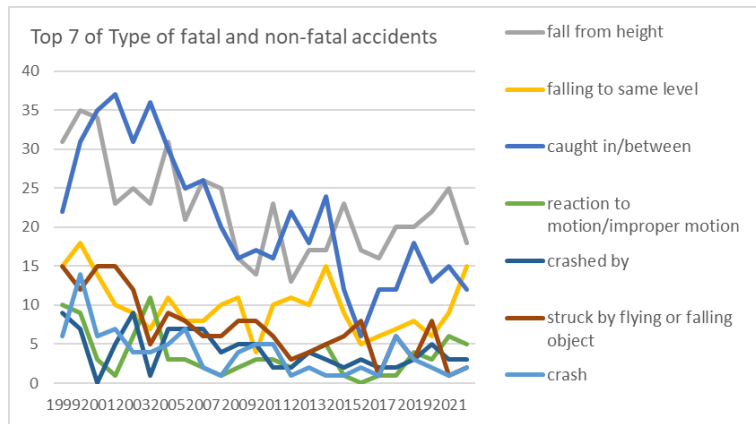
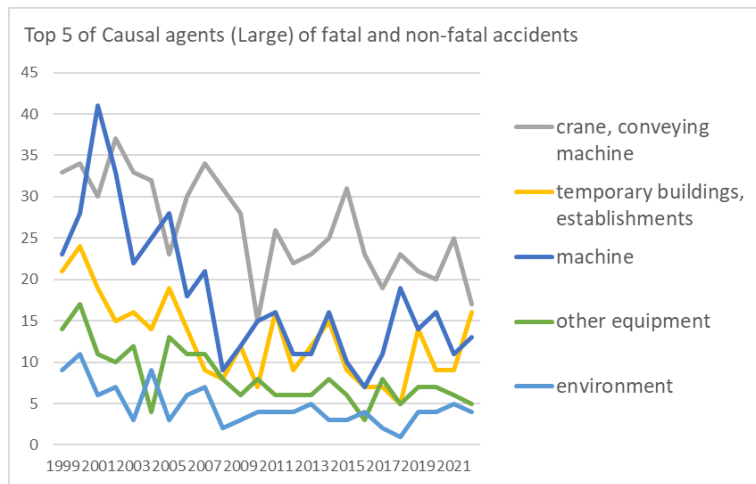


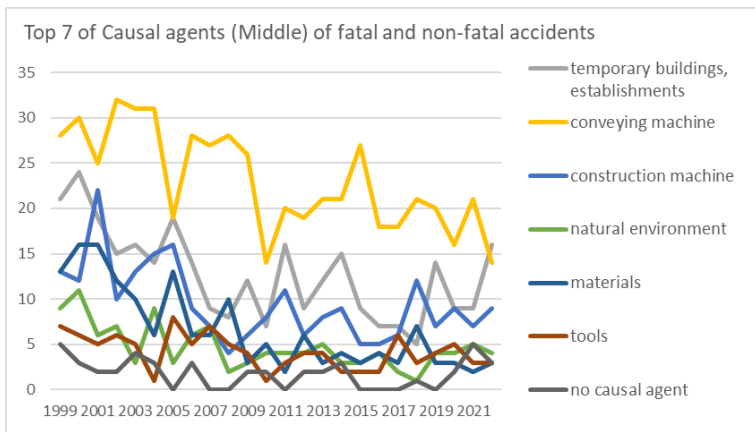
Transition of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



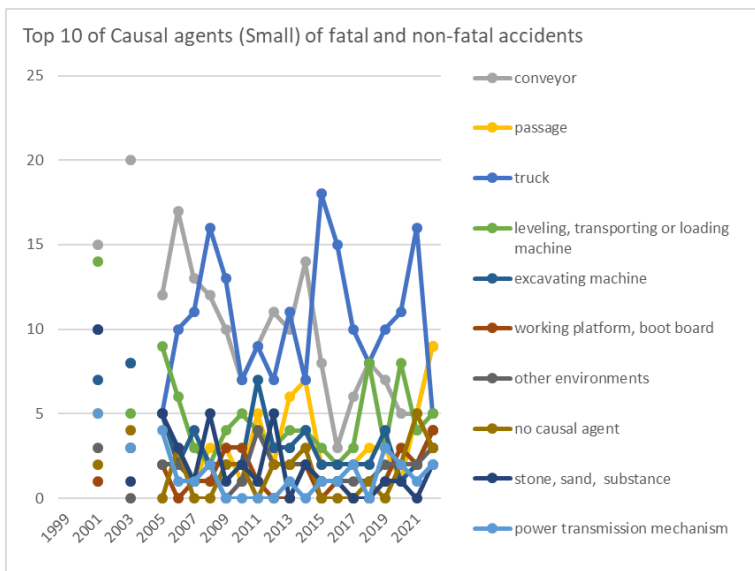
Transition of Top 7 of Type of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



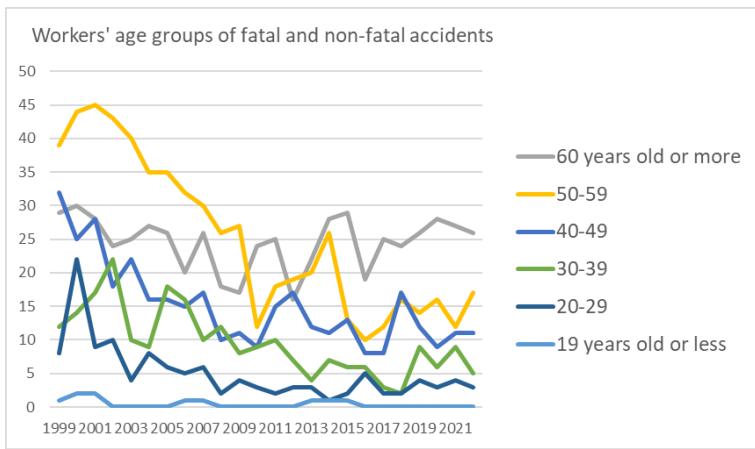
Transition of Top 5 of Causal agents (Large) of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



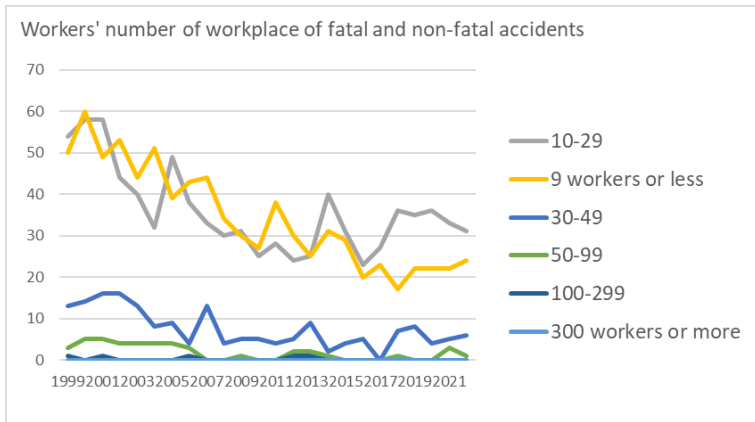
Transition of Top 7 of Causal agents (Middle) of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



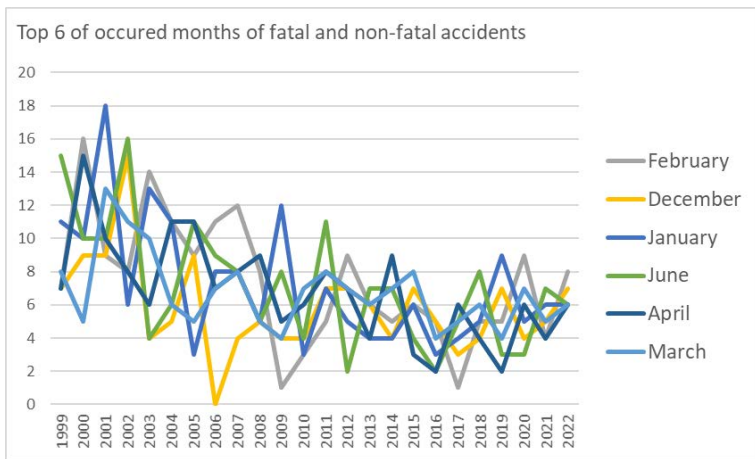
Transition of Top 10 of Causal agents (Small) of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



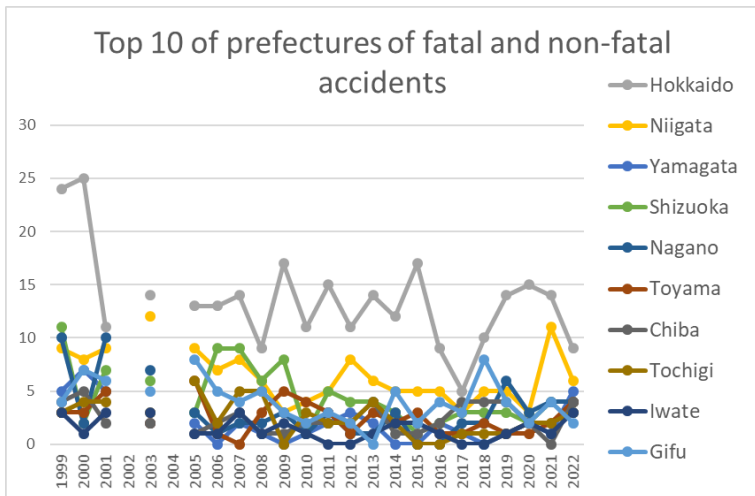
Transition of workers' age groups of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



Transition of workers' number of workplace of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



Transition of Top 6 of occurred months of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)



Transition of Top 10 of prefectures of fatal and non-fatal accidents in 020202 gravel digging in Japan (1999-2022)

Transition of Type of fatal and non-fatal accidents in 020202 gravel digging 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
fall from height	31	35	34	23	25	23	31	21	26	25	16	14	23	13	17	17	23	17	16	20	20	22	25	18	535	fall from height
falling to same level	15	18	14	10	9	7	11	8	8	10	11	4	10	11	10	15	9	5	6	7	8	6	9	15	236	falling to same level

caught in/between	22	31	35	37	31	36	30	25	26	20	16	17	16	22	18	24	12	6	12	12	18	13	15	12	506	caught in/between
reaction to motion/improper motion	10	9	3	1	6	11	3	3	2	1	2	3	3	2	4	5	1		1	1	4	3	6	5	89	reaction to motion/improper motion
crashed by	9	7		5	9	1	7	7	7	4	5	5	2	2	4	3	2	3	2	2	3	5	3	3	100	crashed by
struck by flying or falling object	15	12	15	15	12	5	9	8	6	6	8	8	6	3	4	5	6	8	1	6	3	8	1	2	172	struck by flying or falling object
crash	6	14	6	7	4	4	5	7	2	1	4	5	5	1	2	1	1	2	1	6	3	2	1	2	92	crash
traffic accident (public road)	2	4	6	6	2		1		5	1	4		3	2	1		2	4	3	3	1	1	3	2	56	traffic accident (public road)
collapse	5	2	5	6	1	3	1	3	3		1	1	2	1			2	1	2	2	1			1	43	collapse
cut		2	3	6		2		4	2					3		2	1	1	3	1	2	1		1	34	cut
others	1	1					1	1	1								2		1	1				1	10	others
contact to high/low-temperature	4		5	1	1	1	1		1								1		2		1	1			19	contact to high/low-temperature
drown		1			1	1		1							1	1		1							7	drown
explosion			2											2											4	explosion
injury to the sole of the foot	1						1		1																3	injury to the sole of the foot
contact to harmful substance																1						1			2	contact to harmful substance
electric shock		1				1																			2	electric shock

burst							1								1												2	burst
traffic accident (others)																											2	traffic accident (others)
unclassifiable			1																								1	unclassifiable
fire																												fire
total	121	137	129	117	101	95	101	89	90	68	67	57	70	62	62	74	64	48	50	61	65	62	63	62	1,915	total		

Transition of Causal agents (Large) of fatal and non-fatal accidents in 020202 gravel digging 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
crane, conveying machine	33	34	30	37	33	32	23	30	34	31	28	15	26	22	23	25	31	23	19	23	21	20	25	17	635	crane, conveying machine
temporary buildings, establishments	21	24	19	15	16	14	19	14	9	8	12	7	16	9	12	15	9	7	7	5	14	9	9	16	306	temporary buildings, establishments
machine	23	28	41	33	22	25	28	18	21	9	12	15	16	11	11	16	10	7	11	19	14	16	11	13	430	machine
other equipment	14	17	11	10	12	4	13	11	11	8	6	8	6	6	6	8	6	3	8	5	7	7	6	5	198	other equipment
environment	9	11	6	7	3	9	3	6	7	2	3	4	4	4	5	3	3	4	2	1	4	4	5	4	113	environment
substance, material	13	16	17	12	10	7	13	6	6	10	3	5	2	8	3	4	3	4	3	7	5	3	2	3	165	substance, material
others	7	4	3	3	4	3	1	3			2	2		2	2	3	1			1		3	5	3	52	others
load	1	3	2		1	1	1	1	2		1	1					1							1	16	load
total	121	137	129	117	101	95	101	89	90	68	67	57	70	62	62	74	64	48	50	61	65	62	63	62	1,915	total

Transition of Causal agents (Middle) of fatal and non-fatal accidents in 020202 gravel digging 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) agents
temporary buildings, establishments	21	24	19	15	16	14	19	14	9	8	12	7	16	9	12	15	9	7	7	5	14	9	9	16	306	temporary buildings, establishments
conveying machine	28	30	25	32	31	31	19	28	27	28	26	14	20	19	21	21	27	18	18	21	20	16	21	14	555	conveying machine
construction machine	13	12	22	10	13	15	16	9	7	4	6	8	11	6	8	9	5	5	6	12	7	9	7	9	229	construction machine
natural environment	9	11	6	7	3	9	3	6	7	2	3	4	4	4	5	3	3	4	2	1	4	4	5	4	113	natural environment
materials	13	16	16	12	10	6	13	6	6	10	3	5	2	6	3	4	3	4	3	7	3	3	2	3	159	materials
tools	7	6	5	6	5	1	8	5	7	5	4	1	3	4	4	2	2	2	6	3	4	5	3	3	101	tools
no causal agent	5	3	2	2	4	3		3			2	2		2	2	3				1		2	5	3	44	no causal agent
crane	3		2	4	1	1		2	4	2	2		4			3	2	3	1		1	4	1	2	42	crane
power transmission mechanism	3	3	5	2	3	3	4	1	1	2					1		1	1	2		3	2	1	2	40	power transmission mechanism
general machine	7	12	13	16	6	4	8	7	12	2	5	7	3	3	2	4	3	1	3	6	3	5	3	1	136	general machine
human power machine, tools	4	4	3	4	3		2	3	1	2	2	2	1	1	1	3	3	1	1		2	1		1	45	human power machine, tools

other equipments, facilities	2	6	3		4	3	3	3	2	1		3	2	1	1	2	1			1	1		2	1	42	other equipments, facilities	
vehicle	2	4	3	1	1		4		3	1		1	2	3	2	1	2	2		2			3	1	38	vehicle	
load	1	3	2		1	1	1	1	2		1	1					1							1	16	load	
metal manufacturing machine				2		3				1		1				1				1				1	12	metal manufacturing machine	
woodworking machine		1	1	2					1				1	1		2	1								11	woodworking machine	
electric equipment		1							1			1				1				1				1	6	electric equipment	
hazards, harmful substances			1			1								2										2	6	hazards, harmful substances	
other causal agent	1	1					1										1						1		5	other causal agent	
unclassifiable	1		1	1																					3	unclassifiable	
engine				1									1												2	engine	
pressure vessel												1								1					2	pressure vessel	
welding equipment	1																							1	2	welding equipment	
mobile silviculture machine																											mobile silviculture machine

building, establishment			5		3		3	5	2	1	1	1	4	2	1	2			3	1	5	3		1	43	building, establishment
stairs, landing stage			1		2		5	2	3	1	4	1	1	2	2	2	2	3	2		2	2	2	1	40	stairs, landing stage
ladder			2		5		4	2	1	3	1	1	2	2	3	1	2	1	3		3	1	1	1	39	ladder
other equipment, facilities			3		4		3	3	2	1		3	2	1	1	2	1			1	1		2	1	31	other equipment, facilities
other temporary buildings, establishments			4		4		3	1	2		1		1	1	3	2	2				1			1	26	other temporary buildings, establishments
natural ground, rock			2		2		1	2	4		1	2		1	1	1	1	1	1		2	1	2	1	26	natural ground, rock
hand tool			2		1		2	2		2	2	2	1	1		2	3		1		1	1		1	24	hand tool
cars, bus, motorcycle			2		1		3		3				2	2	1	1	1	2		1			3	1	23	cars, bus, motorcycle
mobile crane								2	3		1		3			1	1				1	2		1	15	mobile crane
crane					1					2			1			2	1	2	1					1	11	crane
other materials			1				2	1	1		1				1							1		1	9	other materials
load			1		1		1	1	2		1	1												1	9	load
grinding machine, buffing machine								1					1								1			1	4	grinding machine, buffing machine
metal material			3		8		6	2	3	5		3	1	1	2	2	1	2	3	7	1	1	2		53	metal material
mixer, grinder			4		4		2	4	3		3	2	1	1		1	2			1	3	1	1		33	mixer, grinder
slinging tool			2				2		3		2		1	1				1	2	1	1	2			18	slinging tool
loader							1	1	1		2		2	1			1		1	3	2				15	loader

scaffolding			1		1			1		2		1	1	1			2	1			1				12	scaffolding	
standing tree								1	2		2	1		1				1						1		9	standing tree
other construction machines			1					1	1								1		1	1	1			1		8	other construction machines
other powered crane			2							1		1						1					2	1		8	other powered crane
other vehicles			1					1		1		1	1		1											8	other vehicles
roof, beam, haze, crossbeam, principal rafter			2					1	1																	8	roof, beam, haze, crossbeam, principal rafter
lumber, bamboo			2		1				1		1						1	1								8	lumber, bamboo
human power cranes					2			1	1					1	1			1								7	human power cranes
other powered conveying machines					2			1		1		1											1			6	other powered conveying machines
opening								2						1				1						1		5	opening
chain saw			1						1					1												4	chain saw
high/cold temperature environment			1		1												1								1	4	high/cold temperature environment
demolition machine													1											1		3	demolition machine
other metal manufacturing machines										1	1															3	other metal manufacturing machines
forklift					1				1															1		3	forklift

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
February	7	16	9	8	14	11	9	11	12	8	1	3	5	9	6	5	6	5	1	5	5	9	4	8	177	February
December	7	9	9	15	4	5	9		4	5	4	4	7	7	6	4	7	5	3	4	7	4	5	7	141	December
January	11	10	18	6	13	11	3	8	8	5	12	3	7	5	4	4	6	3	4	5	9	5	6	6	172	January
June	15	10	10	16	4	6	11	9	8	5	8	4	11	2	7	7	4	2	5	8	3	3	7	6	171	June
April	7	15	10	8	6	11	11	7	8	9	5	6	8	7	4	9	3	2	6	4	2	6	4	6	164	April
March	8	5	13	11	10	6	5	7	8	5	4	7	8	7	6	7	8	4	5	6	4	7	5	6	162	March
September	14	9	13	11	6	12	7	8	6	3	5	3	5	2	5	6	4	3	6	3	4	4	4	6	149	September
October	9	12	7	6	6	8	9	3	5	6	7	6	2	4	6	6	2	5	2	10	6	6	6	5	144	October
May	10	12	6	7	8	4	8	8	5	7	6	6	2	4	6	5	9	2	3	3	3	6	4	5	139	May
November	8	11	14	14	9	6	9	9	5	4	3	3	5	7	5	8	4	6	9	4	7	3	6	4	163	November
August	9	12	8	9	12	6	8	10	8	6	4	5	3	3	4	6	6	3	2	5	5	5	1	3	143	August
July	16	16	12	6	9	9	12	9	13	5	8	7	7	5	3	7	5	8	4	4	10	4	11		190	July
total	121	137	129	117	101	95	101	89	90	68	67	57	70	62	62	74	64	48	50	61	65	62	63	62	1,915	total

Transition of prefectures of fatal and non-fatal accidents in 020202 gravel digging 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
Hokkaido	24	25	11		14		13	13	14	9	17	11	15	11	14	12	17	9	5	10	14	15	14	9	296	Hokkaido
Niigata	9	8	9		12		9	7	8	6	3	4	5	8	6	5	5	5	3	5	5	3	11	6	142	Niigata
Yamagata	5	7	5		2		2		2	1		1	2	3	2			2	1		1	2	1	5	44	Yamagata
Shizuoka	11	2	7		6		3	9	9	6	8	1	5	4	4	3	1	2	3	3	3	2	4	4	100	Shizuoka
Nagano	10	2	10		7		3	1	2	2	3	1	3	1	1	3			2	2	6	3	4	4	70	Nagano
Toyama	3	3	5		2		6	1		3	5	4	3	1	3	2	3	1	1	2	1	1	2	4	56	Toyama
Chiba	4	5	2		2		1	2	3	1	1	2	2	2	4	1	1	2	4	4	4	2		4	53	Chiba

Tochigi	3	4	4		3		6	2	5	5		3	2	2	4	2			1	1	1	2	2	3	55	Tochigi	
Iwate	3	1	3		3		1	1	3	1	2	1			1	2	2	1			1	2	1	3	32	Iwate	
Gifu	4	7	6		5		8	5	4	5	3	2	3	2		5	2	4	3	8	4	2	4	2	88	Gifu	
Yamanashi	6	2	6		4		6	3	6	3		3		2	2	4	1		1	2		1	2	2	56	Yamanashi	
Miyagi	1	1	4		2		3	3	1	1	2	1	1	1	1	3	6	1	2	3		1	1	2	41	Miyagi	
Wakayama		3	2		1				2		1		1	1	2	1	1	3	1	1	1	2	1	2	26	Wakayama	
Kanagawa	2	2	1		3		1	1		1		1	1		1		1		1			2	1	2	21	Kanagawa	
Ibaraki	7	8	4		3		6	3	2	5	2	4	2	3	1	2	2	2	1		2	4	1	1	65	Ibaraki	
Miyazaki	1	2	1		1		3	5	4	2	1	4		1	2	2	3		2				2	1	37	Miyazaki	
Fukushima	3	2	1		1			4			1		1	1	3	3			4	3	2	3	1	1	34	Fukushima	
Hyogo	2	4	4				1	1	1		3	1		1	1	1			1		3	3	1	1	29	Hyogo	
Aomori	2	2	3		1		2	2	2	1	1	1	2	1		1	1			1	2			1	26	Aomori	
Fukuoka	1	3	5		1			1		1	2	1			1	2	2	1			1			1	23	Fukuoka	
Shiga	2		4		3			1				1	2				1								1	15	Shiga
Kagoshima	1	1					4	1	2		1		1								1			1	13	Kagoshima	
Shimane		2	1		1														1					1	6	Shimane	
Saga	1																							1	2	Saga	
Mie		9	6		7		3	2	4	3			2	2	3	4	3	2		4		3	2		59	Mie	
Kumamoto	1	4	2		1		1	3	1	4	5	3	1	2		1	2	3	1	1	4	1			41	Kumamoto	
Akita	2	4	3		3		2	6				2	1		1	2	1		1	2	2	1	1		34	Akita	
Oita	1	1	2		2		3	3	1	3		1	1		1	2	3	2	1	1					28	Oita	
Tokushima		5	2		2		1	2	2				1	1	1	1			1	1	2	1	2		25	Tokushima	
Gunma	2	2	4		1		2			2	1	1	2	1	1			1	2	1					23	Gunma	

Aichi	1	1	3				1	1	1		2	1	1	1	1	3		1	1			1	2			22	Aichi
Kyoto	1	1	3		3		2	1	1				1	1			2		2	1	1	1	1			22	Kyoto
Saitama	2	3			1		2		4			1	2	1				1	2			1			20	Saitama	
Fukui	1	2			1								1	1	1	1	2	2	1			2			15	Fukui	
Ishikawa			1		1						1		4	1			1	1	2		1	1			14	Ishikawa	
Ehime		1					1	1	1	1	1	1	1	1	1	1					1	1			13	Ehime	
Hiroshima		2	1		2		1	1		1	1		1			1	1								12	Hiroshima	
Okayama	1	2	2				2		2					1		1									11	Okayama	
Yamaguchi		2	2				1							1		1	1				1				9	Yamaguchi	
Osaka	2								1	1				2			1		1						8	Osaka	
Kochi	2	1							1					1		1			1	1					8	Kochi	
Nara		1						1									1								3	Nara	
Tokyo									1									1							2	Tokyo	
Kagawa								2																	2	Kagawa	
Okinawa							1																1		2	Okinawa	
Tottori																											Tottori
Nagasaki																											Nagasaki
total	121	137	129	117	101	95	101	89	90	68	67	57	70	62	62	74	64	48	50	61	65	62	63	62	1,915	total	

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