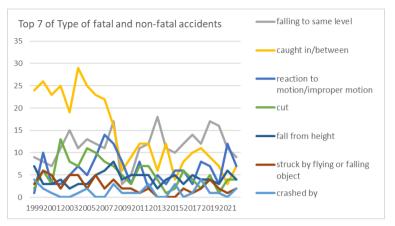
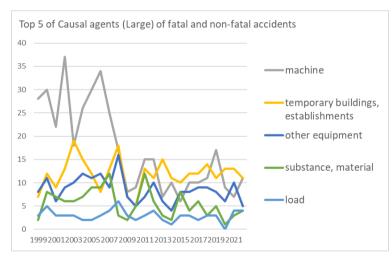
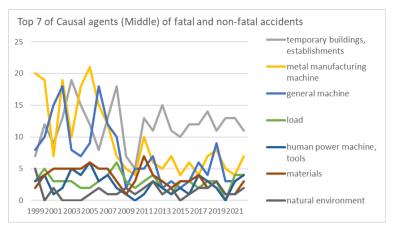
#### Transition of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



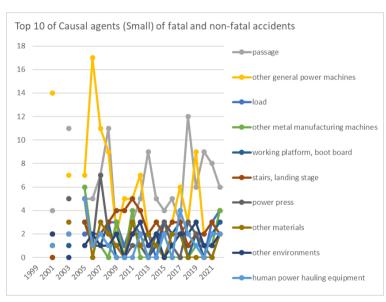
Transition of Top 7 of Type of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



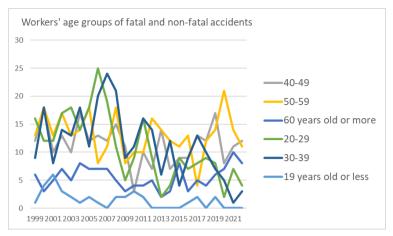
Transition of Top 5 of Causal agents (Large) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



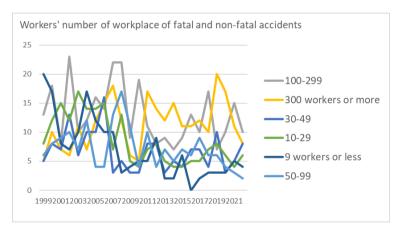
Transition of Top 7 of Causal agents (Middle) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



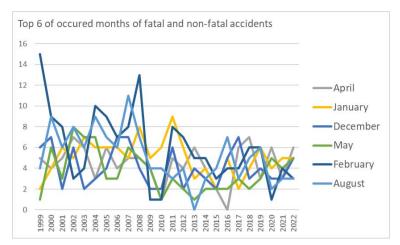
Transition of Top 10 of Causal agents (Small) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



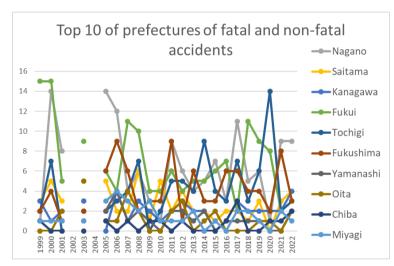
Transition of workers' age groups of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



Transition of workers' number of workplace of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



Transition of Top 6 of occured months of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)



Transition of Top 10 of prefectures of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

#### Transition of Type of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Type of accidents
falling to same level	9	8	7	11	15	11	13	12	11	17	3	5	11	12	18	11	10	12	14	12	17	16	11	9	275	falling to same level
caught in/between	24	26	23	25	19	29	25	23	22	16	6	9	12	12	6	12	4	8	10	11	9	7	3	7	348	caught

																										in/between
reaction to motion/improper motion	1	10	3	3	5	7	5	9	14	12	8	3	8	2	5	3	6	6	3	8	7	3	12	7	150	reaction to motion/improper motion
cut	2	6	3	13	8	7	11	10	8	7	5	3	7	7	4	1	2	6	4	2	5	1	4	4	130	cut
fall from height	7	3	3	4	2	3	3	5	6	8	4	5	5	5	2	4	5	3	5	4	4	3	6	4	103	fall from height
struck by flying or falling object	3	6	5	2	5	5	2	5	2	4	2	2	1	2				2	1	2	4	2	1	2	60	struck by flying or falling object
crashed by	4	2	1			1	2			3	1	1	1	3			3		1	4	1	1		2	31	crashed by
crash	2	4	2	7	1	3	1	3	1	3	5	1	5	4	1	3	5	3	2	1	2	1	2	1	63	crash
electric shock	1	1	1	1	1		1														1			1	8	electric shock
fire							1		1				1				2							1	6	fire
contact to harmful substance	1		1	2	2	2	2	2	4			2	4			1	1	1	2	1	1		1		30	contact to harmful substance
contact to high/low- temperature	1	2	3	1	1		1	3	2		2			2		1	2		1		1		2		25	contact to high/low- temperature
traffic accident (public			1	1	2	3	1				2	8	2			1		1	1	1	1				25	traffic accident (public road)
collapse		2	1	1		1		2		1			1	2	1	1	1		1	1			1		17	collapse
others	2								2	1					1						1	9			16	others
unclassifiable		2																							2	unclassifiable
injury to the sole of the foot		1																							1	injury to the sole

drown												1													1	drown
explosion																										explosion
burst																										burst
traffic accident																										traffic accident
(others)																										(others)
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

Transition of Causal agents (Large) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Causal (L) agents
machine	28	30	22	37	18	26	30	34	25	17	8	9	15	15	7	10	6	10	10	11	17	9	7	11	412	machine
temporary buildings, establishments	7	12	9	13	19	15	12	8	13	18	7	5	13	11	15	11	10	12	12	14	11	13	13	11	284	temporary buildings, establishments
other equipment	8	11	6	9	10	12	11	12	9	16	7	5	7	10	6	4	8	8	9	9	8	6	10	5	206	other equipment
substance, material	2	8	7	6	6	7	9	9	12	3	2	5	12	6	3	2	8	4	6	3	5	1	3	4	133	substance, material
load	3	5	3	3	3	2	2	3	4	6	3	2	3	4	2	1	3	3	2	3	3		4	4	71	load
environment	5		2				1	2	1	1	2	1	2	3	1	2		1	2	2	3	1	1	2	35	environment
others	3	6		1	3	4	1	4	8	6	6	2	4	1	4	3	5	3	1	3	5	12	4	1	90	others
crane, conveying machine	1	1	5	2	2	6	2	2	1	5	3	11	2	1		5	1	1	3	2	2	1	1			crane, conveying machine
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

# Transition of Causal agents (Middle) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Causal (M)
temporary buildings, establishments	7	12	9	13	19	15	12	8	13	18	7	5	13	11	15	11	10	12	12	14	11	13	13	11	284	temporary buildings, establishments
metal manufacturing machine	20	19	7	19	10	18	21	15	12	7	5	4	10	6	5	7	4	6	4	7	8	5	4	7	230	metal manufacturing machine
general machine	8	10	15	18	8	7	9	18	12	10	2	5	5	7	2	3	2	3	6	4	9	3	3	4	173	general machine
load	3	5	3	3	3	2	2	3	4	6	3	2	3	4	2	1	3	3	2	3	3		4	4	71	load
human power machine, tools	3	4	1	2	5	4	6	3	4	2	1		1	3	2	1	2	1	4	3	2		3	4	61	human power
materials	2	4	5	5	5	5	6	5	5	3	1	3	7	4	3	2	3	3	4	2	3	1	1	3	85	materials
natural environment	5		2				1	2	1	1	2	1	2	3	1	2		1	2	2	3	1	1	2	35	natural environment
no causal agent	1	5			3	4		3	7	3	5	1	3	1	4	3	5	2		3	2	3	4	1	63	no causal agent
hazards, harmful substances		4	2	1	1	2	3	4	7		1	2	5	2			5	1	2	1	2		2	1	48	hazards, harmful substances
kiln, caldron	1		1		1																			1	4	kiln, caldron
tools	2	1	1	2	2	4	4	7	4	9	3	3	4	7	2	1	4	2	2	6	5	4	4		83	tools

other equipments,	2	5	3	4	1	3	1	2	1	3	3	2	2		2	1	2	5	3		1	2	3	51	other equipments, facilities
vehicle			1	1	2	3	2			3	2	9	2			2		1	2	2	1		1	34	vehicle
other causal agent	2	1					1	1	1	3	1		1					1	1		3	9		25	other causal agent
conveying machine	1		3	1		1		2	1	1	1	2		1		3	1		1			1		20	conveying machine
power transmission mechanism		1				1		1	1		1			2				1				1		9	power transmission mechanism
crane		1	1			2				1											1			6	crane
electric equipment		1			1											1								3	electric equipment
chemical facilities				1						1														2	chemical facilities
welding equipment						1				1														2	welding equipment
unclassifiable				1								1												2	unclassifiable
engine																									engine
woodworking machine																									woodworking machine
construction machine																									construction machine
mobile silviculture																									mobile

machine																										silviculture
machine																										machine
pressure vessel																										pressure vessel
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

Transition of Causal agents (Small) of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Causal (S) agents
passage			4		11		5	5	7	11	2	1	3	5	9	5	4	5	3	12	6	9	8	6	121	passage
other general power machines			14		7		7	17	11	9	2	5	5	7	2	3	2	3	6	3	9	2	3	4	121	other general power machines
load			2		2		2	2	2	3	3	1	3	2	2		3	2	2	3	2		3	4	43	load
other metal manufacturing machines					1		6	1	1		3		4			2					1	1	1	4	25	other metal manufacturing machines
working platform, boot board			1		1		3	1	1	3			2	2		1	3	2	3		2		2	3	30	working platform, boot board
stairs, landing stage					2		3	1	2	3	4	4	5	4	2	3	2	3	3	1	2	2	3	2	51	stairs, landing stage
power press			1		5		5	1	7	2	1		1	1		2	3	1		3	2	1		2	38	power press
other materials			2		3		5		3	2	1		3	1	2	1		2	2					2	29	other materials
other environments			2				1	2	1	1	2		2	3	1	2		1	2	2	3	1	1	2	29	other environments
human power hauling equipment			1		2		5	1	2	1				2			2		4	2	1		2	2	27	human power hauling equipment
hand tool					3		1	2	2	1	1		1	1	2	1		1		1	1		1	2	21	hand tool
no causal agent					3			3	7	3	5	1	3	1	4	3	5	2		3	2	3	4	1	53	no causal agent
metal material			3		2		1	4	2	1		3	4	3	1	1	3	1	2	2	2	1	1	1	38	metal material

<u> </u>	 		 	 																			<u> </u>
drill press, milling machine		2	2	1	2	1	1			2		2	1		1		2				1	18	drill press, milling machine
inflammable substance		1	1	1		2		1		1	1			2				1		1	1	13	inflammable substance
kiln, caldron			1																		1	2	kiln, caldron
lathe		1	2	7	9	3	4		2	2	5	2	2	1		3	1	3	2	1		50	lathe
other tools		1	1	4		1	6	2	3		4	1	1	3	1	1	5	1	3			38	other tools
other equipment,		3	1	1	2	1	3	3	2	2		2	1	2	5	3		1	2	3		37	other equipment,
ladder			1		7	3	3	1		4	3	1		1	1	1	1	3		4		34	ladder
cars, bus, motorcycle		1	2	2			3	2	9	2			2		1	2	2	1		1		30	cars, bus, motorcycle
grinding machine, buffing machine		3		2	2			1	2	1		1			4	1	1	2	1	2		23	grinding machine, buffing machine
harmful substance		1		2	4	5			2	3	1			1	1	2				1		23	harmful substance
other causal agent				1	1	1	3	1		1					1	1		3	9			22	other causal agent
building, establishment		2	4		1	2				2		1			1	2	1	1				17	building, establishment
other temporary buildings, establishments		1	1	1		1	1	1		1		2	2	1	1				2			15	other temporary buildings, establishments
machine/equipment as load		1	1		1	2	3		1		2		1		1			1		1		15	machine/equipment
power transmission					1	1		1			2				1				1			7	power transmission

mechanism																					mechanism
forklift		1			2	1		1						1						6	forklift
truck		1									1		1		1			1		5	truck
other hazards, harmful substances										1				2		1	1			5	other hazards, harmful substances
conveyor		1					1		2											4	conveyor
industrial robot				1		1	1													3	industrial robot
roll machine (except printingroll machine)				1	1															2	roll machine (except printingroll machine)
injection molding machine		1														1				2	injection molding machine
crane		1															1			2	crane
other powered conveying machines													2							2	other powered conveying machines
other electrical equipment			1										1							2	other electrical equipment
slinging tool																	1	1		2	slinging tool
roof, beam, haze, crossbeam, principal rafter		1										1								2	roof, beam, haze, crossbeam, principal rafter
food manufacturing machine																		1		1	food manufacturing
printing machine			1																	1	printing machine
elevator, lift							1													1	elevator, lift

chemical facilities						1								1	chemical facilities
arc welding equipment						1								1	arc welding equipment
other kiln, caldron		1												1	other kiln, caldron
opening											1			1	opening
lumber, bamboo												1		1	lumber, bamboo
stone, sand,					1									1	stone, sand, substance
high/cold temperature environment							1							1	high/cold temperature environment
unclassifiable							1							1	unclassifiable
engine															engine
circular sawing															circular sawing
band sawing machine															band sawing machine
wood planer machine															wood planer machine
hollow chisel mortiser, wood borer															hollow chisel mortiser, wood borer
chamfering machine, router, woodworking															chamfering machine, router, woodworking

milling machine													milling machine
chain saw													chain saw
other woodworking													other woodworking
machines													machines
leveling,													leveling,
transporting or													transporting or
loading machine													loading machine
excavating machine													excavating machine
foundation work													foundation work
machine													machine
hardening machine													hardening machine
demolition machine													demolition machine
vehicle for high lift													vehicle for high lift
work													work
other construction													other construction
machines													machines
forging pressure													forging pressure
hammer													hammer
shearing machine													shearing machine
centrifugal machine													centrifugal machine
mixer, grinder													mixer, grinder
felling machine													felling machine
mobile logging													mobile logging
machine													machine
skyline yarding													skyline yarding

machine													machine
other mobile													other mobile
silviculture machine													silviculture machine
mobile crane													mobile crane
derrick crane													derrick crane
cargo lifting													cargo lifting
appliance													appliance
gondola													gondola
lumberyard													lumberyard
equipment, logging													equipment, logging
cableway													cableway
simple skyline													simple skyline
yarding equipment													yarding equipment
other powered													other powered
crane													crane
railway equipment													railway equipment
loader													loader
straddle carrier													straddle carrier
rough terrain hauler													rough terrain hauler
railway vehicle													railway vehicle
other vehicles													other vehicles
boiler													boiler
pressure vessel													pressure vessel
other pressure													other pressure

vessels																										vessels
gas welding																										gas welding
equipment																										equipment
other welding																										other welding
equipment																										equipment
industrial dryer																										industrial dryer
transmission																										transmission
electric power																										electric power
facilities																										facilities
human power																										human power
cranes																										cranes
human power																										human power
machine																										machine
scaffolding																										scaffolding
timbering																										timbering
explosive substance																										explosive substance
inflammable gas																										inflammable gas
radiation																										radiation
natural ground,																										natural ground,
rock																										rock
standing tree																										standing tree
water																										water
abnormal																										abnormal
environment																										environment
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

### Transition of workers' age groups of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Age
40-49	12	18	10	13	10	17	12	13	12	15	11	3	10	7	14	7	9	9	13	12	17	8	11	12	275	40-49
50-59	13	18	13	17	13	14	18	8	11	18	8	10	10	16	14	12	11	13	4	12	14	21	14	11	313	50-59
60 years old or	6	3	5	7	5	8	7	7	7	5	3	4	4	5	2	3	8	3	5	4	6	7	10	8	132	60 years old or
more				,				,	,				•												132	more
20-29	16	12	12	17	18	14	18	25	19	11	5	9	16	9	2	4	9	7	8	9	8	2	7	4	261	20-29
30-39	9	18	8	14	13	18	11	20	24	21	9	11	16	14	6	12	4	9	13	10	7	5	1	3	276	30-39
19 years old or less	1	4	6	3	2	1	2	1		2	2	3	2					1	2		2				34	19 years old or less
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

### Transition of workers' number of workplace of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Workers scale
100-299	13	18	8	23	10	12	16	14	22	22	9	19	11	8	9	7	9	13	10	17	7	10	15	10	312	100-299
300 workers or	_	10	7	6	11	7	12	15	18	12	6	5	17	14	12	15	11	11	12	10	20	17	11	8	272	300 workers or
more							12	כו	10	12			'	14	12	13			12		20	17		0	272	more
30-49	5	8	7	13	6	10	10	16	3	5	3	3	8	8	3	5	4	7	7	4	10	3	5	8	161	30-49
10-29	8	12	15	12	17	14	14	15	7	13	5	4	7	8	5	4	4	5	5	7	8	6	4	6	205	10-29
9 workers or less	20	17	8	7	10	17	12	10	10	3	4	5	5	9	2	2	6		2	3	3	3	5	4	167	9 workers or less
50-99	6	8	9	10	7	12	4	4	13	17	11	4	10	4	7	5	7	6	9	6	6	4	3	2	174	50-99
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

Transition of occured months of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Month
April	5	4	5	7	6	3	6	4	5	5	4	1	5	4	6	4	2		6	7	3	6	3	6	107	April
January	2	4	6	5	7	6	6	6	5	8	5	6	9	6	3	4	2	5	2	4	6	4	5	5	121	January
December	6	7	2	6	2	3	4	7	7	4	2	2	6	2	4	3	2	5	7	3	4	3	3	5	99	December
May	1	6	3	8	7	7	3	3	6	5	4	1	3	2	1	2	2	2	3	2	3	5	4	5	88	May
February	15	9	8	3	4	10	9	7	8	13	1	1	8	7	5	5	3	4	4	6	6	1	4	3	144	February
August	4	9	6	8	6	9	7	6	11	7	4	4	3	4		3	4	7	3	5	6	2	3	3	124	August
September	3	5	8	13	10	6	9	10	2	9	5	5	4	5	4	4	4	2	3	2	2	1	2	3	121	September
November	4	6		3	1	6	4	6	6	1	4	12	5	4	2	3	4	4	5	4	4	9	3	2	102	November
July	2	7	2	4	3	6	8	9	6	7	3	3	2	3	4	2	4	1	2	5	6	2	3	2	96	July
June	4	7	4	3	10	4	3	3	4	3		3	5	3	2	4	3	5	7	1	5	3	7	2	95	June
March	4	3	5	8	2	5	5	6	8	4	4	1	7	6	3	2	8	1	2	3	6	2	2	1	98	March
October	7	6	5	3	3	7	4	7	5	6	2	1	1	5	4	2	3	6	1	5	3	5	4	1	96	October
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

# Transition of prefectures of fatal and non-fatal accidents in 011303 optical instruments in Japan (1999-2022)

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Prefecture
Nagano	1	14	8		5		14	12	4	6	3	1	9	6	4	5	7	3	11	5	6	1	9	9	143	Nagano
Saitama	3	5	3		3		5	2	2	6	1	5	2	4	2	2	1	2	2	1	3		3	4	61	Saitama
Kanagawa	3	1	2		3			4	1	3	2	1	2	3	2	2		1	3	2	2	2	2	4	45	Kanagawa
Fukui	15	15	5		9		6	4	11	10	4	4	6	4	5	5	6	7	2	11	9	8	2	3	151	Fukui
Tochigi	2	7			2		2	3	4	7		2	5	5	4	9	4	3	7	3	6	14	2	3	94	Tochigi
Fukushima	2	4	1		2		6	9	6	2	3	3	9	1	6	3	3	6	6	4	4	2	8	3	93	Fukushima
Yamanashi	1	1	1		1		2	4	1	2	1		2	2	1	2		1	1	1	1			2	27	Yamanashi

			السال	 السسا						ا				<u> </u>	الـ			ال	<u> </u>	ال				1
Oita			2	5	1	1	4	2			2	3		1	2				1	1		2	27	Oita
Chiba	1				1		1		1	1		1				1	3			1	1	2	14	Chiba
Miyagi	1	1	1	1	3	4	3	2	3	1	1	1	2		1		2	2	1		2	1	33	Miyagi
Yamagata	2	2	3		1	3	1	3	1	2	1	1	2		1	3	1	2	2			1	32	Yamaga
lwate		1	2			1	5		3	2	1	1		1					1	3	1	1	23	lwate
Niigata	1	1	1	1	1	1	1	1		1	1	1	2	2			1	2	3		1	1	23	Niigata
Gunma			1					1	1			1							1	1		1	7	Gunma
Fukuoka					1		1				1							1			1	1	6	Fukuoka
Akita	3	8	3	4	1	5	4	3	4	1	4	3	3	2	1	1	1	2	3	3			59	Akita
Tokyo	6	1	2	7	7	3	4	4	5		5	1			2	1	1	1	1		3		54	Tokyo
Aichi	1	4	3	3	2	4	5	4	2		3	6	1	1	2	2		4	1	3	3		54	Aichi
Osaka	1	2	3	3	1	1	2	7		5	1	3	1		3	1	1			1	1		37	Osaka
lbaraki	2	1	3	1	4	1	4	2		8		1		1	1	1	1		3		1		35	Ibaraki
Aomori	4		3	2	1	2	5	3	1			2	1	1	3	5		1					34	Aomori
Miyazaki	1			1	1				1						1	2		1	5		1		14	Miyazak
Kyoto	2			2	3	1				1										2	2		13	Kyoto
Wakayama	1			1	1	2	1	2			1	1	1		1		1						13	Wakayaı
Shizuoka	1	1	2	2	1	1									1	1	1						11	Shizuok
Shiga	2	2		2	1	2	1							1									11	Shiga
Gifu						1		1										4					6	Gifu
Mie			1		2					1			1										5	Mie
Hyogo	1	1				2		1															5	Hyogo
Nagasaki			1							1	1					1			1				5	Nagasak

Hokkaido											1		1				1					1			4	Hokkaido
Nara			1		1						1														3	Nara
Okayama			1						1																2	Okayama
Toyama								1																	1	Toyama
Tokushima									1																1	Tokushima
Ehime			1																						1	Ehime
Kagoshima		1																							1	Kagoshima
Ishikawa																										Ishikawa
Tottori																										Tottori
Shimane																										Shimane
Hiroshima																										Hiroshima
Yamaguchi																										Yamaguchi
Kagawa																										Kagawa
Kochi																										Kochi
Saga																										Saga
Kumamoto																										Kumamoto
Okinawa																										Okinawa
total	57	73	54	71	61	72	68	74	73	72	38	40	58	51	38	38	41	42	45	47	54	43	43	38	1,291	total

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