

**Title: Development of Standard Job Classification Codes for Building a Job-Exposure Matrix
for Police Officers**

Running title: Standard job codes for police officers

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Development of Standard job Classification Codes for Building a Job-Exposure Matrix for Police Officers

Abstract

Background: This study aimed to develop standard job categories for constructing a job-exposure matrix (JEM) for police officers in South Korea and to evaluate their applicability.

Methods: We examined standard job codes related to police personnel management and compared them with job classifications from police publications. Using R Shiny, we developed a web-based search tool for standard codes. A pilot survey of 130 police officers assessed the codes' applicability and relevance to health-related hazardous factors.

Results: Eighty-seven standard functional codes used in the police personnel management system POOL were organized into minor categories as the basic units of standard jobs. These were grouped into 20 sub-major categories and further consolidated into 10 major categories to develop the standard job codes. The responses to the standard job codes in the pilot survey were 75% accurate compared with the final expert evaluation results and 99.2% accurate compared with the algorithm-based automatic allocation results. The results of the job-hazardous factor network analysis revealed that the most frequently reported hazardous factor was emotional labor, followed by night shifts and electromagnetic waves. Emotional labor was identified as the top hazardous factor in six out of the nine standard job categories.

Conclusions: The standard job codes developed in this study were designed in connection with the personnel management system for police officers, making them well-suited for constructing a comprehensive JEM for the entire police force.

Keywords: job-exposure matrix, personnel management system, police officer, standard job

BACKGROUND

Police officers are vital for law enforcement, focusing on crime prevention and social order. They are also first responders, alongside firefighters and medical personnel, addressing critical situations.¹ Police officers frequently face physical and chemical hazards while performing their duties without proper protection measures.²⁻⁶ It has been reported that police officers face a high risk of developing occupational post-traumatic stress disorder (PTSD), not only due to physical hazards such as violence encountered during duty but also from their experiences investigating horrific incidents like murder scenes.⁷ Moreover, the nature of police work, which involves frequent shift work and night shifts, along with prolonged exposure to emotional labor through public-facing duties and physical and chemical hazards, has been reported in both domestic and international studies to increase the risk of cardiovascular diseases⁸⁻¹² as well as cancer.¹³⁻¹⁹

Since 2004, the United Kingdom has conducted a large-scale cohort study, the Airwave Health Monitoring Study (AHMS), targeting police officers.²⁰ The AHMS initiated an investigation into the health effects of using TETRA (Terrestrial Trunked Radio), a communication device utilized by police officers.²¹ The study includes 50,000 police officers, collecting physical measurements, blood and DNA samples, lifestyle data, health surveys, and analyzing health risks and their associations factors.^{22,23} The 2022 addition of the "Special Health Examination" clause to the "Basic Law on Health, Safety, and Welfare of Police Officers" institutionalized special exams, yet police occupational health management remains a blind spot in Korea. Thus, it is essential to create a system for assessing and managing hazardous risk factors, considering the job characteristics of all police officers.

To create an effective safety and health management system for police officers, exploring, gathering, and evaluating data regarding job-specific hazardous risk factors is vital. Nonetheless, inconsistencies arise in job classification due to the absence of standardized criteria in publications from the National Police Agency (NPA) and related research. Recently, the NPA has been conducting a five-year research project since 2022 to develop an "Intelligent Big Data Integrated Platform for Personalized Health Management Services for Police Officers." The authors of this paper have engaged in research to identify risk factors for all police officers based on their jobs and to develop a job-exposure matrix (JEM) for management, while also working to standardize police officer roles. This paper presents the outcomes of standard job classification codes that can

inform future JEM development for police officers. It evaluates the use of these job codes in understanding exposure characteristics to hazards based on a pilot survey of several police officers.

METHODS

Development of standard job codes

Three principles guided the creation of police job codes. First, inclusiveness ensures applicability to all officers, **supporting health management system** for the force. Second, connectivity allows linking with various datasets on officer training, welfare, and health. Finally, continuity ensures adaptability to evolving information, maintaining relevance. These principles were integrated into the development for a robust framework for police job codes classification.

To develop job codes that meet these principles, the first step was to examine the personnel management system for police officers. This involved interviews with relevant personnel and gathering standard code data from the NPA for thorough analysis. Second, the ‘Key competency guidebook for police duties’²⁴, which outlines core competencies for police jobs, and the ‘2020 Police Statistics Yearbook’²⁵, periodically published by the NPA, were reviewed. Third, we examined the organizational structure and department classifications on the official NPA and subordinate police websites.

Organizational names in major, sub-major, and minor sections of the personnel management system, NPA publications, and charts were compiled into a spreadsheet. Common functional terms for job roles were identified. Final job codes were organized into a classification system. Related index keywords were created in a database by extracting terms from subordinate job categories and relevant task descriptions from the reviewed materials.

Development of a standard job code search tool

To help users select standard codes intended for the standard job codes developed in this study, a search tool called the ‘Police Function Code Finder (PFF)’ was created. This tool was built using Shiny²⁶, an R package that aids in creating interactive web applications, allowing users to access and navigate

the codes easily. The term ‘function code’ was used in the title of the search tool because the word ‘function’ is more commonly employed than ‘job’ in police organizations, making it a more familiar term for police officers.

The PFF serves as a search algorithm, providing descriptions and a list of standard codes for sentence-based searches. It evaluates how well inputted "words in a sentence" match index keywords associated with job codes. Match scores are as follows: matches with the standard code name earn 2 points, core keyword matches receive 1 point, and additional keyword matches gain 0.5 points. Codes are displayed in descending order based on scores. For ties, rankings are determined by the number of core keyword matches; those with more matches appear higher.

Pilot survey utilizing standard job code

Survey structure and overview

A pilot survey tested the applicability of new standard job codes. Its main goal was to evaluate how well these codes could categorize police officers' roles and exposures to hazards. The questionnaire explored work conditions, health status, medical utilization, health behaviors, job stress, and mental health, based on job history using the created standard job codes for future police officers.

Job-related characteristics were evaluated through questions about the organization, department, function (participants chose from standard job codes), years of service, work type, and workplace. The survey also included questions on health hazards linked to their tasks. In the survey, participants were given brief descriptions of 22 hazardous factors presented in Supplementary Table S1, encompassing physical, chemical, biological, ergonomic, and psychosocial risks. They were asked to select all factors they believed could affect health in relation to the tasks performed in their respective departments.

Participants provided information about their organization and job history. The survey was conducted via an app developed for mobile and computer responses, administered from April to June 2024, targeting police officers from the Wonju Police Station in Gangwon Province.

Evaluation of the accuracy of standard job assignment

The agreement rate was analyzed by comparing the standard job codes selected by respondents ($Job_{\text{Respondents}}$) in the pilot survey with those assigned by experts (Job_{Expert}) who developed standard job codes. These experts assigned the codes based on respondents' organizational and departmental information.

Furthermore, to integrate existing police officer data previously recorded with non-standardized job information into JEM using standard job codes, it is essential to enable reallocation to standard codes. An algorithm was developed using R^{27} to automatically assign major categories of the standard job codes based on the organization, department, and function information collected in the survey. The algorithm assigns scores: 10 points for code name matches, 5 for core keywords, and 1 for additional keywords. The job code with the highest score is assigned automatically. The agreement rate between expert (Job_{Expert}) and automatic ($Job_{\text{Algorithm}}$) assignments evaluates the feasibility of automation, with higher rates indicating better reliability for standard job code assignments.

Statistical analysis

The pilot survey applying the standard job codes was distributed to 300 participants, and the responses from 130 individuals who completed the survey, including job-related questions, were analyzed. Using the finalized major category standard job codes reviewed by experts, the frequency distribution by work type (shift work, on-call duty, day shift) and workplace (indoor, outdoor) was analyzed. Additionally, a heat map of the percentile frequencies for hazardous factors identified as impacting health was created using Tableau Desktop (2024 Tableau Software, Salesforce).²⁸ The network visualization of hazardous factors selected as impacting health for each standard job code was analyzed using Gephi (0.10).²⁹

RESULTS

Personnel management system for police officers

The management of police personnel utilizes two systems, as detailed in Table 1. The first system is "e-Saram," a standardized electronic human resource management platform aimed at supporting personnel administration and policy functions across the government, thereby optimizing the entire personnel process

from recruitment to retirement.³⁰

When a new organization forms in the police force, the MPM creates and sends a new code to the NPA, which assigns a departmental code by appending a serial number to the parent organization's code, like headquarters or division. This process lacks standardized regulations. For police officers, the e-Saram system has operated since 2005, leaving those who joined before 2005 with restricted access to information. Additionally, since the system covers all public officials, filtering data for police officers is challenging, complicating evaluations of the police's current state workforce.

The second system, "POOL," is a personnel management system used by the NPA. It matches organizational codes from the e-Saram system with those created in POOL to prevent duplication, and assigns function codes based on job characteristics. POOL includes code information for all police officers since 1940 (excluding National Forensic Service and general administrative roles). This extensive coverage makes POOL's codes more effective than e-Saram for creating a JEM for all current and former police officers in the future.

In May 2023, we acquired codes from the e-Saram system and POOL function codes from the NPA for analysis, uncovering 87,575 total codes. Of these, 22,601 were fully matched and used across all three systems. After removing duplicates, we finalized 22,413 unique codes.

Figure 1 illustrates each code's structure. The POOL code includes four two-digit subcategories denoting hierarchical levels: provincial/metropolitan police agency, station/bureau, division, and section/team. In contrast, the e-Saram code has 15 digits but lacks a consistent pattern, even for similar organizations. Conversely, the POOL code unifies similar names into a single designation with uniform numbering. For example, in Figure 1, the e-Saram organizational names are presented as "Police agency - Seoul Metropolitan agency - Seongbuk station - General Affairs division - Accounting" and "Police agency - Seoul Metropolitan agency - Seongbuk station - General Affairs division - Accounting section." While the only difference is in the final terms "Accounting" and "Accounting section," e-Saram assigns different code numbers to each. In contrast, POOL standardizes these as "Seoul agency - Seongbuk - General Affairs - Accounting" under four subcategories and assigns the same code number, "41171112."

Creation of standardized job codes and searching tool

Figure 1 shows that function codes effectively represent job characteristics. Composed of two letters, these codes reveal similarities when sharing the first character. Thus, they serve as standard job codes for JEM construction. After matching with organizational codes, removing duplicates, and consolidating identical names, 87 of the original 135 function codes were extracted, comprising the minor standard job group codes. Duplicate names were selected based on their usage frequency with organizational codes, relevance to similar codes, and classification in a sub-major group.

The first character of the minor group codes classifies them into 20 sub-major groups, which are categorized into 10 major groups based on organizational structure and functions. Table 2 summarizes the final classification of the standard job codes. For additional details on Korean code names and their descriptions, visit the web-based tool, Police Function Code Finder (PFF), using the link below: https://kscf.shinyapps.io/pff_app/.

The PFF extracted sub-major and minor group code names linked to major group codes to create core keywords representing those codes. It also generated supplementary keyword databases by extracting organizational names from the documents and structures from the NPA's website. Users can search for the standard code list with keywords for major group codes by entering job-related phrases. The system provides scores indicating the alignment between the entered phrases and keywords, displaying the standard codes in descending order of total scores.

Pilot survey - Standard job code response/automatic assignment accuracy

The results of the standard jobs selected by participants for their current or past work history (Job_{Survey}), the outcomes assigned by the automated algorithm (Job_{Algorithm}), and the final evaluation results from experts (Job_{Expert}) are summarized in Table 3. Based on the final expert evaluation results, the agreement rate with the survey responses was 75.4%. Among job categories, mobile/special forces showed the lowest agreement rate at 36.8%, followed by community police at 57.8%. The agreement rate for the automated assignment results was 99.2%, confirming the feasibility of automatic standard job assignment based on departmental

information.

Working conditions and hazardous exposure characteristics by standard job

Figure 2 illustrates the distribution of work types and workplaces for nine standard jobs finalized by experts. Community police had the highest shift work rate at 93%, while intelligence, security, and foreign affairs had the highest day work rate, with 96% of respondents reporting day work work. Jobs were classified based on the primary workplace into desk (indoor) and field (outdoor) jobs. Community police had the highest proportion of field jobs at 94%, while administration had the highest desk jobs at 89% work.

Figure 3 displays a heat map of hazardous factors affecting health by job type. Solid red boxes highlight the most frequently reported (1st rank) hazards, while dotted boxes denote second most reported (2nd rank) hazards. Among nine job groups, six in public-facing roles identified emotional labor as the top hazard.

Figure 4 shows the network visualization analysis of job-hazard connections. More arrows linked to a hazardous factor indicate more associated jobs, and thicker arrows represent higher response frequency. Emotional labor was the most frequently selected hazard, followed by night work, electromagnetic waves, and shift work.

DISCUSSION

Job information is essential for assessing workplace exposure in epidemiological studies. Workers in similar roles face comparable exposures, regardless of location. This has led to JEMs, which identify workplace exposures and allow evaluation of individual exposures without detailed job or environment data.³¹ Utilizing standardized job group information within a specific industry enables the development of more detailed JEMs³². Furthermore, if the task characteristics of each job group can be more specifically identified, it becomes possible to construct task-based JEMs³³. For police officers, several systematic reviews have examined potential hazards and risk factors^{34,35}, yet studies focused on developing standardized job group-specific JEMs for the entire police force remain limited. Thus, as the first step in constructing a JEM for police officers, this study aimed to establish standard job codes that account for the characteristics of different job groups.

The job classifications used in the official publications issued by the NPA are neither standardized nor consistent. In this study, we propose a standardized job code system based on the 87 function codes used in the POOL personnel management system for police officers. This system comprises 20 sub-major categories and 10 major categories. The 10 major categories are deemed highly practical as they either encompass or closely align with the classification items in existing publications by the NPA. For example, precinct stations and police substations, which make up the largest portion of the total police workforce, are classified as "community police" in this study. This classification is considered appropriate, as Korea's NPA regulation titled "Rules on the Organization and Operation of Community Police" (NPA Regulation No. 602) defines community police as "precinct stations and police substations." Furthermore, police officers working in substations, smaller units established to manage localized security within the jurisdiction of police stations and precincts, also fall under the category of community police. Therefore, the term "community police" is more fitting than "precinct station and police substation."

Additionally, the "Rules on the Operation of Precincts and Substations" explicitly mention "community police activities" as part of the precinct's responsibilities. These activities are described as "efforts to prevent crime and safety incidents while incorporating public concerns and feedback into security operations through cooperation with local residents, institutions, and organizations." This further strengthens the validity of using "community police" as a classification name.

A survey was conducted with 130 officers to assess if frontline police officers can correctly identify their job (function) codes under the proposed standard job code system. The agreement rate between the officers' survey responses and the standard job codes assigned after expert evaluation was 75.4% (Table 3). The mobile/special forces showed the lowest agreement rate among the job categories. Upon reviewing the free-text inputs provided by officers who selected "other" or entered their codes manually, it was discovered that many chose "security (D)," a major category in the standard job code system, with responses like "security," "security operations," and "patrol." Others specified positions such as "deputy platoon leader," "platoon adjutant," "platoon leader," or "team member." This is because the duties performed by the mobile/special force share characteristics with those of security, highlighting the need for a clearer explanation of the distinction between security and mobile/special force in the standard job codes in the future. Similarly, for

community police, which also showed a lower agreement rate, the most common selection was "patrol" under the security (D) category, with 31 respondents choosing this option, followed by "community safety" with 5 respondents. This can be interpreted as stemming from the fact that the duties of community police (M) encompass elements of patrol and community safety. As with the mobile/special force (OP) category, it was deemed necessary to clearly differentiate between community police (M), security (D), and community safety (B) in the standard job codes.

In occupational health research, the automatic assignment of standardized job codes from free-text job descriptions is essential for the target population. Tools for standardized job coding have been created to process data in English as well as multiple other languages³⁶⁻³⁸. Similarly, in this study, we developed and implemented an algorithm that automatically codes standardized job codes by evaluating the degree of match between respondents' input regarding their affiliated department and function and the keywords of the standardized job codes. The resulting agreement rate was extremely high at 99.2%, indicating that even if police officers did not select the correct standard code during the survey, it is possible to allocate the appropriate standard job code using the information they provided about their department and function.

In some job categories, the auto-assignment algorithm showed lower accuracy, indicating a need for improvement. For example, in Table 3, the accuracy for "Protective service (D)" was 70%, with cases incorrectly assigned that were actually "Administration," "Traffic," or "Intelligence Security and Foreign Affairs" based on expert review. The algorithm matched user responses (e.g., department name, manually entered info) with job code titles and keywords. However, overlapping keywords—such as "traffic" appearing in both "Protective service (D)" and "Traffic (W)"—led to misclassification. To improve accuracy, the keyword overlaps across job groups should be reviewed and refined. Auto-assignment was not possible in cases with insufficient or non-matching input data. Of the 16 unassigned cases, 8 had incomplete responses that could not be evaluated by experts, while the other 8 included partial information that did not match existing keywords—some using abbreviations or informal terms. To improve assignment accuracy and coverage, future refinements should include expanding the keyword set to incorporate common variations and abbreviations. Nevertheless, if relevant information such as department or function is available, it is expected that existing police-related data not previously classified under standard job codes can be assigned

through the improved auto-assignment method and effectively utilized for future JEM construction.

An analysis of hazardous factors affecting health across job categories revealed that emotional labor was the primary hazard identified by various job groups (Figure 3) and ranked highest in overall response frequency (Figure 4). A meta-analysis of mental health outcomes among police personnel, which included 60 cross-sectional studies, 7 longitudinal studies, and a total of 272,463 police officers worldwide, reported the following prevalence rates: depression (14.6%), PTSD (14.2%), generalized anxiety disorder (9.6%), suicidal ideation (8.5%), alcohol dependence (5.0%), and hazardous drinking (25.7%)³⁵. This indicates that mental health issues among police officers are over twice as common as in the general population, emphasizing them as a significant health concern that demands immediate attention. The second most selected hazardous factor was working at night. Studies examining the relationship between shift work and job stress among police officers have found that those working afternoon and night shifts experience significantly higher levels of stress than officers working daytime shifts³⁹. The third major hazard was electromagnetic waves, reflecting concerns about exposure risks from frequent radio use. The ongoing AHMS cohort study in the UK, started in 2004, included a 2018 epidemiological study on radio use and cancer risk, concluding no significant increased cancer risk for police officers using radios. It emphasized the need for ongoing longitudinal research²². In South Korea, it's essential to start with a baseline survey on police officers' radio usage patterns.

This study showed that standard job codes can be used to categorize the traits of police jobs and assess the connection between these jobs and risk factors via a pilot survey. However, limitations exist in interpreting the results as indicative of all standard job categories due to the limited number of respondents (130) and the disproportionate representation of community police officers (116) respondents.

Although the survey included additional items related to potential health effects—such as sleep health, depressive symptoms, anxiety, PTSD, experiences of emotional labor/workplace violence, job stress, burnout, and working conditions—these were not analyzed in the present study. Given the small sample size, we determined that it would be inappropriate to use this dataset to construct a JEM or draw conclusions regarding health effects. A comprehensive survey aimed at the entire police force is scheduled for the future, enabling a more precise evaluation of the potential exposure to hazardous factors and the health impacts associated with each job category.

CONCLUSION

This study develops standard job codes for a JEM that identifies job-exposure characteristics of police officers in South Korea. Analyzing personnel management data and publications created 20 sub-major and 10 major job code categories from 87 function codes. A pilot survey with 130 police officers tested the feasibility of automatic assignment. Results indicated a need to clarify classification criteria for mobile/special forces versus community police and security. The study confirmed that standard job codes could be automatically assigned with 99.2% accuracy using officers' data. It also examined the link between categorized jobs and hazardous exposures, suggesting these codes can create a comprehensive JEM for all police officers in the future.

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Tables

Table 1. Comparison of police personnel management system

Table 2. List of standard job codes

Table 3. Comparison of standard job response results from the pilot survey with algorithm-based automatic allocation and final expert evaluation results

*Agreement rate: The proportion of job allocations matched based on the assignment by expert (Job_{Expert})

Figures

Figure 1. Example of data linking organizational and functional codes between POOL and e-Saram.

*POOL: Personnel management system developed by the Korean National Police Agency,

**e-Saram: Electronic personnel management system developed by the Ministry of Personnel Management

Figure 2. Distribution of work types (left side) and working places (right side) by standard job categories among pilot survey respondents (Total N=130).

Figure 3. Heatmap of percentile frequencies of hazardous factors reported to affect health by job category (Solid red box: primary hazardous factor, Dashed red box: secondary hazardous factor).

Figure 4. Visualization of the network between job categories and health hazardous factors (The numbers indicate the ranks of hazardous factors selected with high frequency).

Table 1. Comparison of police personnel management system

Item	e-Saram	POOL
Development organization	Ministry of Personnel Management	National Police Agency
Purpose	Facilitate government-wide personnel administration and streamline processes from recruitment to retirement.	Manage police-specific personnel data and assign job-related function codes.
Key Features	Integrates recruitment, payroll, performance evaluations, and training for all public officials; in operation since 2005 for police officers.	Includes all police officers since 1940; assigns function codes reflecting job characteristics; matches with e-Saram organizational codes.
Limitations	Cannot access data for officers who joined before 2005; challenges in filtering police-specific data; lacks detailed standardization for police jobs.	Excludes employees from National Forensic Service and general administrative positions; not integrated with government-wide systems.

Table 2. List of standard job codes

Major		Sub major		Minor		No. of records*
Code	Name	Code	Name	Code	Name	
ANT	Administration	A	Police affairs	AA	Police affairs	1141
				AB	General affairs	5
				AC	Welfare	10
				AD	Accounting	527
				AE	Civil complaints	10
				AF	Personnel education	11
				AG	Personnel	19
				AI	Education	10
				AJ	Equipment	43
				AK	Planning	17
				AL	Budget	6
				AM	Legal affairs	5
				AO	Public relations	85
				AQ	Planning and budget	11
		N	Chief	NA	Chief	1
				TA	Public safety	23
		T	Public safety	TB	Police affairs	34
					planning	
				TE	Public safety	80
B	Community safety	B	Community safety		intelligence	
				BA	Community safety	1421
				BC	Community safety and traffic	120
				BD	Women and juveniles	974
C	Investigation	C	Investigation	BE	112 emergency response	475
				CA	Investigation	1490
				Ca	Women and juvenile investigation	426
				CB	Inquiry	2
				CD	Cyber	125
				CE	Criminal investigation	746
				CF	Mobile investigation unit	22
				CG	Narcotics	2
				CJ	Investigation support	397
				CK	Detention management	140
				CL	Intelligence crime investigation	461

				CM	Major crime investigation	317
				CN	Forensic science	27
				CO	Criminal investigation support	251
				CQ	Community crime investigation	73
				CR	Economic crime investigation	361
				CS	Case management	2
				CU	Anti-corruption and public crime investigation unit	3
				CY	Security investigation	86
				CZ	Traffic crime investigation	236
D	Protective service	D	Protective service	DC	Protective service	329
				DD	Operations	1
				DE	Aviation	4
				DG	Protection	47
				DH	Security and traffic	358
				DI	Auxiliary police	18
				DJ	Security situation	6
				DL	Security operations	411
				DM	Crime prevention patrol	81
EFGH V	Intelligence security and foreign affairs	E	Intelligence	EA	Intelligence	175
				EB	Security	41
				EC	Information security	4
				EF	Security and foreign affairs	7
				EG	Information security and foreign affairs	234
				EH	Public safety intelligence and foreign affairs	90
		F	Foreign affairs	FA	Foreign affairs	237
		G	Audit	GA	Audit	750
				GB	Inspection	9
		H	Information and communications	HA	Information and communications	18

				HD	Information equipment	415
		V	National security	VA	National security	254
I	Academy	I	Academy	IB	Police university administration	45
				IC	Police university instructor	13
				IE	General administration	18
				IH	Central administration	11
				II	Central instructor	7
M	Community police	M	Community police	MA	Police substation	3020
				MB	Security center	1931
				MC	Precinct station	1159
				MD	Post, check	6
OP	Mobile/Special forces	O	Mobile unit	OA	Mobile unit	678
				OB	Crime prevention patrol unit	5
				OC	Riot police unit	37
		P	Special forces	PA	Special forces	52
W	Traffic	W	Traffic	WA	Traffic	135
				WB	Traffic planning	5
				WC	Traffic safety	216
				WD	traffic operations	4
				WE	Driver's license	3
				WF	Traffic patrol	13
				WG	Traffic investigation	692
				WH	Traffic management	512
KLRS	Other	K	National forensic service	KA	National forensic service	30
		L	Airport	LA	Airport	31
		R	Hospital	RG	Hospital	90
		S	Local autonomy	SA	Local autonomy	16

*No. of records: Number of job codes used in connection with POOL and e-Saram organizational codes

Table 3. Comparison of standard job response results from the pilot survey with algorithm-based automatic allocation and final expert evaluation results

Standard job	Assigned by expert (Job _{Expert})	Assigned by respondents (Job _{Survey})		Automatically assigned by algorithm (Job _{Algorithm})	
		N	Agreement rate*, %	N	Agreement rate, %
Administration	19	20	94.7	24	94.7
Community safety	37	26	62.2	32	86.5
Investigation	37	29	78.4	37	100.0
Protective service	10	46	90.0	13	70.0
Intelligence security and foreign affairs	28	21	75.0	23	78.6
Academy	2	0	0.0	3	100.0
Community police	116	67	57.8	115	99.1
Mobile/Special forces	19	7	36.8	20	84.2
Traffic	25	22	84.0	26	96.0
Not assigned	8	50	0.0	16	0.0
Total	130	130	75.4	130	99.2

*Agreement rate: The proportion of job allocations matched based on the assignment by expert (Job_{Expert})

POOL *		e-Saram **		Function	
Code	Organization (Korean)	Code	Organization (Korean)	Code	Name (Korean)
41171112	Seoul agency-Seongbuk-General Affairs-Acounting (서울청-서울성북-경무-경리)	G30G000 21329379	Police agency-Seoul Metropolitan agency -Seongbuk station-General Affairs division-Accounting (경찰청-서울특별시지방경찰청 -서울성북경찰서-경무과-경리)	AD	Accounting (경리)
41171112	Seoul agency-Seongbuk-General Affairs-Acounting (서울청-서울성북-경무-경리)	G30G000 21810189	Police agency-Seoul Metropolitan agency -Seongbuk station-General Affairs division-Accounting section (경찰청-서울특별시지방경찰청 -서울성북경찰서-경무과-경리계)	AD	Accounting (경리)



Agency		Bureau, Station		Division		Section, Team	
4	1	1	7	1	1	1	2
Seoul (서울청)		Seongbuk (성북경찰서)		General affairs (경무과)		Accounting (경리계)	





