

2002-2

**Human Resources Development
through Regional Innovation System**



**02-26-2 Human Resources Development
through Regional Innovation System**

:

:



가

가

OECD, UNESCO

1990

가

가 , , , , , .

2002 11

3.

(decent job)가

가

가

가 .
가

4.

OECD 가

가 .

, RIS . .

, ,

. RIS
가 가 .

가 , 가

가 .

가 .

Agency; RDA)

(Regional Development Agency; RDA)
(Regional Development Agency; RDA)

5.

가 .

() ,

leadership,

가

가 .

가 .

(social capital, localized institutions)

network

(eg.

,...),

network

가

가

3

network

가

()

가

6.

1)
 2)
 3)
 4)
 5)
 (division
 of labor)
 가

가

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•	1
1.	1
2.	3
3.	5
•	7
1.	7
2.	(Regional Innovation System)	11
•	13
1.	14
2.	(decent job)	18
3.	21
4.	27
5.	32
6.	.....	34
7.	.....	40
•	.....	43
1.	(Yorkshire)	43
2.	/ (Øresund)	49
3.	(Alabama)	53
4.	.....	56

•	.....	57
1. RIS	.....	57
2. 3	.....	60
3.	.....	77
•	.....	85
1.	.....	85
2.	.....	92
	.....	123
Abstract	.....	129

< -1>		.....	15
< -2>		.....	16
< -3>	1	.....	17
< -4>		(1999)	19
< -5>		(2001)	20
< -6>		(2001)	20
< -7>	5%	(1999) ...	22
< -8>		(1999)	22
< -9>	4	.....	22
< -10>		()	23
< -11>	가	(1996)	24
< -12>		.....	24
< -13>	1	(2001)	26
< -14>		1 (2001)	26
< -15>		.....	28
< -16>		.....	28
< -17>		.....	30
< -18>		(2000) ..	31
< -19>		.....	33
< -20>		.....	33
< -21>		(2001)	34
< -22>	·	.....	35
< -23>		(2001)	36
< -24>	·	가	39
< -1>	가	.....	81
< -1>		()	100

[-1]	.....	6
[-1] 16	•	(2001) . 37
[-1]	AIDT	..... 54
[-1]	.....	62
[-2]	•	..... 63
[-3]		..... 71
[-4]	.....	74
[-5]	(1)	..... 79
[-6]	(2)	..... 80
[-7]		... 83

1.

가

가

OECD

R&D

가

2000 1 3

가

2001 1

2001 12 17

5

「가

, 2002 8

(6713)

가

가
 (,)
 R&D
 가
 가
 가
 가
 가
 가
 가
 Networking 가
 가 (Morgan, 1997).
 (physical proximity)
 (social capital)
 (Regional Innovation System, RIS)

• • •

(, ,)

가

, • , • , (• •)

(subsystems)

•

가

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, 가

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2.

가.

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가

3

(R&D

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3.

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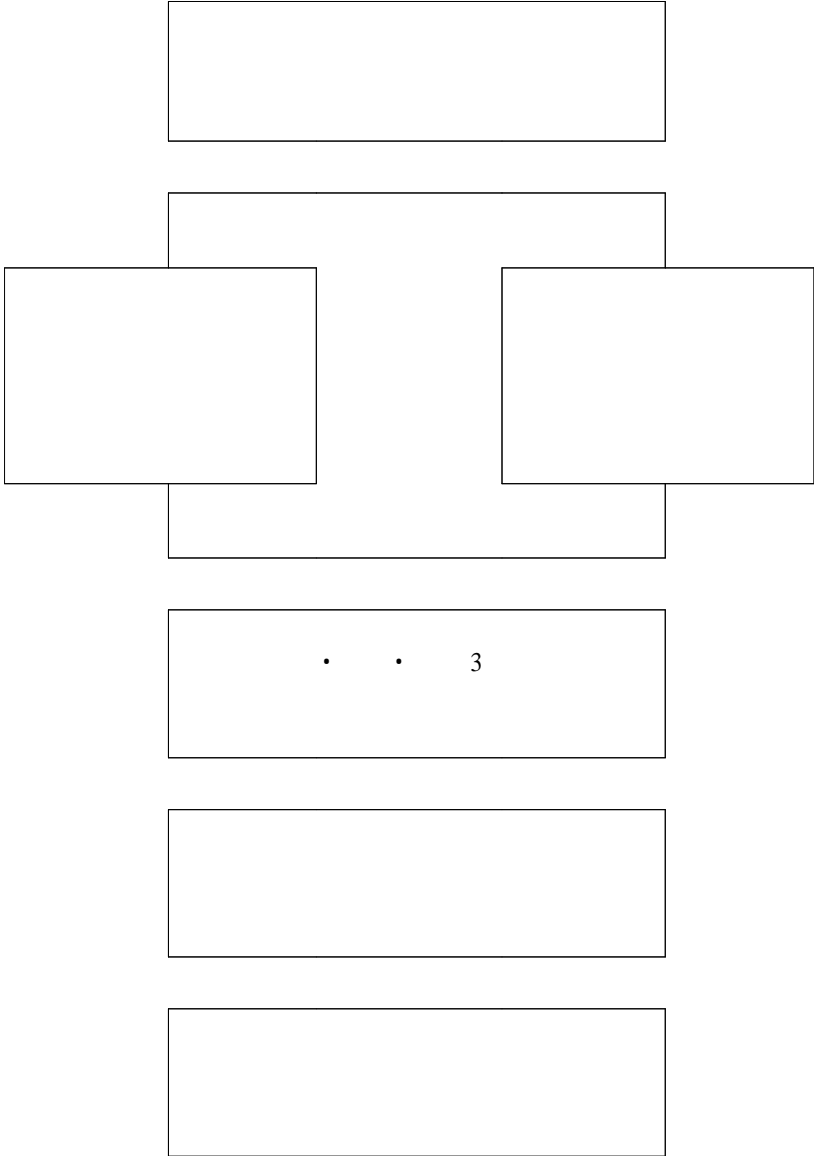
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3

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[-1]

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1.

가. ' '

(physical resources), (financial resources), (informa-
tion resources), (human resources) .

()

.¹⁾

, (,) ,

(lifelong employability) .

2)

가 . . /

1) 2002 8 ' ' .
가 . . '

2) (2001). 가 . .
p.p.9-10.

3)

가

가

가

가

가

()

가

가 가

1 2

가 가

가

가

3) (2000). 가 . p.p.26-27.

. ' / '

' 가 ' / '

가 가

. , , . . .

, , , , ,

, .

. (,)

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. ' / '

(human resource development)

. (individual development),
 (career development), (organizational development)

, 가 . ,

(human resource management)

()

「 가 」

가

가

(actors)

가

가

가

(network)

가

, R&D

4)

4)

2. (Regional Innovation System)

(Schumpeter, 1939).

(the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies)' (Christopher Freeman, 1987),

(Lundvall, 1992).

가 (supranational), 가(national), (regional)

, 가

(2002.9 2003.6)

3

(2)

가

가

가

가

(supralocal)
가

‘가(state)’
가
(territories)

‘(region)’

가

가

가

()

•

가

가 ,

•

가

•

•

OECD, UNESCO

,

1990

가

가 .

• 4 (가) 2 ‘ 가 ,

, 10 ()

(“ ”)

, 3

•

,

,

•

,

1.

가

가
< -1>
. 2000

가

4%

10%

15%

20%

30%

가

가

60%

< -1> < -2>

가

, 1985

< -1>

(: , =100)

	1985		1990		1995		2000	
	19,713,859	100	44,852,806	100	84,598,728	100	108,523,811	100
	6,527,044	33	13,845,901	31	24,134,923	29	30,292,127	28
	3,044,058	15	7,165,958	16	13,917,759	16	17,120,350	16
	3,498,293	18	8,772,604	20	18,007,029	21	22,282,531	21
	-	-	4,162,324	9	8,522,225	10	11,250,327	10
	-	-	4,077,922	9	7,934,873	9	11,524,522	11
	-	-	-	-	-	-	25,337,612	23
	10,553,952	54	28,161,138	63	60,835,097	72	106,902,659	99
	3,086,285	16	5,316,632	12	9,766,748	12	12,965,595	12
	2,748,993	14	5,261,034	12	11,846,345	14	18,390,351	17
	5,171,915	26	6,326,966	14	14,774,106	17	23,899,799	22
	3,323,390	17	6,158,652	14	12,971,746	15	16,989,030	16
	6,585,490	33	9,196,064	21	18,907,378	22	25,479,894	23
	6,027,977	31	12,346,292	28	24,003,127	28	33,557,742	31
	9,357,091	47	19,681,985	44	43,760,510	52	34,147,860	31
	772,980	4	1,788,062	4	3,741,867	4	4,787,660	4

: 가

: (). .

2000

가

. < -2>

1985

19%

2000

13%

9%

7%

9% 5%

10%

7%

18% 14% , 20%
 16% , 28% 25%
 . 15 가
 () .

< -2>

(: %)

	1985	1990	1995	2000
	100	100	100	100
	19	17	15	13
	9	9	9	7
	-	5	5	5
	-	5	5	5
	-	-	-	11
	9	7	6	5
	8	6	7	8
	15	8	9	10
	10	8	8	7
	20	11	12	11
	18	15	15	14
	28	24	27	14
	2	2	2	2

: (). .

1

. < -3>

10

가
가
가

< -3> 2000 1

가 1

2.4

< -3> 1

(: , =100)

	1990		1995		2000	
	10,138,519	100	17,335,805	100	23,804,302	100
	9,079,279	90	14,188,667	82	18,414,667	77
	8,391,052	83	12,886,814	74	15,896,332	67
	11,822,916	117	17,619,402	102	20,405,248	86
	10,328,347	102	16,677,544	96	21,388,454	90
	10,194,805	101	15,407,520	89	19,904,183	84
	-	-	-	-	56,180,958	236
	10,839,545	107	17,401,344	100	26,150,357	110
	8,281,358	82	15,095,437	87	19,467,860	82
	8,993,221	89	18,626,329	107	28,076,872	118
	7,408,625	73	16,962,234	98	26,644,146	112
	7,679,117	76	15,189,398	88	20,225,036	85
	7,982,694	79	18,701,660	108	25,505,399	107
	9,489,848	94	19,050,101	110	24,494,702	103
	12,576,348	124	25,726,343	148	25,332,240	106
	7,481,431	74	15,088,173	87	17,797,993	75

: 가
: (). , .

가 ,

2. (decent job)

< -4> 가 가

10% .
20% ,

50%

30%, 65%

-5>).

(<

가

, < -6>

30%

(decent job)가

(decent job)

가

< -4>

(1999)

(: %)

	0.4	10.1	89.5
	2.5	18.4	79.1
	1.3	24	74.7
	1.6	45.8	52.6
	2.3	29.1	68.6
	0.7	24.6	74.7
	0.8	76.5	22.7
	2.8	58.1	39.1
	11.3	20	68.7
	10.2	49.7	40.1
	17	37.6	45.4
	17.8	29.1	53.1
	18.6	33.6	47.8
	12.1	47.7	40.2
	10.9	47.1	42
	31.4	3.9	64.7

: (2000).

,

.

< -5>

(2001)

(: %)

	0.2	18.4	81.4
	2	22.4	75.6
	2.6	24.6	72.8
	1.3	30.3	68.4
	6	12.4	81.6
	2.5	13.7	83.8
	4.3	38.6	57.1
	4.9	23	72.1
	19.3	10.2	70.5
	21.4	20.4	58.2
	33.2	14.9	51.9
	25.9	12.8	61.3
	35.8	9.1	55.1
	29.6	16.7	53.7
	15.8	23	61.2
	25.3	4.5	70.2

: (2002).

< -6>

(2001)

(: %)

	28.9	14.0	27.4	29.7
	15.6	11.6	30.4	42.4
	15.8	11.8	31.7	40.7
	17.8	11.0	26.7	44.5
	19.9	12.8	31.7	35.6
	20.1	13.1	32.8	34.0
	17.1	11.1	22.4	49.4
	22.7	14.4	23.8	39.1
	11.5	9.7	29.5	49.3
	12.9	9.4	25.7	52.0
	8.2	8.4	21.0	62.4
	11.9	8.8	25.7	53.6
	8.9	7.8	23.1	60.2
	10.0	8.7	23.2	58.1
	14.2	9.6	27.4	48.8
	12.7	11.2	25.4	50.7

: (2002).

3.

가 .

, ,

. 4

5)

60% 가

가

32.4% ,

5% 62.5%(1999)

(< -7>).

가 . 1999 가 50

(48.8%,

1999). 가

(

) , 0.6%

5)

, , ,

, , 1 ()

가 10 가

(2002) ,

가

20%p

, 4% (< -8>).

< -7> 5% (1999)

	5%		(%)
	20,567	14,113	68.62
	16,832	9,639	57.27
.	4,614	2,489	53.94
	42,013	26,241	62.46

: (2000). 10
p.119

< -8> (1999)

	(A)	(B)	(B/ A)
	121,508	734(7.4%)	0.60
	230,943	9,231(92.6%)	3.99
	352,451	9,965(100%)	2.80

: (2000). 10
p.118

< -9> 4

2000 1	826 (38.7%)	1,306 (61.3%)	2,132
2000 2	713 (44.5%)	889 (55.5%)	1,602
2001 1	2,190 (60.3%)	1,440 (39.7%)	3,630

: (2002).

가

.

. < -9> , 4

가 .6)

6) 2001

2004
2016

가
(< -10 >). 가
가 15~20%

가 (. .) 84.4%가
(< -11 >). 가
1/4 , 80%

, 1996 88.5% 98 92.9%
4.4%p (< -12 >).

< -10 > ()

	1999		SK Corporation 1999		1999	
		(%)		(%)		(%)
	640	77.9	2,900	84.1	81	84.4
	182	22.1	547	15.9	15	15.6
	822	100	3,447	100	96	100

: (2000). 10
p.120

< -11> 가 (1996)

	(%)	(%)	(%)
	13.0	84.4	25.0
	5.2	0.3	17.9
/	17.0	3.4	17.2
/	16.3	3.7	11.7
/	15.2	2.7	8.4
/	12.7	1.5	7.0
	3.1	0.0	3.6
	5.6	0.3	3.2
	8.6	0.6	4.8
	1.2	0.0	1.2

: (2000). 10
p.122

< -12>

	1996(40)		1997(41)		1998(42)	
		(%)		(%)		(%)
	170	88.5	206	92.0	169	92.9
	21	10.9	17	7.6	13	7.1
	1	0.6	1	0.4	0	0.0
	192	100	224	100	182	100

: (2000). 10
p.122

가 ,

가 ,

.7)

7)

(22), .
. 가

(5)

3

가

8)

가

(< -13>)

1

1

(< -14>),

가

가

1

1

가

가

24).

)

,)

,)

,)

8)

15

< -13>

1

(2001)

(:)

	18.7	29.9	18.8	22.4	17.5
	16.4	29.0	19.7	19.4	18.0
	22.9	32.4	22.0	19.7	18.8
	22.5	34.4	22.9	20.5	19.2
	18.0	33.5	22.2	18.0	18.9
	19.2	30.3	20.9	19.1	18.0
	19.5	32.3	23.8	20.7	18.8
	20.3	34.0	24.0	21.2	17.9
	18.4	21.6	16.4	15.1	14.0
	19.1	25.4	18.4	18.1	17.3
	17.6	22.3	17.0	16.9	14.4
	15.0	23.0	15.5	15.7	13.4
	17.5	20.3	13.9	15.9	12.8
	17.6	22.8	17.1	17.6	14.4
	18.1	27.0	19.3	18.1	14.8
	22.7	25.8	17.2	16.9	13.5
	18.8	28.7	19.6	19.5	16.4

: • (2001). •

< -14>

1

(2001)

(:)

	15.1	13.1	13.3	2.5
	13.5	12.9	13.9	3.1
	12.8	12.7	12.0	4.2
	14.7	14.5	12.8	3.9
	14.9	10.2	10.6	4.4
	12.9	14.1	17.5	3.3
	14.3	12.9	14.4	4.2
	14.6	14.2	14.7	3.5
	9.8	8.7	9.7	3.4
	9.5	8.3	10.6	3.5
	8.3	9.2	14.5	4.0
	9.8	9.2	11.0	3.2
	7.1	6.7	9.2	3.5
	7.5	7.2	9.6	2.7
	11.1	9.8	12.0	3.5
	13.0	10.1	11.5	3.0
	12.1	11.2	12.6	3.3

: • (2001) •

(KEDI, 2001),
25% (< -15>).

, (89.9%)가
(< -16>)

< -15>

		(%)
	87	74.4
	30	25.6
	117	100.0

: KEDI(2001).

. p.255

< -16>

		(%)
	29	24.4
	78	65.5
	8	6.7
	3	2.5
	1	0.8
	120	100.0

: KEDI(2001).

. p.257

가

. 2001 가

(9)

가

가

가

, 가

가 가 가 “ 가

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. WTO

(, ,)가

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가 2001

7,500

가

(< -17>).

가

IT

< -18>

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가

가

가

가

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가

), (, (가 (가 , 2001. p14).

< -17>

(:)

		1998	1999	2000	2001	
		405	399	500	705	2009
		429	416	437	443	1725
		70	100	165	185	520
		36	38	72	80	226
	가				732	732
		801	861	860	860	3382
			300	150	150	600
	(TBI)	25	70	200	240	535
	(TIC)	50	50	190	200	490
			59	35	20	114
		88	195	200	184	667
				84	100	184
		46	46	59	50	201
					150	150
		276	358	339	395	1368
		150	150	140		440
		510	385	330	315	1540
			89	600	495	1184
					2	2
					15	15
		81	101	130	225	537
		4965	5616	6491	7547	16621

(2001).

. p83

	BK21	IT				
	6,820	1,241	291	700	250	0
	3,796	1,868	398	450	750	270
	3,560	1,758	208	700	850	0
	3,066	869	169	700	0	0
	3,020	15	15	0	0	0
	2,620	590	90	500	0	0
	2,575	167	167	0	0	0
	2,395	1,306	96	600	610	0
	2,017	1,767	277	700	790	0
	877	19	19	0	0	0
	873	1,201	101	450	450	200
	790	46	46	0	0	0
	778	866	16	450	400	0
	757	57	57	0	0	0
	731	300	0	0	300	0
	723	17	17	0	0	0
	690	60	60	0	0	0
	529	20	20	0	0	0

5.

가

. , () . , , (9).

가

가

가

가

가

가

가

가

16

(KEDI, 2001)

가

(70.0%)

(< -19>).

(65.3%)

(< -20>).

,

,

.

(< -21>).

< -19>

(: , %)

	31	25.8
	53	44.2
	16	13.3
	19	15.8
	1	0.8
	120	100.0

: KEDI(2001).

. p.247

< -20>

(: , %)

	0	0.0
	7	5.8
	35	28.9
	69	57.0
	10	8.3
	121	100.0

: KEDI(2001).

. p.248

	94.9	69.6	35.2	49.6	21.0	45.0
()	94.9 ()	76.3 ()	71.4 ()	96.3 ()	69.8 ()	95.0 ()
()	-	59.5 ()	14.7 ()	16.2 ()	9.3 ()	22.1 ()

: (2001).

6.

가 .

가 .

가 가

¹⁰⁾(< -22>)

,
가

가 가 ,

가 .

10) < -22> ,

가 .

가 .

가

가

	1990	1991	1992	1993	1994	1995
	0	0	0	0	0	0
	-90992	-36879	-104884	-182632	-236497	-321898
	-35860	-35548	-51995	-58925	-57475	-54909
	-1477	2464	676	-177	6935	-3279
	116685	80398	59381	39663	36861	18556
	28477	36037	21537	8381	10164	-4021
	33463	36615	24130	38030	30484	17750
	-	-	-	-	-	-
	250511	177062	214871	294498	322077	372514
	-47637	-38030	-24845	-24586	-18471	-9350
	-17579	-11131	28	1684	-3569	3771
	-53746	-45444	-28290	-24259	-20627	1915
	-53340	-42298	-30761	-25990	-22929	-10115
	-100070	-100570	-76533	-59255	-46442	-19164
	-49953	-47308	-29832	-15509	-18383	-4608
	18390	21856	24812	10806	20017	13664
	3128	2776	1705	-1729	-2145	-826
	276204	220581	169368	151529	122441	69172
	-276204	-220581	-169368	-151529	-122441	-69172

	1996	1997	1998	1999	2000	2001
	0	0	0	0	0	0
	-211237	-178319	-134013	-81122	-46939	-113949
	-47245	-44437	-40921	-33357	-43694	-41188
	-21740	-14527	-11838	-6867	-3352	-14233
	12338	27040	20811	1810	13165	1117
	90	7425	2513	2853	-14	-121
	14918	9594	12093	9609	8576	6840
	-	3838	-5568	-1900	3216	5988
	252669	213748	122488	174134	184026	248947
	-7870	-922	8890	-3798	-11134	-8113
	5624	4924	5542	-1446	-4404	-8528
	12187	14100	9365	-2915	-7742	-11628
	-14371	-14597	-2269	-10449	-21590	-1911
	-19522	-21590	1237	-24153	-33538	-36424
	5548	-6215	573	-13205	-25706	-21305
	19704	532	8567	-9375	-8512	-5166
	-1093	-594	2530	181	-2358	-326
	53770	62469	9286	94822	150252	136115
	-53770	-62469	-9286	-94822	-150252	-136115

: () .

가

가 ,
.11)

< -23>

(2001)

(: %)

		()
	10.0	18.4
	17.3	22.4
	17.5	24.6
	20.0	30.3
	13.5	12.4
	13.6	13.7
	12.1	38.6
	9.4	23.0
	7.6	10.2
	15.6	20.4
	8.8	14.9
	10.0	12.8
	11.7	9.1
	13.9	16.7
	10.7	23.0
	8.4	4.5

: (2001).

(2001).

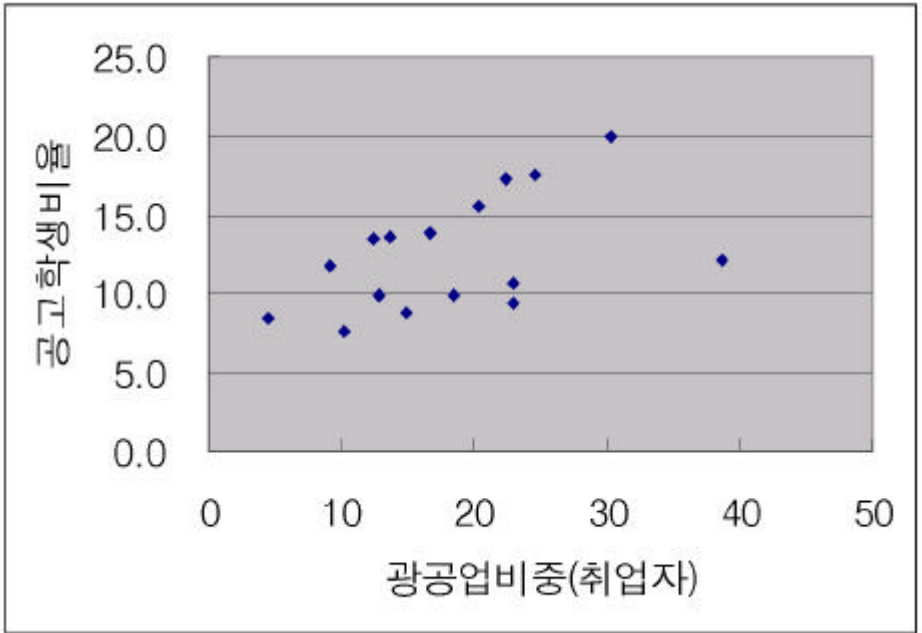
< -23> [-1] ,

0.498

11)

가

가



: (2001).

(2001).

[-1] 16

(2001)

가

(2002)

가

2001

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, (2002) 7
.12) . 가

13) , . 가

가

14) . 가 ,

12) 7 127 . (CNC
20), (CAD, 40),
(2), (
1), (9),
(SW 7),
(48) . .

13) 25 8

, ,
, (,
) , 가 , ,

14) (가
) , (), (),
(PC), () 197 .
3

417
809 .

287

< -24>

.15)

< -24>

가

	7	127	2,310
	5	197	5,742
(가)	8	-	-

: (2002). **Work-net**
. p.153

3,932

15)

『 』

『

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7.

가

(decent job)가

가

가

가

가

가

가

가

가

가

가

가

가

가

가

가 .

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가

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가

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가

가

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가

가

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OECD 가

가

1. (Yorkshire) 16)

가.

(Yorkshire) (Humber) (Y&H)
1994 (Reginal Innovation
System, RIS) . Y&H

100
가
R&D

가

가

16) (2002),

. Y&H

RIS

. Y&H

RIS

1994

1999

EU

5

RIS

가

Liversidge

RIS

RIS

11

Y&H

RIS

, Y&H

RIS

(wealth)

RIS

(Regional Development Agency, RDA)

‘ Y&H RDA ’ 가

RIS

RDA가

RDA

, EU

RDA

RIS

RIS

RIS

•

Y&H RIS , , 11

(champion), 14

(Innovation Board) .

3 , , ,

RIS 가 , , ,

RIS .

RIS ,

RIS

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, , , .

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1)

RIS 가

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- Y&H

- 가 가

- 가

Y&H

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, , , 11 .

2)	RIS	.	
Y&H	11	,	
	RIS	.	
Y&H		,	
400	50		28,200
6		.	
		,	RIS
		.	
750		,	
	(Chemical Industries Regional Centre of Excellence,		
CIRCE)		.	
Hickson & Welch	(168)	(68 5
) EU	(53 5)	290
		.	
		,	
R&D	R&D	.	
,	,	,	
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		.	CIRCE
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CIRCE		.	
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(Humber Chemical Focus) 132 . HCF 가
 , 1 1 ,
 4 . HCF Further Education College

IMPRESS

, 150
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 EU 440 가 .
 .

1)

TEC(Training & Enterprise Councils) BL(Business Links)
 . Coopers &
 Lybrand
 . RIS
 , ,
 . TEC BL

, RIS

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2)

Y&H

가

가

RIS

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(YHUA)

. RIS

3)

Y&H

RIS

. RIS

RIS

가 RIS

1997 8

EU

RIS

. RIS

3

RIS

6

RIS

RIS가

. 1998 4

RIS

가

RIS (Regional Team)

. RIS

RIS

RIS

RIS

2.

/

(Øresund)

17)

가.

Øresund

1995

1

GDP가

2

, 8.3%

17)

(2001).

가

가

가

가

가

가

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Øresund

가

, , , , ,

1)

가 . , 29%

57%가

가

11

가

, 6

가

(Medicon Valley Academy)

2)

가

가 , (Nordic)

60%가

(high-tech)

(low-tech)

R&D

, R&D

(midium-tech)

3) R&D

R&D

R&D

R&D

1%

R&D

가

가

가

가

3. (Alabama) 18)

가.

(Alabama state) .19)

1971

(state)

(ADO: Alabama

Development Office)

(AIDT: Alabama Industrial Development Training)

ADO

AIDT

ADO, AIDT

BMW

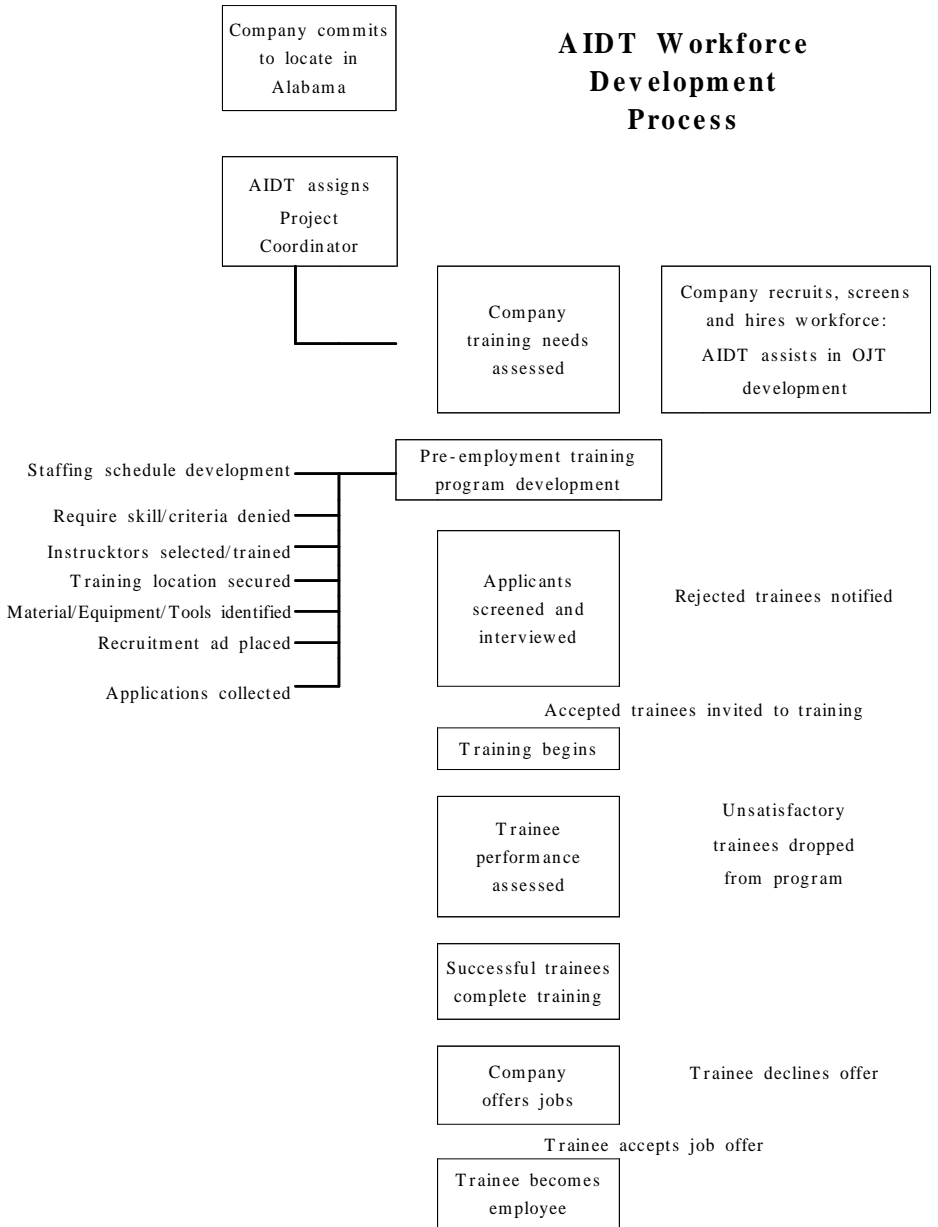
. AIDT

[-1]

18) (2002),

19) www.ado.state.al.us www.aidt.edu

AIDT Workforce Development Process



: www.aidt.edu

[-1]

AIDT

가

가

AIDT

AIDT

AIDT가

가

AIDT

AIDT

1971 ADO

BMW,

4.

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. RIS

가 가 .

가 가

가

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(Regional Development Agency; RDA)

(ADO)

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1. RIS

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(formal &

non-formal education and training system)가

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leadership,

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가

가

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가

(, , incubator facilities, science and technology park, venture capital)

가 가

가 가

가

가

(social capital, localized institutions)

network (eg.

,...),

network

, . / .
 ,
 , , , 가 .
 가 가?
 가?
 가? .
 , , .
 (localized institutions/ social capital) 가?
 () 가?
 가? 가?
 가 .
 .
 / , /
 networking / (incentives),
 (,) 가 .
 .
 가? . (),
 • (), network /
 가?
 .
 가 . , /
 R&D . .
 , .
 .
 가? ? ?

가? (), 가?

(campus venture, research incubator)

가?

/ / 가? 가?

가?

가

(,), incentives (,)

(,)

가?

가?

가? () () 가? 가?

가? 가? (, ,)

가 가?

2. 3

가. 20)

1)

가

, RIS

1 · 2

3 · 4

IT, BT

, TBI

Post-TBI

KAIST,

-1]

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20)

(2002).



- 1 · 2
- 3 · 4
-
- (128)
- IT · BT
- IT(45.7%), BT(9.5%)
- TBI 580
- Post-TBI 125

-
- (116)
- KAIST 12
- ,
- RRC, TIC, BK21,

-
-
- , ,
- Post-TBI
- 13 (140)
- TBI 22 (592)
-



⇒

[- 1]

2)

가)

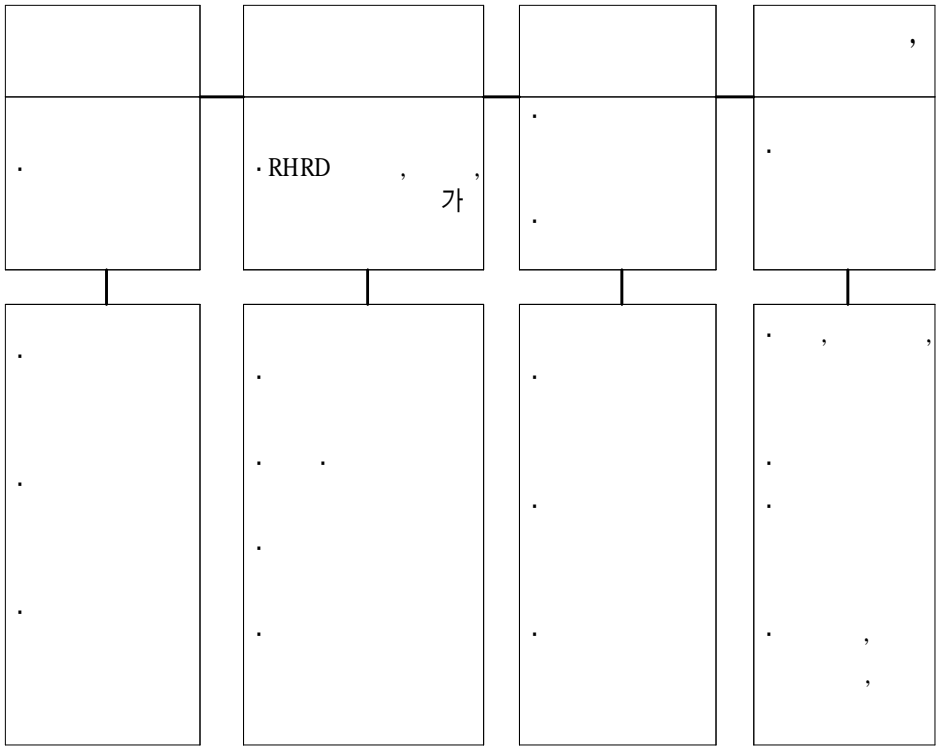
가 .
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 가 .

가 .

가 .

(가)

가



[-2]

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가 가
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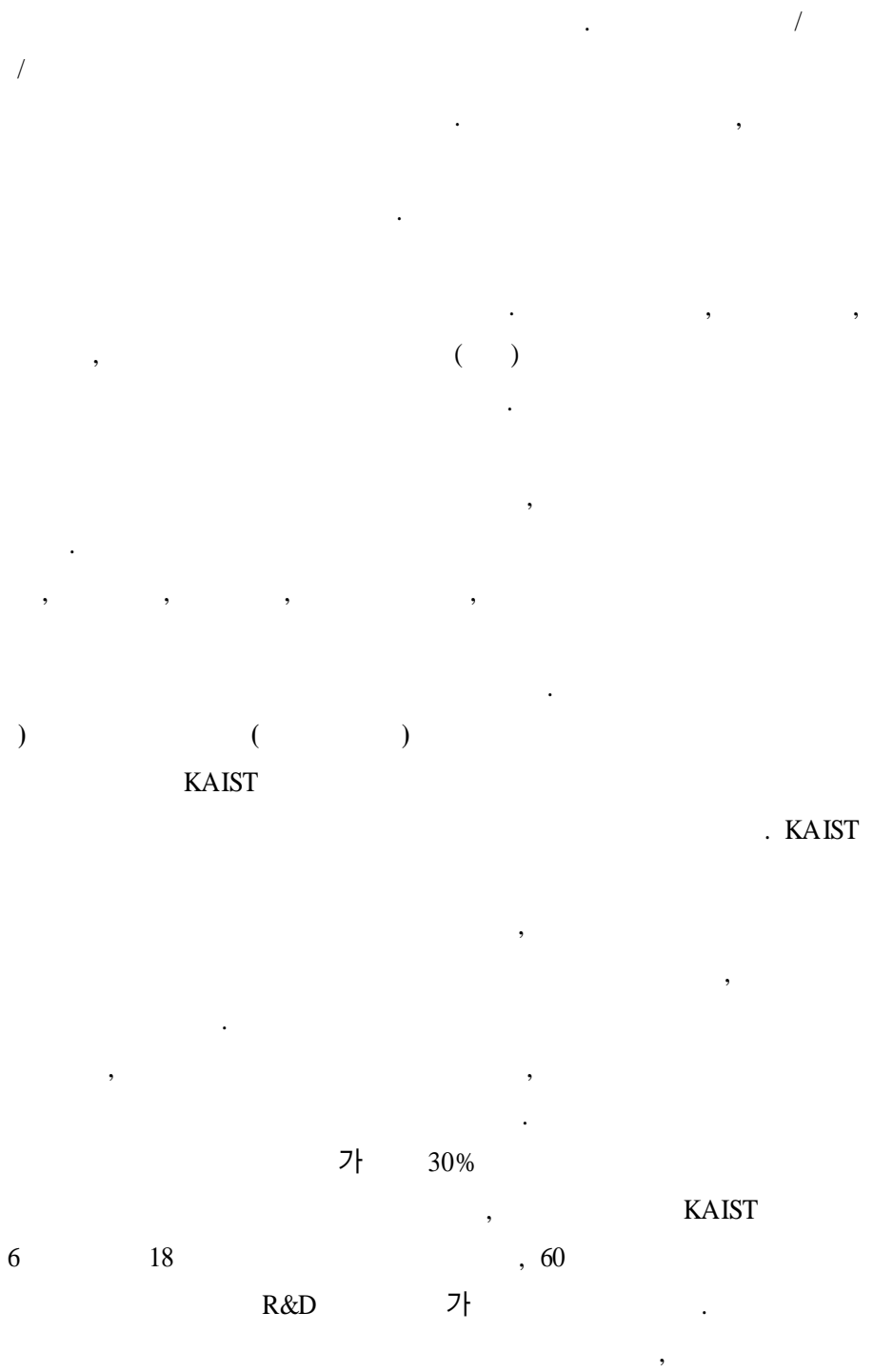
가

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가

가

가



가 , 가 ,
가 , 가
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가 .
「 가 」
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, , ,
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가 . KAIST
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가 , 가
가

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가

가

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가

가 가

(pool)

가

CEO

가

21)

1)

21)

(2002).

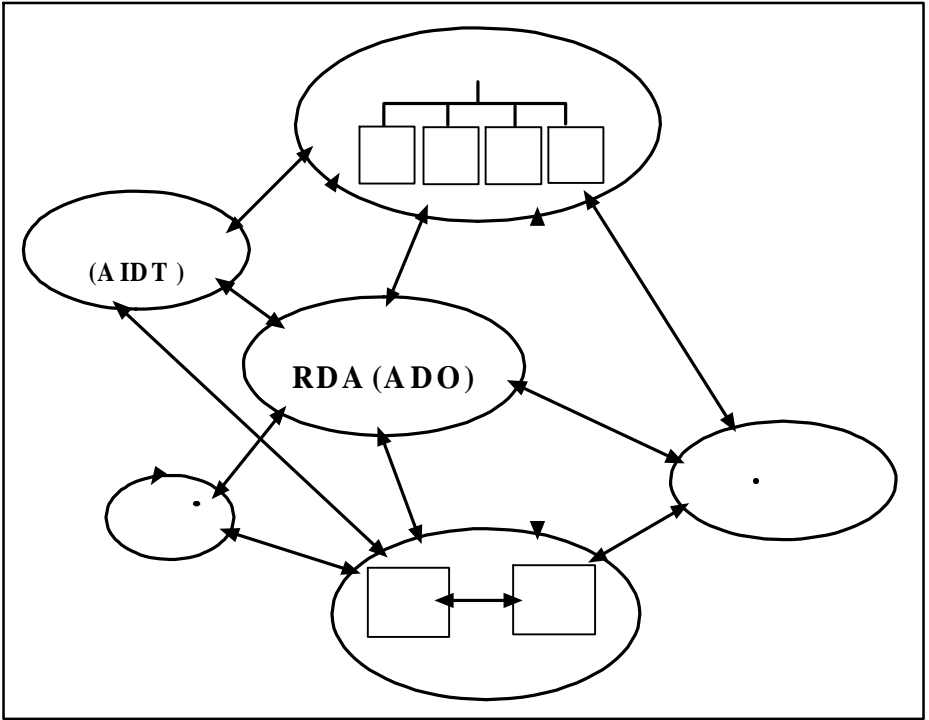
가

가

가

-3]

(Regional Development Agency; RDA)
(ADO)



[-3]

2)

가)

가

가

가

가

RDA

ADO

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가

가

가

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가

Auto Valley

. Auto Valley

가

Auto Valley

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가

(AIDT)

22)

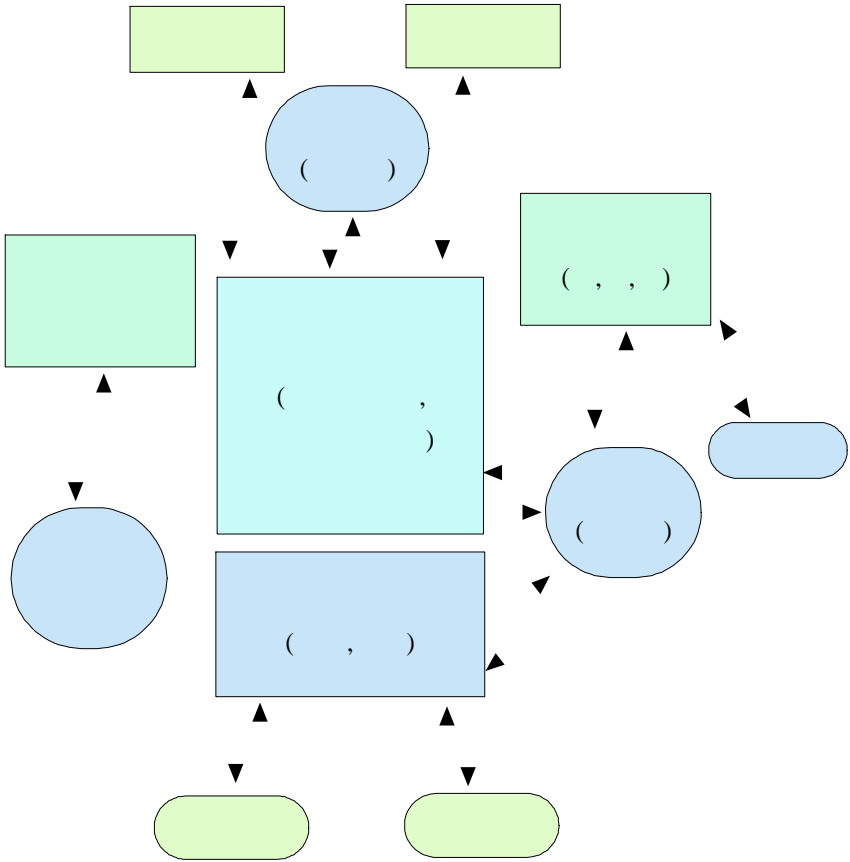
1)

22)

(2002).

:

[-3] .



[-4]

가

(가),
가

가

가

가

가
가

WTO, APEC, OECD

, PATA, ASEAN+3

가

가 .

가 .

가

HKTA, CTA, JTA, TIA, HCVB

가 .

가 .

2)

가)

가

가

(RTI: regional tourism industry)

(HRD: human resource development)

, 7

(),
가

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가

가

가

가

3.

가.

(, ,)

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가

가

(market relationship),
localized institutions)

(social capital,

[-5]

[-6]

network()

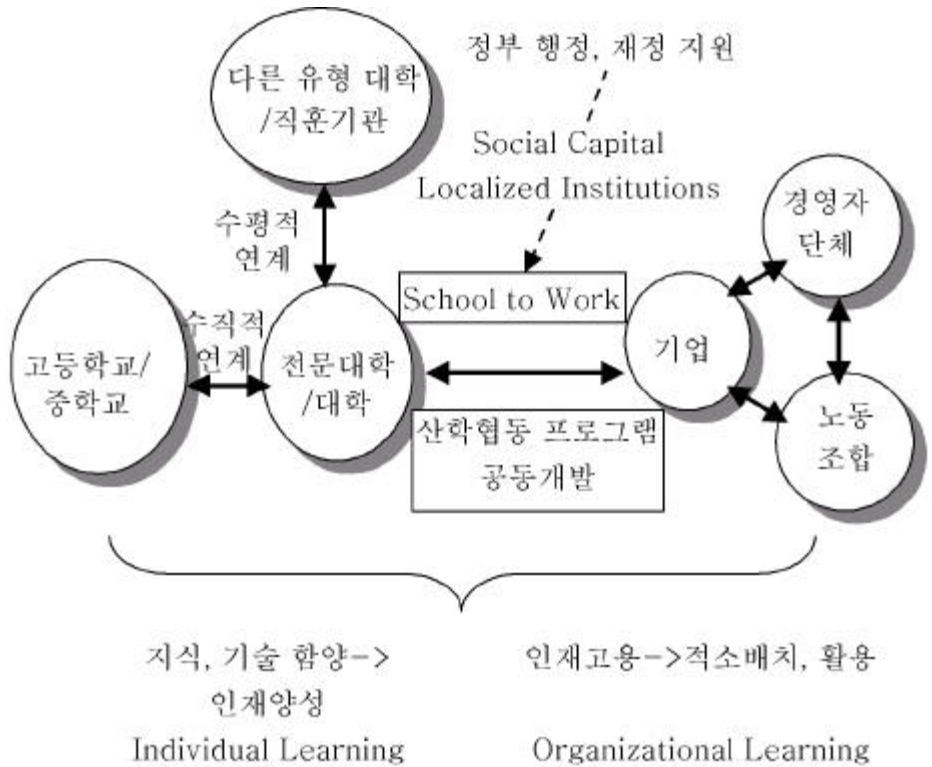
[-5]

[-6]

network

R&D

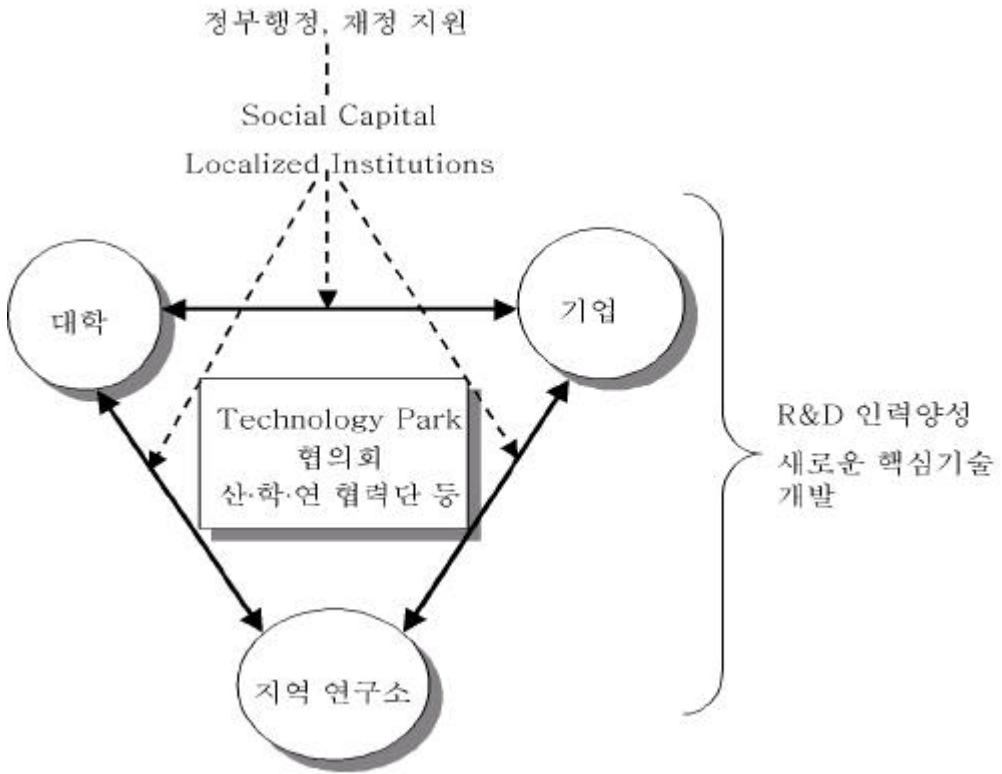
network



[-5]

(1)

- : ① : ;
- , ; ② : ;
- , R&D ; ③ : ;
- ; ④ & : ;
- , R&D ; ⑤ : ;

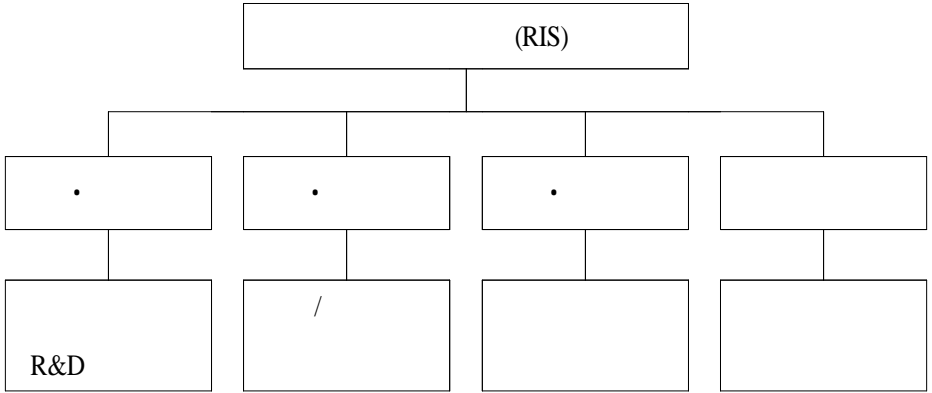


[-6]

(2)

(subsystems)

가



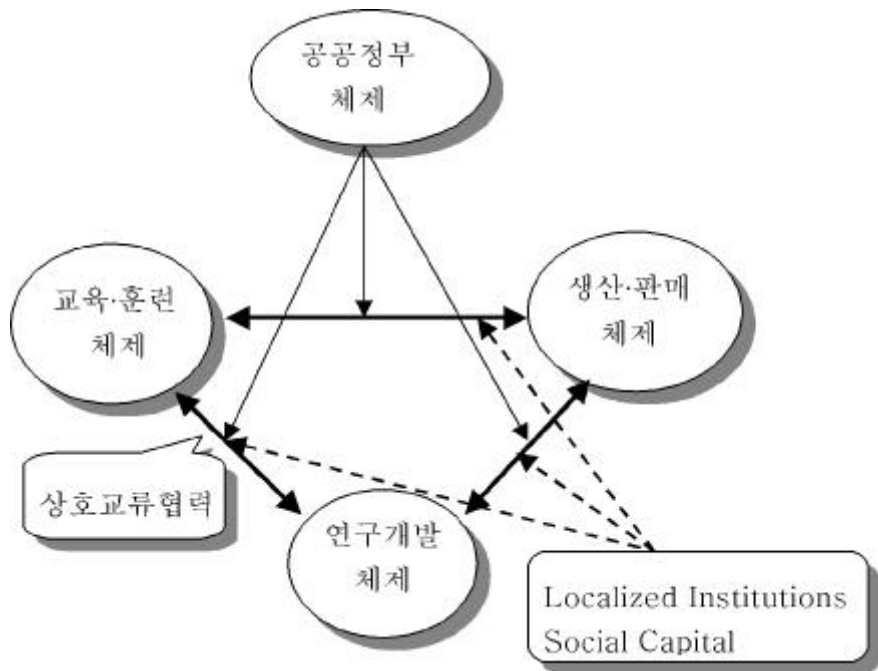
< -1> 가
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< -1> 가

A		B	
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○		○	가
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○		○	無
○	가 •	○	• 無
○	•	○	• 無
○		○	
○		○	
○	•	○	• 無
○		○	無

: Cooke, Philip et al.(1997). "Regional innovation system: institutional and organizational dimensions," *Research Policy* 26. p.p.475-491.

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 가 .
 , .
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 < -1> A 가
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 가 .
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 가 가 .
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 가 ([-7]
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[-7]

• •

가

가

가

incentive

가 가

가 .
가 .

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1.

가.

가 가 (NIS; National Innovation System)

(RIS; Regional Innovation System)

가 (innovation capacity) 가

가가

가 (

) ()²³⁾

(localization)가 가

가

(

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23)

“

”

가 가

(synergy)

(OECD, 1997. p35).

, 가 .

가

(innovation strategy)

(globalization

strategy)

가

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(革新)

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가

가

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가

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(新)

(new combination)

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2002. p612).

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2001. p156).

가

(革新)

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(非)

,

(social innovation)

24)

(system)

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가

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24)

(social innovation)

(, 2001. p156).

OECD

가

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(OECD, 2001. p209~210).

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(nominalistic approach)

(substantial approach)

가

“ (空間) ”

가

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(, 1999. p 16~17).

(論)

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OECD(2001)

(territorial policy)

가

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가

가 ,
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가

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25) 13 ()

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1. .
- 2.
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4. . .
5. .
- 6.
- 7.

가 (, , , , ,), (, , , , ,), (, , , , ,), (, , , , ,) , (, 2001. p255). ,

(technology) 가 (knowledge)

가 (learning region)

가

가 , , , , , 가 , , , , , 가 , . ((IGR; Inter-Governmental

Relation)

, , ,

가

, ,

가

(準)

가

가

가

가

가

가

가

(Chief Innovation Officer: CInO)

,
 .
 (professional manager)가 , 가 (entreprene
 -urial)
 ,
 가 가
 .
 가
 , 가 ‘ ‘
 (, 2002. p321~322). , 가
 가(entrepreneur) 가(innovation
 thinker)
 ,
 ,
 가 .
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 가
 (起債)

26) (2001). ‘ . 10
 1 (2001). .

가

4가

가

가

가

가

가

2.

가.

1)

(division of labor)

) 가 (가가

가

가

가

가

가

가

(, 2000. p7~8).

가

가

가

가

(OECD, 2001. p213).

가

가

가

가

가

가

가

가

가

가

가

가

(相異)

27)

28)

(agent model)

(partnership model) ,

3

가

()

가

가

가

(local initiative)

27)

가

2002. 8. 21

"

()"

가

2002. 7. 29

"

가

"

가

28)

()

가 , 가 . , 가 , (OECD, 2001. p213~214).

가 가 () 가 (awareness) 가

2)

가 , 가 , 가 (knowledge creation) (skill formation) (re-education and training) 가

가

가

가

가

가

가

가

가

가

가

가가

가

(devolution)

(delegation)

가

가

9 2

30)

가

() ,

() ,

가

가 (

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가

(,

2002. p57~58).

11

가

가

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가

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29) 3 ()

1. 9 2 가

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3. 가

가

4. 6. ()

30) 9 () 2

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, .

가 (舊) ()
 (), 가
 (), ()
), 가
 (),
 (), 가가
 () 가 ()
 , 2002. p12~13). 가가

(, 2002. p60)
).

31) (territory)

31)

가

, 가가 가

가 가

가 가

가 가 (

)

가

가 가

가 가

(

) (, 2002. p65),

가 가

, 3 가

, 가

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(< -1 >).³²⁾

32) , , , .

가

“ ” “ ” , “

가

가

.33)

.34)

가 .35)

33)

34)

가

3

(8)

가
가가

720 67
35)

가

가

가 , 가

3) 가

가

(top-down) 가

가 가 , 가

가 가 가 36),

가

가

(調整)

37)

4)

가

“ ” 112

(1),

(2).

36) 2001 12 가

37) “ ”

(同法)

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38)

가

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5)

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(mobility)

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38)

(法名)

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39) 가 .
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 (, 2001. p13).
 가 , 2 3
 (規約)

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39) 142 () 2

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가 , 가 가

(RDA; Regional Development Agency)⁴¹⁾

가 . ‘
(S&T) ‘

, , , , , ,

가 . ‘ , , , , 가

. , . , , ,

41) (RDA) 1999

가
(non-departmental public bodies).

RDA ,
(skill)

(www.RDAUK.org).

2)

가

, () , 가 가 ,

(skill)

가 (OECD, 2001. p19).

가

(policy process) (全)

가

(actor)

(advise)

(social pact)

가

가

1)

가
가
가 (skill),
(OECD, 1997, p43),
(: ,)

2001

6 , , 가

가

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가 ,

.42) , , , ,

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42) (2002. 1). “ ”, 「

(technopolis) 43),

(science park) (technology park) ,

가

가

가

2)

(brain drain) ,

2000 12

43)

3)

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(OECD, 2001. p254)

(intermediary body)

(brokerage)

가 2002 10 17

가

44)

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46)

47)

(TBI; Technology Business Incubator) 48), (TIC; Technology Innovation Center) 49)
21(BK21) 50) 가 .

(pool) ,

46) , , , (, 2001. , p137.

47)).
48) (, 2001).

49) 가 ,

50) 가

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51) 9 ()

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(18⁵²⁾,
20⁵³⁾)

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52) 18 ()
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53) 20 () 가

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가 가 가가
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16 54)

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54) 16 가 (.)

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2) 가 .

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55) , , , , , , , , , .

가 가
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3)

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 .56)
7 ()
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56) (1995). .
 ('95. 7. 2), 177 () 4 .

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1)

가

가

(awareness program)

가

2)

가

가

가

57)

(Network of Innovating Regions)

(www.innovating-regions.org/network/presentation).

(2001).

(2000).

(2001). “

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(2001.11.9)』

(2001).

(2002

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(2000).

가

가 (2001). 2001

가

가

(1995). “

”, 『

(95. 7. 2)』. 177 () 4 .

(1997). “

”, 『

』 97-12 (65)

(2000). “ 가

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(2002).

101

(2002. 8. 9)

(1994).

(2002).

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- (2000). 가 . 2000
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- (2001).
- (2002).
- (2002) **Work-net**
- (2000). 10 .
- (2001). 가 : , , .
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- (2002).
- (2002). “ ”, 「
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- (2001). 가 .
- (2001). 가 () .
- (2002).
- (2001). 4 (Fourth Generation), William L. Miller &
 Langdon Morris .
- (2001).
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- (2001).
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- (2001).

- (2001). “ ” 『 』
6(1): 17-34.
- (2001). “ ”,
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(2001.11.9)』 . 23-53.
- (2001). “ ”,
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(2001. 9. 14)』 . 169-196.
- (2001).
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(2001. 9. 14)』 . 35-63.
- (2001). 3 ().
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ABSTRACT

Human Resources Development Through Regional Innovation System

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1. Purpose of the Study

The effectiveness of the national human resources development policy can only be guaranteed if implemented in conjunction with regional human resources development. Within a society that is characterized by plurality, regionalism and a network society, the uniform application of the human resources development policy by the central government can lead to disharmony and an imbalance between the supply and demand for regional human resources and economic development. Thus when implementing the national human resources development policy, the individual characteristics of cities and local areas must be taken into consideration. Moreover when implementing related policies, there is also the need to attract the participation of related sectors (such as, metropolitan and provincial offices of administration, metropolitan and

provincial offices of education, regional offices of labor administration, universities, vocational education institutes, enterprises, the Small and Medium Business Administration, Chamber of Commerce and Industry as well as the labor unions) as well as the participation of the residents themselves. Human resources development policy can only contribute to actual regional development when it is implemented after thoughtful consideration of the regional industrial distribution as well as education & training and the R&D conditions of the region. Should national human resources development policy be based on the above criteria, its successful implementation becomes possible.

Once these views are taken into consideration, it is easy to comprehend why the construction and operation of a Regional Innovation System (RIS) is regarded as being one of the core strategies for the invigoration of regional development. This research is focused on the search for measures to develop and utilize the human resources necessary to improve the economic efficiency of individual regions through the establishment and management of a RIS. This research has presented the following improvement measures to attain the above-mentioned objectives: the development of RIS and regional human resources development system models compatible with the specific characteristics of individual regions. In addition, based on the above-mentioned models, policy measures as well as an implementation system were also suggested.

2. The concept of regional human resources development

In this research, regional human resources development is defined as the comprehensive efforts by a region to develop, distribute, use, maintain and manage the human resources that are necessary to improve the residents quality of life and to strengthen regional competitiveness. A

Regional Innovation System is defined as the networks linking public and private organizations that can create, apply, modify, expand and distribute a measure designed to bring about improvements in the management of the creation of new knowledge and technologies and organizations necessary for regional industrial and economic development and social innovation measures.

3. The present state of regional human resources development and the relevant problems

Despite the importance of regional human resources development, Korea has just started to recognize the necessity for the development of such policies. The following is a summary of the present state of regional human resources development in Korea and the relevant problems.

First, the widening regional economical gap, which began with the onset of economic development, prevents the invigoration of regional human resources development. This situation has resulted in an exodus of highly skilled human resources from economically weak provinces to the Seoul area.

Second, decent jobs with good working conditions and bright prospects for the future, such as those in the professional and technical engineering sectors as well as those in high administrative positions, are for the most part concentrated in the Seoul, Gyeonggi and Incheon area. This phenomenon reflects the economic gap between Seoul and the provinces and serves to further accelerate the exodus of regional human resources.

Third, the concentration of highly competent human resources in the Seoul area is not only limited to the labor market. In fact, the main reason behind the inability of provincial areas to develop human resources

is that good students strive, above all, to enter universities in Seoul. As such, under the circumstances presently prevailing in Korea, i.e. the weakening of the human resources development functions of local universities, a RIS is indeed very difficult to establish.

Fourth, the regional human resources development project is established and implemented with at its helm government departments, such as, the Ministry of Education & Human Resources Development, Ministry of Labor, Small and Medium Business Administration and with the assistance of local governments and related administrative agencies. However, due to the lack of basic cooperation and interaction between the relevant government organizations and to the lack of a responsible centralized organization, human resources development related policies are ineffectively implemented. In addition, there exist many problems stemming from over investment, a lack of consistent policies, and the lack of cooperation between related organizations.

Fifth, another problem related to regional human resources development is that the implementation of related projects is done in a top-bottom fashion with the central government carrying out the planning while the regional governments are left with no options but to execute these plans. As such, policy-making and the execution of the budget are not implemented in a manner reflecting the actual situation of regions. Therefore, regional governments are hindered by the lack of accumulated data on human resources development.

Sixth, the regional human resources supply system cannot keep up with the demands of the regional industrial sectors. This particular problem stems from the lack of cooperation between the parties concerned with regional human resources development. In addition, this particular problem is also caused by the lack of a comprehensive information infrastructure based on regional characteristics necessary to produce and

provide regional education & training programs as well as information related to the labor market.

4. Examples of human resources development using an RIS

Recently, much research has been carried out by OECD countries on the subject of the establishment of RISs. These projects have focused on the role of strategic industries as the most important factor affecting regional industrial development. Some regions that have implemented regional human resources development policies based on the particular characteristics of their regions economic and social environment have experienced real economic development. The cases of Yorkshire in England, Øresund in Denmark and the Alabama State in the U.S. are good examples of such regions that have experienced economic development. These regional cases yielded the following lessons:

First, the RIS can play the role of a network in maximizing regional innovation ability and in promoting regional competitiveness, by establishing mutual cooperation between the various economically concerned parties, such as enterprises, universities, research institutes and local government and by creating, introducing and extending the regional production process as well as new technologies. RIS efficiency can be maximized when it is formed around the core strategic industries of the region. A RIS comes into existence when the scientific technology and entrepreneurial support systems are combined around the industrial production system, thus forming a new sub-system. The organizations and institutions directly and indirectly connected to this sub-system are positioned at the top of the system. In addition, when establishing the top of this system, it is important to define the role of the local government. By invigorating these networks, the efficiency of the RIS can be increased

two-fold.

Second, to properly develop regional human resources, regional characteristics should be taken into consideration. The parties concerned with regional innovation should consider the regional situation, suggest long-term objectives in order to help the regional residents properly understand, and establish and implement plans to readjust the regional industrial structure, based on this understanding. In order to do so, it is necessary to have a regional cooperative body, such as, the Regional Development Agency (RDA) in England and the ADO in Alabama State, which can ease the sharing of information between the parties concerned with regional innovation and also participate in the development of programs for regional development. By establishing a channel of communication with the parties concerned with regional innovation and sharing each others visions through this cooperative body, regional problems can be resolved.

5. Measures to improve human resources development through the construction of a RIS

In order to search for measures to develop, through a RIS, human resources in a specific region it is necessary to first understand the actual state of the RIS in that region.

First, there is a need to analyze the RIS system within the region, the agencies, organizations as well as RIS related laws and regulations in the relevant region, the leadership of the RIS, the RIS programs already implemented or being planned, and to carry out a comprehensive evaluation of the RIS.

Second, it is necessary to understand the relationship between regional

education & research and regional industries. Moreover, an analysis of the changes in the regional industrial structure should be carried out.

Third, the existence and influence of social capital and localized institutions should be properly understood. It is therefore necessary to analyze the construction of the networks between the related organizations (e.g. the cooperative relationship between enterprises, universities and colleges, and between enterprises and research institutes.), the recognition of the importance of these networks within the related organizations, such as, among the representatives of enterprises and university professors. Furthermore, based on the above-mentioned analyses, it is necessary prior to actually establishing the RIS, to define the roles of the organizations.

This research strived to search for measures to develop human resources in Daejeon, Ulsan and Jeju, and requested, based on the above-mentioned considerations, local development institutes to provide feasible RIS models. The common necessary measures found among all three regions can be summarized as follows. To develop human resources through a RIS, it is necessary to establish and operate various models of RIS that are based on regional characteristics. RIS Models to develop human resources can be established based on the networks and methods already instituted between the related organizations. The core objective of the RIS is to form an institutional basis for human resources development and to establish policies to implement the various RIS models in accordance with the concerned parties wishes.

In order to establish and operate a RIS that is in harmony with the characteristics of an individual region, it is necessary for the central government to delegate some of its related rights and functions to the local government. The following are some of the responsibilities that can be ceded to the local governments: the right to supervise higher education institutes, the expansion of local governments control over research and

the ceding to the local government of financial resources earmarked for industrial technology and related research & development policies.

The management methods and interaction of the organizations making up the RIS can be influenced by the laws and regulations as well as by social and cultural rules that can either promote or hinder innovation (constructive and cooperative interaction). Therefore, related laws, regulations and social & cultural rules should be changed in a manner conducive to promoting innovation. In this case, exchanges and cooperation between organizations on matters pertaining to knowledge, information and other resources will contribute to the creation of new innovation.

6. Implementation system of regional human resources development

This research presented the following basic measures to be taken in order to establish and operate a system to develop regional human resources: 1) the construction of an innovation system that is based on regional characteristics; 2) the establishment and implementation of a human resources development strategy related to the regional development strategy; 3) successive and gradual implementation of the system; 4) increase in the leadership role played by the representatives of local governments; 5) the invigoration of cooperative networks between the related organizations.

Specific policy measures are as follows: First, with regards to the policy measures needed to implement a system to develop regional human resources, this research emphasized the redrawing of the roles of the central and local governments. To attain this objective, this research

suggested the following improvement measures: the establishment of a division of labor for the central and local governments, measures to bring about the central governments delegation of some of its responsibilities to the local governments, the construction of networks designed to coordinate the development of human resources policies at both the national and regional levels, the construction of a cooperation mechanism linking metropolitan & provincial offices of administration and education as well as the strengthening of the cooperation between the local governments.

Second, a system to implement regional human resources development should be designed. To attain this objective, this research suggested the establishment of a new organization to manage and coordinate regional human resources development, and the construction of policy-making cooperative networks linking the various concerned parties.

Third, there is a need to invigorate cooperation between the industrial sector, academia, and the government as well as to reorganize the education system. To attain these objectives, this research suggested increasing the support provided by the industrial sector, academia and the government, cooperation from local governments, the strengthening of the role of regional education organizations, the construction and management of a regional innovation system with regional universities at the center, as well as the strengthening of the support provided by local governments to local universities.

Fourth, a readjustment of the financial mechanism should be implemented. To attain this, this research suggested the construction of an integrated management system to oversee the central governments regional human resources development projects, and emphasized the necessity for the reorganization of the tax system.

Fifth, the construction of a regional human resources development infrastructure was suggested. To attain this, this research suggested the

possibility of the construction of an information infrastructure, the improvement of the evaluation system concerned with human resources development, and the preparation of related laws and regulations.

Lastly, this research emphasized strengthening the awareness of regional human resources development. To attain this, this research suggested that programs to improve residents' awareness should be implemented; local government officials understanding of the issue should be increased, with their related capabilities strengthened.

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