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A Study on How to Strengthen the Expertise of Korean Qualifications Management in the Firefighting Realm from the Viewpoint of External Signal Dependency of Capture Theory

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Abstract

This study suggests ways to strengthen the expertise by analyzing the problems caused by the lack of expertise of the qualification management body managing the Korean qualifications in the realm of firefighting from the perspective of external signal dependency of capture theory. As a method to prevent the dependency of external signals in capture theory, it is suggested to strengthen the expertise of regulators and strengthening roles and functions of regulator institutions by supplementing education and professional manpower. On this basis, analyzing the problems of qualifications management to the external signal dependency tendency, the researchers in qualification management at the Human Resources Development Service of Korea have a variety of different majors, so understanding and application can be limited if they are working in an unfamiliar area of work. Therefore, in making decisions regarding topics such as policies and roles, suitable alternatives should be found based on external signals. In order to improve this, it is necessary to select firefighting majors in the Korean qualification management of the firefighting realm, to reorganize the job scope to a similar job field of the researcher in charge. It is also necessary to strengthen the expertise of the researcher through various programs, such as mandatory periodic maintenance education in order to understand the work of the researcher.

Keywords: Capture theory, External signal dependency, Firefighting realm, Korean qualification, Strengthening of expertise.

1. Introduction

The qualification management body is the Human Resources Development Service of Korea. The researchers with the Human Resources Development Service of Korea who are in charge of qualification management do not only perform qualification management in the fields of their specialty but also in a variety of other fields that are not related to their specialty. Therefore, they do not have the expertise to address the fields in which they are in charge of qualification management. In other words, there is a limit to their ability to understand these fields and apply qualification management to the fields. As a result, there may be a tendency of depending on external signals to seek satisfactory alternatives in decision-making of the Human Resources Development Service of Korea as a regulatory body in regard to its policies or roles among others. For this reason, the purpose of this study is to identify problems to eliminate the dependency on external signals caused by a lack of expertise of the qualification management body responsible for firefighting qualifications and find out measures to enhance its expertise.

The capture theory became widespread in 1971 by George Stigler. Stigler (1971) emphasizes that government regulation is a commodity accepted by interest groups seeking their own interests and supplied by politicians seeking their own interests. In other words, the capture theory is the theory that the regulation is carried out according to the demands of the industries for the regulation but the regulatory authority is captured over time by the industry that it intends to regulate. Therefore, the capture theory means that regulatory agencies are captured by industries subject to regulation and in agreement or sympathy with them, thereby operating policies favorable to them instead of regulating them [1]. In other words, regulation is not enforced according to the public interest but it is subject to the demand of the recipients of the regulation.

On the other hand, there are many studies to prevent this capture phenomenon in existing literature [2-7]. Based on this, the causes of the capture phenomenon can be divided into infringed information, asymmetry of resources, the incentive to avoid conflicts and the dependency on external signals. The infringed information is about the problem that occurs when the industries subject to regulation have technical information superior to the regulatory bodies, thereby making the regulatory bodies advocate the industries subject to regulation. The asymmetry of resources refers to the case where the regulatory bodies are weaker than the industries subject to regulation in terms of funding or manpower. The incentive to avoid conflicts refers to the phenomenon for the regulatory bodies to minimize friction and conflicts with the industries subject to regulation and maintain symbiotic relationships with them at an adequate level. The dependency on external signals refers to the method by which the regulatory bodies find appropriate alternatives depending on external signals when they make decisions in regard to their policies or roles among others.

As the methods to prevent the dependency on external signals among these causes, it is mostly mentioned that the expertise of the regulatory agencies should be strengthened by training and trained manpower [4,5] and that the roles and functions of the regulatory agencies should be strengthened [3][8,9].

There are existing researches on qualifications based theoretically on the capture theory such as "A Study on the Fire Protection' Licensing System in Korea: With a Focus on Government Licensing" and "Improvement Plan of Korean Qualifications of Fire Sector: Focusing on Monopoly" carried out by Ha-Sung Kong (2018; 2016) [10,11] and "Economic Effects of Qualifications" conducted by S. H. Kim (2010)[12]. The significance of this study consists in establishment of measures to strengthen the expertise of the qualification management body in order to validate the application of the capture theory to the qualifications as written in the study of S. H. Kim (2010) and develop the study of Ha-Sung Kong (2018; 2016) further.

2. Problems from the viewpoint of the capture theory: a lack of expertise of qualification managers

It is not easy for the researchers in charge of qualification management to acquire expertise because there is a limit to their ability to address the fields in which they are in charge of qualification management when they are in charge of qualification management across disciplines beyond similar career fields. The qualification managers are the researchers with the Human Resources Development Service of Korea in charge of qualification management. Their job scope is outside the boundaries of similar career fields or too extensive. Therefore, there is a limit to their ability to understand the fields in which they are in charge of qualification management and apply qualification management to the fields [12]. In other words, the expertise of the qualification managers is weakened. The researchers in charge of qualification management are responsible for qualification management of 11 license types per person at a maximum as shown in Table 1. The researchers in charge of engineer fire protection system (mechanical) are also responsible for qualification management of license types that are not related to the firefighting qualifications such as master craftsman sheet metal and boiler making, craftsman electronic publishing and engineer construction safety. In addition, most of the researchers in charge of engineer fire protection system (mechanical) are not experts specializing in firefighting. This can cause errors when the qualification tests are performed.

The actual work of the researchers does not only involve simple support work but also meetings with qualification experts in relevant fields as well as selection of test problems. They also play a role of including new problems in the tests if the test problems are in error or far from the industrial field. Therefore, the expertise of the researchers in charge of qualification management is an important factor.

Table 1. Researcher in charge of qualification[13, 14]

National technical qualifications			National professional qualifications
Researcher A	Researcher B	Researcher C	Researcher D
1. Engineer fire protection system (mechanical)	1. Engineer fire protection system (electrical)	1. Fire investigation and evaluation engineer	1. Fire protection system manager
2. Industrial engineer fire protection system (mechanical)	2. Industrial engineer fire protection system (electrical)	2. Fire investigation and industrial engineer	2. Fire safety educator
3. Master craftsman sheet metal and boiler making	3. Master craftsman electricity	3. Master craftsman hazardous material	3. Assistant curator
4. Engineer construction safety	4. New and renewable energy equipment (photovoltaic) engineer	4. Industrial engineer hazardous material	
5. Industrial engineer construction safety	5. New and renewable energy equipment (photovoltaic) industrial engineer	5. Craftsman hazardous material	
6. Industrial engineer machinery maintenance	6. Engineer electricity	6. Engineer bioprocess	
7. Industrial engineer sheet metal and boiler making	7. Industrial engineer electricity	7. Engineer quality management	
8. Craftsman hydro-pneumatic		8. Industrial engineer quality management	
9. Craftsman machinery maintenance		9. Engineer chemical industry	
		10. Engineer explosives	

10. Craftsman desktop publishing	manufacturing
11. Craftsman sheet metal and boiler making	11. Industrial engineer explosives manufacturing

Note) There is a management team for professional engineers' licenses but there is no researcher in charge of each type of license.

In Japan, most of the researchers with the Japan Fire Engineering Qualification Center which manages and administers firefighting qualifications are experts specializing in firefighting or having acquired qualifications in firefighting [15]. In Australia, most of the researchers with Fire Protection Association Australia in charge of qualification management who are the qualification managers are specialists specializing in firefighting or having received training in firefighting [16]. However, it is required not only that the expertise of the regulatory agencies should be maintained high by training and trained manpower and but also that the roles and functions of the regulatory agencies should be strengthened in order to prevent the dependency on external signals. On the other hand, the issue that "the roles and functions of the regulatory agencies should be strengthened" is not discussed in this study because the current situation does not show this problem.

3. Solutions to the dependency on external signals: strengthening the expertise of the qualification management body

It is necessary to strengthen the expertise of the researchers in charge of qualification management who are qualification managers by selecting firefighting majors as qualification managers, reorganizing the job scope of the researchers in charge of qualification management into similar career fields and regularizing periodic regular refresher training as well as providing various education programs such as training programs and in-service programs to allow the researchers to have a better understanding of their duties. The tasks of the researchers in charge of qualification management are not only simply staff work. They also have the meetings with the related certification specialists and select the test problems. They also play a role of including new problems in the tests if the test problems are in error or far from the industrial field as well as finalizing the test problems among others. Therefore, the expertise of the researchers in charge of qualification management is an important factor, which makes it necessary to select firefighting majors as qualification managers or strengthen their expertise through various education programs among others as it is done in the United States. In the United States, a variety of education programs are offered to the researchers in charge of qualification management in order to enhance their expertise in the disciplines related to the license types for which they are in charge of qualification management. As a result, the expertise of the researchers in charge of qualification management for license types is improved and errors in the test problems in the United States are less than the test problems in Korea [17].

4. Conclusions

The purpose of this study is to identify problems caused by a lack of expertise of the qualification management body responsible for firefighting qualifications and find out measures to enhance its expertise. It is suggested that the expertise of the regulatory agencies should be strengthened by training and trained manpower and that the roles and functions of the regulatory agencies should be strengthened as the methods to prevent the dependency on external signals in the capture theory. Based on these methods, the analysis on the dependency of the firefighting qualification management body on external signals indicates that the job scope of the researchers with the Human Resources Development Service of Korea in charge of qualification management who are the qualification managers is too much outside the boundaries of similar career fields or too extensive for the researchers to address the fields in which they are in charge of qualification management, thereby resulting in the dependency of the regulatory body on external signals to seek satisfactory alternatives in decision-making of the regulatory body in regard to its policies or roles among others.

In order to improve this, it is necessary to strengthen the expertise of the researchers in charge of qualification management who are qualification managers by selecting firefighting majors for firefighting qualification management, reorganizing the job scope of the researchers in charge of qualification management into similar career fields and regularizing periodic regular refresher training as well as providing various programs such as training programs and in-service programs to allow the researchers to have a better understanding of their duties.

In the future research, it is necessary to investigate problems of firefighting qualifications in terms of other causes of the capture phenomenon such as infringed information, asymmetry of resources and the incentive to avoid conflicts and develop studies which can propose measures to improve the problems.

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