda</b>	53.6	46.4	53.9	46.1	49.2	50.8
<b>Mangystau</b>	47.8	52.2	48.2	51.8	51.2	48.8
<b>Turkestan</b>	54.2	45.8	54.6	45.4	52.2	47.8
<b>Pavlodar</b>	40.9	59.1	52.2	47.8	51.3	48.7
<b>North Kazakhstan</b>	52.2	47.8	52.4	47.6	52.5	47.5
<b>East Kazakhstan</b>	48.4	51.6	49.3	50.7	49.5	50.5
<b>Nur-Sultan city</b>	32.5	67.5	44.1	55.9	43.2	56.8
<b>Almaty city</b>	56.5	43.5	51.1	48.9	51.3	48.7

# Policy recommendations

## *Healthcare*

- growth of healthcare financing
- digitalization of the industry
- modernization of medical equipment
- increasing the prestige of the medical profession
- introduction of international standards and quality management to improve the quality of medical services and patient safety

## *Female labor market participation*

- the transition from a protective ideology in relation to women to increasing their competitiveness and salary in the labor market
- prevention of discriminatory acts against women and provide them employment in the industrial and high-tech sector, developing the system of social support for motherhood, including the reintegration of women into the labor force, in particular through training programs, wage incentives and new skills

# Policy recommendations

## *Education*

- digital infrastructure (reliable proctoring systems, digital educational platforms, streaming connections)
- digital skills of teachers
- Internet speed in rural areas
- ensuring individual flexible study
- formalizing online education

## *Digital access*

- to ensure proper digital access to official information;
- providing access to ICT for all, including disadvantaged marginalized and vulnerable groups;
- encouraging research on the information society, including innovations in networking, an adaptation of ICT infrastructure, ICT tools and applications, and digital access;
- providing access to fibre-optic infrastructure, improving the quality of communication in rural areas, shrinking the digital gap between urban and rural areas.

Thank you!