

Unusual Japanese Decision-making: Markov Process of Decision-making

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Abstract

There is not enough research on decision-making and management process of organizations that do not make a profit. Economists should include healthy companies, as well as sick ones, the same way doctors do.

Decisions that are rational or legitimate to the point of view of the parties, but which are incomprehensible to the point of view of the third party, can occur in any era, any country or culture. Although many studies in social psychology and management have been done on abnormal decision-making to save such organizations, abnormal decision-making processes that occur in Japan are different from those studied in Europe and the United States. This is due to institutional or cultural background. It is characterized by not knowing who is responsible, not knowing what they are doing for, decisions that are not for the individual benefit of the decision maker or of course not for the organizational goals. Moreover, the decision is inconsistent.

The purpose of this paper is to model this aspect. The Escalation Model shows the rigidity of decision-making arising from the sense of responsibility of decision-makers, while the university case is based on the rigidity of decision-making arising from the irresponsibility of decision-making.

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1. Introduction

Management has always revealed the decision-making and management process of an organization that makes a big profit. On the other hand, there is not enough research on organizations that do not produce such results. We consider this a big problem. The reason for this is that, even if you examine a healthy body, you cannot understand the structure of the disease, and of course you cannot fix the sick person. Economists should include healthy companies, as well as sick ones, the same way doctors do. As one of them, we, economists, should pay attention to how anomalous decision-making occurs.

Decisions that are rational or legitimate to the point of view of the parties, but which are incomprehensible to the point of view of the third party, can occur in any era, any country or culture. Sadly, the party that made the decision does not understand the kind of problem, and perhaps when it was pointed out from the outside, they reacted something like this: “ Do not act like you know everything, even though you do not understand our problems!”. This is probably what they think somewhere in their heart even if they do not say it loud and clear. In this way, there are more than a few organizations that have collapsed while receiving the support of consultants and researchers.

Although many studies in social psychology and management have been done on abnormal decision-making to save such organizations, abnormal decision-making processes that occur in Japan are different from those studied in Europe and the United States. This is due to institutional or cultural background.

It is characterized by not knowing who is responsible, not knowing what they are doing for, decisions that are not for the individual benefit of the decision maker or of course not for the organizational goals. Moreover, the decision is inconsistent.

Originally, Japan is weak in strategic thinking and tends to think very tactically, but more than that, there are abnormal decision – making processes rooted in social systems and cultural thinking. This is also a side effect of Japanese management. The purpose of this paper is to model this aspect.

2. The study of abnormal decision-making

2.1 Escalation Model

It is known that those who participate in decision-making on a problem matter from the beginning will stick to the first action guidelines, or even escalate further, and invest a great deal of resources, even if it is known that decision-making will lead to a bad situation from the subsequent course. The Escalation Model explains that decision makers at this time are "in a state of blood on their heads and stuck to a particular biased cognitive frame" Staw and Ross, 1989:217). The escalation state is assumed to have the following factors (Staw, 1997).

2.1.1 Escalation Model Assumptions

(1) Planning factors: The context of investment, i.e. the size of initial investment, creates exit barriers for decision-making. The larger the initial investment, the more buried costs exist, and the slower the recovery of the funds, and small profits or short periods of time will not be generated from the investment are within the scope of the plan from the beginning. This makes decision makers make excuses.

(2) Psychological factors

1. Self-justification: There is a tendency to be evaluated according to the plan and the personality of the person, so it is known that some people do not recognize the error, but respond to justify the original plan and continue.
2. Optimism and the illusion of control: The belief that self-made decision-making is controllable and the belief in unfounded success.
3. Framing effect: When decision makers perceive that there is a better opportunity around them, they act like changing the original course of action. In addition, when the possibility of loss is recognized, decision makers invest more to avoid it, and proceed further in a negative direction.
4. Buried cost effect: The buried cost perceived subjectively by the decision maker is large.

(3) Social factors

1. External justification and restraint: Justification resulting from decision makers' unwillingness to degrade their reputation as individuals. (Staw and Ross, 1989)
2. Leadership norms: When decision makers are forced into a difficult situation, there is a possibility that they will overlap themselves with heroism, such as facing difficulties to the end and succeeding (Stawand & Ross 1980).

(4) Organizational Characteristics: Staw, Koupt & Barsade (1997) is a case where, for example, a corporation has not been under pressure from shareholders to threaten its position due to the inorganic activation of shareholders. This is a situation where coercion does not work to prevent decision-making.

(5) Context

Staw (1997) refers not only to organizations that are in an escalating state, but also to organizations that are involved in the organization's projects, such as the existence of strong support or support organizations such as the government. Even if such negative economic results come out, it can be seen that decisions and actions that have already been made encourage awareness as a decision maker and affect the psychology of the person. In particular, the social and psychological pressure on continuity from others perceived by decision makers is important.

2.1.2 The Process of Occurrence

If you have invested effort or money in a project to make a decision, or if it takes time to get the results you want, making a decision to stop the effort so far will all be wasted.

In particular, it is clear who the decision-maker is, and the decision-maker himself believes that he can control the matter. At this time, the decision-maker falls into equating with his personality. Especially in situations where it is difficult to force withdrawal from the case, similar decisions will be repeated.

Initially, even if the purpose of the organization is rational decision-making, there is a problem when it changes to decision-making based on the protection of the decision-maker.

2.1.3 Theoretical Limit

In this model, the decision maker or leader is clear. It occurs not only at the organizational but also at the individual level, and also tends to stick to similar decisions. It is also a premise that arises from a commitment to a decision.

However, in the case of Japan, it may not be clear who the final decision-maker is, and the lethargy is the cause. Also, the content of decision-making is not a repetition of the same thing. Rather, they are making decisions that look random.

2.2 Groupthink

2.2.1 Premise

While the Escalation Model is a problem that occurs not only in groups but also in individual decision-making, Groupthink is an abnormal decision-making model that occurs due to group-specific problems.

Basically, there are 7 reasons for decision failure according to this model (Janis, 1982).

1. Lack of complete information on options
2. The causal relationship between the purpose and the choice (means) is not known
3. Consciousness decision makers do not reconsider what they have judged once
4. Ignore the first option that you feel dissatisfied with
5. Not listening to alternatives from experts
6. Ignore those who say critical things about the content of decision-making
7. Not trying to predict an accident that could normally occur

In this way, there is less debate about what to make decisions for, and decision makers tend to try to move things to "cozy" content. The case in Janis (1982) is an extraordinary decision-making in a war or war-like national crisis. In particular, the presence of "enemies" as the target of decision-making increases the collective cohesion of decision-makers and strengthens the sense of camaraderie. Some studies attempt to explain that the response of Tokyo Electric Power

Company (TEPCO) and the government during the Fukushima nuclear accident was also an unusual decision, considering the media as an enemy (Matsui, 2020).

The paper also argues that the likelihood of Groupthink occurring increases with more camaraderie. Moreover, the perceived enemy tends to be exaggerated by stereotypes.

2.2.2 The Process of Occurrence

The groupthink hypothesis of Janis (1982) is a framework model that shows that "tendency to seek agreement" or "tendency of groupthink" is observed, resulting in "symptoms of groupthink", which produces "symptoms of defective decision-making" and, as a result, leads to "fiasco". In previous studies abroad, cases of fiasco caused by an organization have been analysed to determine whether there is a corresponding fact in each item of the group thinking model, and to verify whether there is an impact of group thinking (Esser et al., 1989; Hensley & Griffin, 1986).

In other words, if there is a difference between the majority in the group and the majority, the majority persuades the eccentric to increase communication and pass on the change in his decision-making. If this persuasion fails, communication diminishes and attempts to overthrow the minority. In this way, one try to increase "coziness". There is a minority of those who object to this unclear decision.

2.2.3 Limit

It may help explain Japan's unusual decision-making in the absence of a leader, that is, not knowing who is making the decision, and that there is no presence that threatens the existence of the organization (or this might be the appearance). However, the problem here is the rigidity of the decision-making content. It is a repetition of the same thing.

2.3 Limits of the two models

The Escalation Model and Groupthink are mainly model cases occurred in the United States and Europe. Certainly these two decision-making models are quite applicable in Japan as well.

However, the limitation of these two models is that they increase the rigidity of decision-making content. In the case of Japanese organizations, they are sometimes ridiculed as having no principles, but they seem to act on the spot. In other words, it is not the rigidity of decision-making, but inability to answer the problem of the occurrence of random decision-making and the weakness of the authority of the leader or responsible person.

3. Japan's abnormal decision-making

3.1 Case studies in universities

As a prominent example here, we will look at Liaison Office, which is in charge of the relationship between universities and companies. The Liaison Office exists in most universities in Japan, where there are faculties of science and engineering, and plays a role in connecting research at universities to industry. For example, companies act as intermediaries when they want to use university research content or patents, and coordinate companies and laboratories from the early stages of research.

The university as a whole can secure external funding and contribute to the university as a whole through such means as patent income. Even at the laboratory level, there are advantages in terms of using experimental equipment and securing data that universities cannot secure. Of course, there is an advantage even from a company's perspective, which is that it is possible to secure manpower by collaborating with universities on research activities that cannot be done in-house. In fact, it is not necessarily such a win-win relationship (Watahiki 2008a), but at least it is an organization that enables reaching the goal.

3.2 Presence or absence of a job description

Usually, in order to operate an organization effectively and strategically efficient, it is necessary to set the ultimate goal of that organization. On this basis, it is necessary to design and operate sub-organizations functionally. The question is how to position industry-academia collaboration after clarifying the policy of the university as a whole, but in fact, it is one of many tasks that researchers in the Department of Natural Sciences, such as the Faculty of Engineering, are mainly engaged in, and the current situation (Watahiki 2005) is carried out in a sense of chore.

Watahiki (2006) asked if the "What should the Liaison Office do?" stipulates and whether there is a job description. 46% of the respondents answered that there was a clear description of the university, 5% answered that there was no such description, and 3% answered that there was no description of the faculty organization in charge of the Joint research Center of two national universities, the General Affairs Section and the Academic Affairs Section of private universities, and the faculty organization in charge of the collaboration of technical colleges. Among their responses, some universities have concurrently held positions with the President's Office and the academic affairs Office, and in such universities, they are in a state where they perform their original duties, and at such universities, they "respond if there is an inquiry."

Not only is there confusion in the sub-organizations run by teachers, but tasks remain ambiguous even in organizations that consist of clerical jobs. Naturally, there was no evaluation criteria for the organization.

3.3 Qualitative analysis of job descriptions

It is extremely important whether the duties of the person in charge or department are specific and clear. This is because it is originally created for the effective and efficient operation of the entire organization, and it is not limited to internal problems such as analysing the requirements for job achievement and using them as materials for recruitment, training, relocation, promotion, etc. Of course, this is a department that emphasizes the connection with outside the organization, because it is necessary for companies to understand how far outside universities, including corporates, can expect work.

3.3.1 Clear description

As mentioned above, 46% of respondents said that there was a clear job description, but the content clearly stated that there was something specific, such as publishing or holding an event to inform the university's research outside. The specific duties to be performed by the Liaison Office were to hold technical forums, coordinate communication within the university and create a public relations magazine. However, if the universities are different, the tasks of Liaison offices are different, and it is difficult to say that there are tasks that are common among Liaison Offices.

3.3.2. Ambiguous description

For example, vague descriptions that only describe “industry-academia collaboration” are included in this category. In the first place, it is unclear whether this organization has a department that conducts industry-academia collaboration itself or a department that supports collaboration. We put such an answer which is difficult to understand from the outside what can be asked into the category of this vague description. In fact, such Liaison Office appears on the homepage, but there are only things like the introduction of the system, greetings from the director of the Center, and the history of the Center listed that are not important for corporate researchers, and it is not known whether it is about research, whether it is a window for education such as internships, or a department for job search support. This is considered to be a problem. Such vague descriptions amount to 31%.

3.3.3 Main business is something other than liaison

This response was found in many universities with a small number of faculties, technical colleges, or universities with separate campuses only for the Faculty of Engineering. Such a university may be due to circumstances such as the large cost of establishing a liaison organization, the lack of personnel, or preparations for a full-scale start-up, such as the office of the faculty and the office of the president, as mentioned above. 29 departments (15%) seemed to correspond to these criteria. In addition, 9 departments (5%) answered that there was a job description, and 5 departments (3%) answered that there was no job description.

In other words, the goal of the Liaison Office is not clearly stated in the

first place, and the definition of industry-academia collaboration remains somehow ambiguous. In the previous job description, none of the organizations responded that the purpose was to bring economic benefits to the university. No mention of this was found on the target university's website. The director of the Liaison Office as a whole is not clear.

In this regard, "It is foolish to ask for cost-effectiveness because this activity is a social contribution." Responded the person in charge of the Liaison Office.

3.4 The actual tasks of the Liaison Office

As for the contents, what about the title of the job description and the actual job contents of Liaison Office? Not only social science researchers, but also engineering researchers and users who are the closest and most likely to use them for joint research do not seem to understand their work well. Most universities do not clearly specify job descriptions or basic policies, so personnel imagine "somehow" without permission in the name of the organization. At the authors observed, it was not clear to what extent the business scope should be defined. At the management meeting, the agenda was whether the faculty members selected from each faculty should do it or whether the administrative staff should do it, and in the end, it was judged on an individual basis and moving with a sense of "helping and doing it". This sense includes the meaning that the subject is not himself, and that he may express his opinion if necessary, and the consciousness of the person concerned is infinitely small.

3.4.1 Teaching staff

The director of the center is a faculty member from the faculties of science and technology that are most likely to cooperate with industry-academia. In most cases, he is appointed on the orders of the president, but remains in charge of the original undergraduate and graduate classes.

The committee members vary depending on the university, but one person is dispatched from each faculty. Faculty members who are likely to conduct joint research are selected and dispatched as much as possible, but sometimes faculty members who study sociology and philosophy from the Faculty of Humanities are also dispatched. If the dispatched faculty members are specialized in local industry and research ethics, things will go smoothly. In addition, national and public universities in Japan, especially the Faculty of Science and Engineering, will be in charge of 14 to 18 credits ⁶if they are in charge of the master's program from the faculty. The Faculty of Humanities and Economics is responsible for 28 credits (excluding language study).

Full-time teachers: At the universities where one of the authors

⁶ In Japan, 2 credits are generally conferred after the successful completion of a course consisting of 15 classes of 1.5 hours. 1 credit is conferred after the successful completion of laboratory practice and applied practice courses consisting of 15 classes of 1.5 hours.

participated and observed, they were in charge of general education and specialized classes (12 credits in total), and participated in the university-wide committee just like the faculty. Full-time faculty members have both tenure and fixed terms. In the case of full-time faculty members, they only leave their duties when they move to another university or when there is a reorganization under the order of the university. There are many positions from assistant professors to associate professors, but sometimes they have specialized subjects, and sometimes they are in charge of general education only.

Many universities have post-doctoral studies. In this case, motivation will also be higher if it relates to your research field, but it is natural that motivation will be lower because you have to respond to inquiries from companies about fields that are not relevant at all.

In fields where full-time teachers require experimentation in the field, there are complaints that experiments cannot proceed due to the absence of students, that research cannot be conducted even though they should have been employed as a faculty member, and that they have to respond to unprofessional inquiries, and they are dissatisfied with the fact that they are unable to write a paper because of the time it takes.

The management committee decides on the planning of one report, event and booklet a month, and prepares people to give lectures at each faculty, and basically, they are not at the Center. Members may be reappointed, but are replaced every 2 to 3 years.

At University where we were involved in the observation, the full-time faculty of the liaison was in a fixed post, but at another observation target university, personnel were dispatched from the Faculty of Engineering for a 2-year term. Usually with one reappointment, it is practically four years of service. In many cases, faculty members remain connected with companies even after their term of office expires. However, clerical staff are less motivated to maintain personal connections, and therefore, it was observed that their relationships break down at the same time as personnel changes. It is almost certain that either person in charge will change within 1 to 3 years, even if it is a long time, so they have to deal with it only on the spot.

3.4.2 Clerical career

We consider this a very Japanese problem. For example, even if some people retire before retirement, they will not be employed for office work at a university after the age of 30. Since national public universities are treated as civil servants, they are required to be employed until the age of 26 under the Civil Service Act. Therefore, it is impossible to hire a person who has acquired management skills in private work.

One other problem is that they will make regular personnel changes to replace the department in charge in 2 to 5 years. At the very least, if you move to a related department, you will have accumulated expertise and management skills, but you may be transferred to a department that is not related at all. For example, there is a random change from academic affairs to facility management, then

finance, and then library.

This is by no means unusual, and according to a human resources officer, "It gives a sense of tension to prevent mistakes caused by rut" (Watahiki 2008b). In an interview at a university, there was also an ironic response received: "To avoid collusion with the outside world" (Watahiki 2008b). According to Watahiki (2006), there were 54 departments (29%) had no personnel changes in principle, while 79 departments (41%) had personnel changed between 1 and 3 years.

When we observed the participants, the most problematic issues were the processing capacity and handover of administrative staff, both inside and outside the university. Immediately after personnel changes, there were cases where communication was lost because they were not used to their duties, the processing of documents was delayed, and the plan was aborted due to omissions in the succession.

Office workers working in the Liaison Office are basically treated the same as normal personnel when it comes to changes. This is also a common practice in public and national universities in Japan. In addition, in the case of public universities, they may be transferred from the prefecture or city in which they are based, so they may have to start work from scratch that is not relevant at all.

3.4.3 Part-time office work

Faculty and full-time clerk attend the meeting and hold the meeting, but there are also part-time clerical jobs, although it is a relatively large university.

In the Liaison Office, there may be one to several part-time clerical staff dispatched that work 2 and a half days per week. They will be involved in the office's work for the longest time because there are no personnel changes.

However, due to the revision of the Labor Law, if you work part-time for more than 5 years, it is common to dismiss the person once before the 5 years are completed because you are obliged to employ full-time.

For this reason, it is difficult to transfer or hand over know-how over a long period of time. Faculty personnel department said, that "From a long-term perspective, it is better to have faculty members who do not have any changes" (Watahiki, 2008a).

3.4.4 Coordinators

In this situation, it is obvious why it does not function sufficiently as a consultation desk. In order to solve this problem, more universities have introduced a coordinator system. There are 4 types.

1. Former management positions: Mainly, those who have passed the retirement age in the management of the department of industrial development of the local government or experienced in the R & D department of large enterprises will be employed. Many of them had a doctorate, and they thought they would be familiar with the technology and expected to smoothly conduct joint research with large companies that could provide large amounts of money.

2. Those who retired as university professors: As a person who knows the university well, especially the laboratory, the retired professor was expected to act as the liaison of the faculty members.

3. Post-doctoral: This is a case in which students are asked to work as coordinators as a profession until they obtain an academic post even though they have obtained a doctorate. The initial goal was to use the connections to facilitate joint research even after becoming a faculty member at the university.

4. Former managers of small and medium-sized enterprises: They were mainly expected to be mentors for university-initiated ventures, but they were not expected at first because they often had undergraduate degrees or less.

It seems that even coordinators tend to think that hiring a person with a doctorate is a necessary condition if they become a person who understands technology. In fact, there is no such thing, but some universities consider it as a minimum condition. At least in Japan, there are no people with a doctorate unless they are aiming for a research position, and as a result they meet the recruitment criteria in 1-3. Many large companies have R & D capabilities, so they have the ability to find out which faculty members at which university have the technology they need from their papers. However, the movement of retirees is not good, and many people wait for companies to come to consult without permission. On the other hand, small and medium-sized enterprises feel psychological barriers when it comes to universities, and that is why Liaison Office is needed. Rather, coordinators need to go to companies in cooperation with industry associations and Chambers of Commerce, but they do not want to go outside. Due to age issues and experience working in large organizations, there is a strong stereotype that people who have a purpose should come. In the first place, postdocs are strongly conscious of working temporarily until they have a job place, and often do not understand the meaning of coordinating. It would be the real intention to concentrate on research rather than meeting people and doing troublesome work.

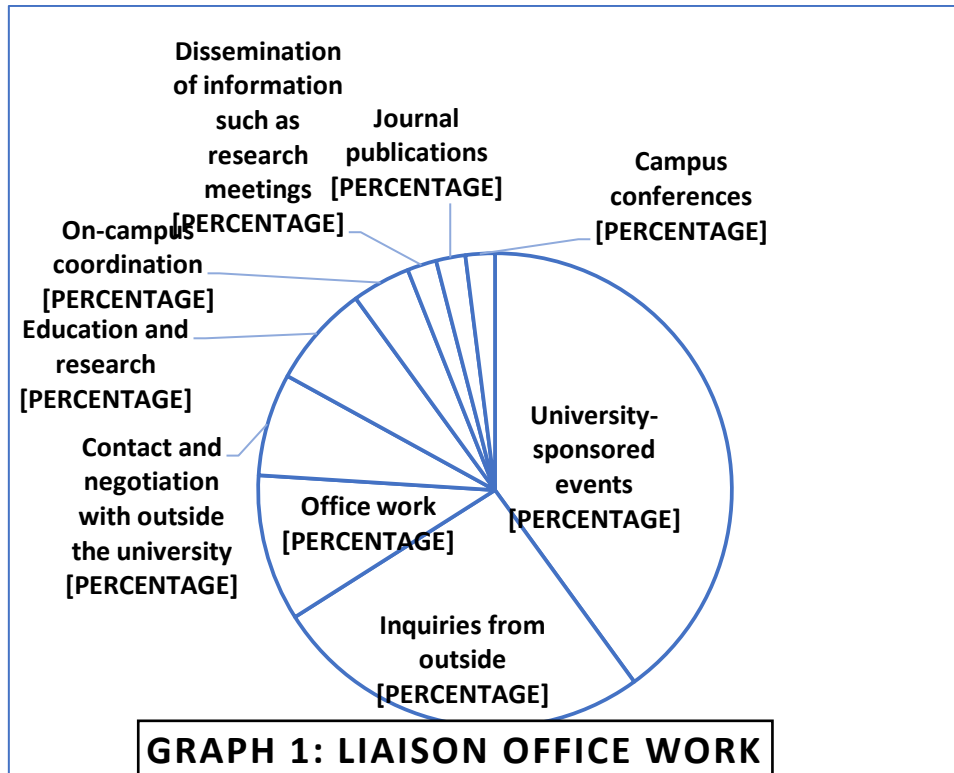
In addition, in such companies, even though prompt decision is necessary, sometimes there is no reply at all for 1 to 2 weeks after making an inquiry (Watahiki 2011). For them, it is important to communicate correctly and speed is secondary. In the end, while former managers of small and medium-sized enterprises from point 4 are best at coordinating with companies, conflicts between office workers and coordinators have not stopped, and there have been examples that do not last long, due to differences in the accounting system of companies and public accounting system.

3.4.5 Number of members

The office usually consists of a director (concurrently), a full-time faculty member (1-2), a full-time administrative staff member (1-5), a coordinator (1-3), and a cooperating faculty member (multiple concurrently). In other words, even if a large number of people concentrate on liaison activities, the content and quality of the activities of those who work there are the problem. In particular, when members of the Liaison Office, whether faculty members or administrative staff, are transferred from their workplaces within a short period of time and no longer have personal relationships with companies, etc., the quality of their activities may decline.

3.4.6 Actual operation

The Liaison Office was operated through negotiations with the former Technopolis, the Industrial Association, and the industrial promotion department of the local government, publishing the newspaper, and conducting technical consultation that seemed to be the original business in the remaining time. As a result, very little time was spent on "bridging technology" activities. Thanks to the support of the full-time clerical work and the Industrial Association, etc., the number of full-time clerical work personnel has increased to four people, and the personnel who could respond to technical consultation by the coordinator system and concurrently serving from each faculty has increased to six people. Nevertheless, they have not yet been able to participate in technical consultations and events to inform the outside of the research content.



Watahiki (2006)

We conducted interviews about this, but none of them were able to concentrate on the liaison activities themselves, and the stress seemed to be great. We asked whether the Liaison Office is capable of its original work and the ratio to which it is bound with respect to the content of the work. The answer to this question is shown in Graph 1. This graph shows the contents of the work as a ratio of time by summing the responses. Looking only at this, it seems that the original Liaison Office work, such as bridging the university with the outside, such as university sponsored events and inquiries from the outside, can be done.

3.5 The real intention of office work

Watahiki (2008a) conducted a questionnaire survey at the university where the Faculty of Engineering is located. Since the subjects of the questionnaire included administrative staff, they were sent to the person in charge of the administrative department, and even though the subjects were specified as administrative organization on the question sheet, many of them were transferred to the faculty organization even after the administrative staff organization received them. These kinds of responses were received from 5 universities. This is a case that symbolizes the gap in consciousness between clerical staff and faculty.

As Watahiki (2005) pointed out, there is a conscious gap between the Liaison Office and the organization that assists the Liaison. There are also responses such as "I do not know what the teacher is doing", "I only process the documents that the teacher has brought", and "It is impossible to get used to the new duties by personnel changes, and it is impossible to look over the whole."

In other words, there is a large gap between the faculty organization and the administrative organization, and the administrative organization has a sense that it is associated with what the faculty members do without permission, and at least there is no sense of camaraderie between the teachers.

4. Modelling

4.1 Location of the problem

In summary, it is a state of Learned Helplessness (Christopher, Maier and Seligman, 1993) that causes all participants to lose the sense that "this organization is run by themselves". The organization they are part of does not collapse, and it is possible that they might be thinking about it when it is gone. In fact, organizations with a high level of public interest, national and public universities here, have become harder to be dismissed by law, and there is a sense of security that they are protected. In this situation, although there may be a deviation in the direction of the issue, commitments such as the Escalation Model and Groupthink are very weak and have very different assumptions.

In this case, even if the decision maker perceives that there is a problem, it is relatively high psychologically to point out the cause of the problem or to eliminate the person. In that case, rather than making rational decisions, decisions will be made on the basis of historical rationality with the highest priority. Then, the decision will be based on the historical rationality of the continuation of the past from the cost of the decision itself.

This clearly shows that there is an escalation model and a mechanism that is different from Groupthink.

Therefore, it is considered that the process is as shown in the following figure. From the outset, it was not a decision to solve the problem, but a decision to adjust the interests. According to this, it is determined on the basis that all shellfish do not suffer any disadvantage, or that profits or disadvantages are not concentrated on a particular individual. The criteria for success or failure of an action is ambiguous, which can be interpreted differently even after the result is obtained. Moreover, it follows the action principle, which is similar to groupthink in this respect, but does not know who ultimately made the true decision, such as the whole shellfish unity principle (in fact, semi-coercion).

Therefore, even if a negative result occurs from the viewpoint of the observer (some parties also recognize it), it becomes almost impossible to pursue the cause. In particular, when decision makers are aware of the persistence of an organization, they will prioritize the coordination of interests among decision makers over the pursuit of cause. It seems that negative social pressure acts and continues in the opposite direction of the Escalation Model, becoming indifferent or disguised about the problem.

4.2 Decision-making Process

4.2.1 First Stage: Assumptions

Employment in Japan is still a life-long employment practice. Moreover, as mentioned above, the positions of civil servants are guaranteed by the Constitution and Civil service Law, and it is extremely difficult for full-time staff to be dismissed. Therefore, it is extremely difficult to exclude from the organization no matter how abnormal decisions are made. If you really want to dismiss somebody, the person will be transferred to the most unpopular department.

When looking at Liaison Office alone, faculty members will be transferred in 2-6 years and administrative staff will be transferred in 2-3 years. In short, members will repeat short-term transfers.

Half of the members of the steering committee will be replaced in the term of office for 2 years. Since the staff is determined by the convenience of the faculty, it is sometimes dispatched over 3 consecutive periods.

In the case of participating universities, the Liaison Office did not have clear duties. Although there were rules of operation, the rules only stated "support for industry-academia joint research", and the Governing Committee did not specify how much power it had to make decisions. The positions of full-time

faculty members were fixed, but the positions were up to assistant and lecturer (current assistant professor), and the director of the Center and the steering faculty members were held for 2 years. If faculty members with high motivation participate in industry-academia collaboration, they can be reassigned, but considering the actual burden of work, it cannot be effectively fixed. In addition, since administrative staff are under the jurisdiction of the Human Resources Department, and the management committee dispatched by each faculty is the personnel authority of each faculty, the director of the Center cannot be excluded without having any authority in regard to human resources. On behalf of the faculty, the committee created exhibits for the technical exhibition in effect. The full-time faculty members of the Liaison Office had been working for more than 5 years at the time of the survey, but since they were assistant professors, it was difficult to object to the remarks of professors dispatched from each faculty.

4.2.2 Second stage: Formation of Environmental awareness and organizational knowledge

With the exception of the author, none of the steering committee members or clerical staff had any experience working in a company, and the ability to recognize the demands of a company as a customer was extremely scarce due to the assumption that companies and universities were based on the same principles of behaviour.

On the other hand, do not specify specific goals and actions to achieve them in the plan so that problems do not manifest even if they arise from the beginning. At least we did not set a numerical target that we could judge immediately. This leads to ambiguity of causes and outcomes, and the whereabouts of responsibility are not known. This is because when it comes to writing a specific goal, the cause is explored and the cause is investigated by the members.

Furthermore, by allowing members to participate only in short-term questions, it is possible to clarify the causal relationship between plan and outcome, action and outcome. For example, while universities think only on a single-year basis due to problems in the school accounting system, there is a time lag in achieving results because it takes time to build relationships with companies. It can be argued that it is not their responsibility to change the management committee or the office, even if there is a failure in decision-making because the phenomenon of this fiscal year-crossing occurs, and failure is not recognized, and failure is not their responsibility because the management committee and the office work change. At least obviously, if the wrong actions made in the previous year have affected you, you will not be held liable because you are not a member. In particular, faculty members participating in the Liaison Office are usually supported by faculty members from the faculty, and the psychology of avoiding further increase in work and avoiding responsibility for the results works. In this way, it acts on the formation of environmental recognition ability and organizational knowledge.

In this way, it is not known whether it was successful or it failed, or what caused it, and only data of what was done in the past remains.

In this way, the succession is not done sufficiently. Half of the members of the steering committee are being replaced, and the successor is only asked about

the history of the past. In this way, it is almost automatically reported that it was done last year, and it does not leave what it did for what.

4.2.3 Third stage: Random occurrence of decision making

Due to the underdeveloped ability to recognize the environment, it is not possible to recognize the demands of the outside world, or it is not possible to rate the importance even if it knows the demands from companies and universities. At this time, the rating will be tentatively decided.

In particular, when there is a gap between the demands of the company and the perception of the Liaison Office, we will follow past cases to the extent that members can remember. In the case of relying on individual memory, a change occurs due to differences in interpretation and misinterpretation, resulting in factual error. Thus, due to insufficient handover, errors are included in past cases that should be referred to as reference. In addition, decisions made by members' feelings and power games have led to the inclusion of traditional rationality rather than objective rationality (Weber 1922). On the other hand, if you try to make a decision that is not bound by the past, you will be pursued for responsibility at that time, so make decisions so that you settle in a "safe place.", because of the cost of carrying out a procedure different from the past, in short, it is troublesome. Thus, while greatly influenced by past decisions, random decisions are made at the same time.

For example, in the case of a company, we held a technology exhibition for a company researcher on a holiday, even though we know that it is possible to treat it as a business trip normally on a weekday. This was rejected on the grounds that it was the same last year, despite suggestions from the steering committee at the decision-making meeting. Here, the consequences of what was held on the holiday were not taken into account at all. In addition, for the reason of using hotels in the city fairly, it was observed that the venue was not a hotel in front of the station without considering the transportation convenience, but a hotel with few parking lots in the shopping street more than 2 km from the station.

Such an objective is why a decision that is not rational does not come to an abort. It is to appeal to diligence rather than achievement. This is an act of satisfying the desire for approval by showing that people who do not know the situation look at it and are striving (Ota 2010, Watahiki 2018).

4.2.4 Fourth Stage: Decision-making Cycle

Since decision-making itself is not rational in purpose and results are not clear, actions that are unrelated to the results originally to be obtained may appear. In the first place, members are in a state where they are difficult to be excluded, and as long as they do something, they are not particularly punished. As a result, even if a problem arises, it will "not notice" or "pretend not to notice" and pass as it is, and it will support decision-making that does not lead to results.

Companies that feel psychological barriers to universities do not strongly request, so Liaison Office cannot recognize that request. Thus, even if there are consequences that the maintenance of the system cannot meet, sanctions will not be imposed if, at least, decisions and actions are taken in the same manner as in the

previous period.

Decisions that do not lead to any outcome will earn the cause of social contribution. Thus, the random walk continues.

In fact, in the previous participant observation, we did not distribute questionnaires to measure satisfaction for the exhibition participants, and it remained unclear which local company researchers came. A full-time faculty member at the Liaison Office said that "50% were local government officials." It is said that there were many so-called friends who did not lead to joint research.

This is not limited to the Liaison Office of universities from Japan. It occurs in organizations whose work content is ambiguous, in which it may be more convenient to have international departments, etc., or in organizations that were created because they were created at other universities. This approach is seen in the public administration and also in large companies.

Random walk of decision making

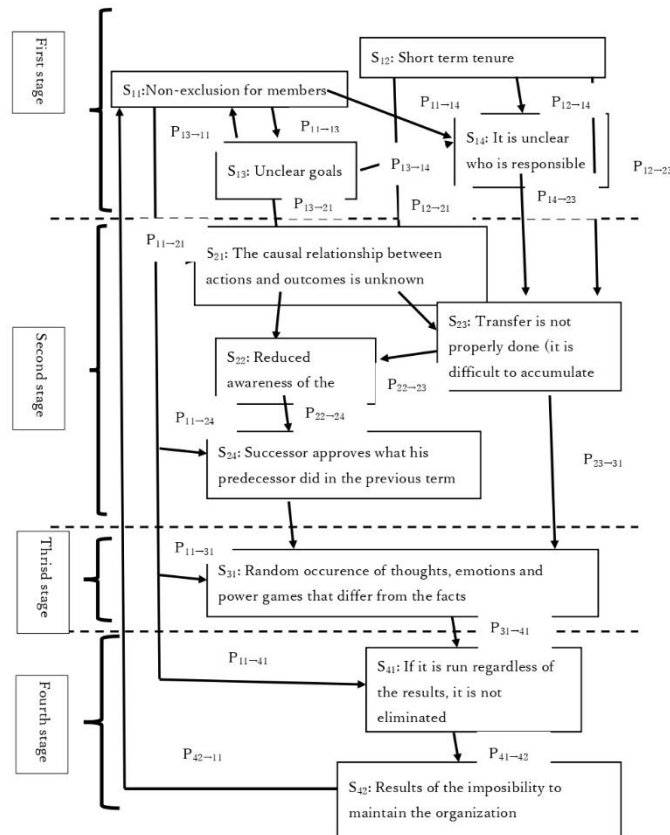


Figure 1. Decision Flow

4.3 Markov Process Description

4.3.1 Markovality

The influence on decision-making in Figure 1 can be expressed as a Markov process. A Markov process is a stochastic process with Markovality. Markovality refers to the conditional probability distribution of future states having properties that depend only on the current state and not on any state in the past. That is, given the past state, the current state (the path of the process) is conditionally independent.

A stochastic process is a random variable or phenomenon that changes over time. When a state $n \in \{0,1,2, \dots\}$ in discrete time X_n is expressed as a stochastic process $\{X_0, X_1, X_2, \dots\}$.

In the case of this study, it can be replaced with the number of decisions that can be made within the year or 1 year.

In this case, the set of all possible states S holds for all $n \in \mathbb{N}, x_0, x_1, \dots, x_n, x_{n+1} \in S$.

$$P(X_{n+1} = x_{n+1} | X_0 = x_0, X_1 = x_1, \dots, X_n = x_n) = P(X_{n+1} = x_{n+1} | X_n = x_n)$$

The property of Equation 1 is called Markov chain. In particular, when the right-hand side of equation 1 is independent of n , in other words:

$$P_{i \rightarrow j} = P(X_{n+1} = j | X_n = i), \quad i, j \in S$$

it can be expressed as a stationary Markov chain. This paper works with stationary Markov chains unless otherwise noted.

When a model is a stationary Markov chain, it becomes

$$P_{i \rightarrow j} = P(X_1 = j | X_0 = i) = P(X_{n+1} = j | X_n = i), \quad i, j \in S, \quad \forall n \in \mathbb{N}$$

At that time,

$$\sum_{j \in S} P_{i \rightarrow j} = 1, \quad i \in S$$

Also, let's assume the probability of transition $j \in S$ from a state $i \in S$ to a state after a period m .

$$P_{i \rightarrow j}^{(m)} = P(X_m = j | X_0 = i) = P(X_{n+m} = j | X_n = i), \quad m, n \in \mathbb{N}$$

Then, the transition probability matrix P is given by the following equation. This represents the subscript shown in Figure 1.

$$P = \begin{pmatrix} P_{0 \rightarrow 0} & P_{0 \rightarrow 1} & \cdots \\ P_{1 \rightarrow 0} & P_{1 \rightarrow 1} & \cdots \\ \vdots & \vdots & \ddots \end{pmatrix}$$

At that time, $(P^2)_{i \rightarrow j} = \sum_{k \in S} P_{i \rightarrow k} P_{k \rightarrow j} = P_{i \rightarrow j}^{(2)}$

Generally,

$$P^m = \begin{pmatrix} P_{0 \rightarrow 0}^{(m)} & P_{0 \rightarrow 1}^{(m)} & \cdots \\ P_{1 \rightarrow 0}^{(m)} & P_{1 \rightarrow 1}^{(m)} & \cdots \\ \vdots & \vdots & \ddots \end{pmatrix}, \quad P_{i \rightarrow j}^{(m)} = (P^m)_{i \rightarrow j}$$

$\pi_i^{(n)} = P(X_n = i)$ Is, and $\boldsymbol{\pi}^{(n)} = (\pi_0^{(n)}, \pi_1^{(n)}, \dots)$ is left, $\boldsymbol{\pi}^{(0)}$ is called the initial probability vector. $\boldsymbol{\pi}^{(0)}$ can be obtained and then each element of $\boldsymbol{\pi}^{(1)}$ is obtained as $\pi_i^{(1)}$ ($i \in S$).

$$\begin{aligned} \pi_i^{(1)} = P(X_1 = i) &= \sum_{k \in S} P(X_0 = k, X_1 = i) \\ &= \sum_{k \in S} P(X_1 = i | X_0 = k) P(X_0 = k) \\ &= \sum_{k \in S} \pi_k^{(0)} P_{k \rightarrow i} \end{aligned}$$

When $n \geq 2$,

$$\begin{aligned} \pi_i^{(n)} &= \sum_{k \in S} \pi_k^{(n-1)} P_{k \rightarrow i} = \sum_{k \in S} \sum_{l \in S} \pi_l^{(n-2)} P_{l \rightarrow k} P_{k \rightarrow i} \\ &= \sum_{l \in S} \pi_l^{(n-2)} \sum_{k \in S} P_{l \rightarrow k} P_{k \rightarrow i} = \sum_{l \in S} \pi_l^{(n-2)} P_{l \rightarrow i}^{(2)} \end{aligned}$$

Therefore, in general it is as follows.

$$\pi_i^{(n)} = \sum_{k \in S} \pi_k^{(n-1)} P_{k \rightarrow i} = \sum_{k \in S} \pi_k^{(n-2)} P_{k \rightarrow i}^{(2)} = \dots = \sum_{k \in S} \pi_k^{(0)} P_{k \rightarrow i}^{(n)}$$

That is, it becomes

$$\boldsymbol{\pi}^{(n)} = \boldsymbol{\pi}^{(n-1)} P = \boldsymbol{\pi}^{(n-1)} P^2 = \dots = \boldsymbol{\pi}^{(0)} P^n$$

4.3.2 Adaptation to Model Diagrams

Based on the equation described in chapter III, it is adapted to the model diagram created in this study. The state in this model diagram is a finite set of state numbers 11. When this model diagram is a stationary Markov chain, the variables were placed as shown in Figure 1. In this model diagram, there is a state in which there is only 1 transition from one state to the next. Therefore, it becomes

$$P_{14 \rightarrow 23} = P_{22 \rightarrow 24} = P_{24 \rightarrow 31} = P_{31 \rightarrow 41} = P_{41 \rightarrow 42} = P_{42 \rightarrow 11} = 1$$

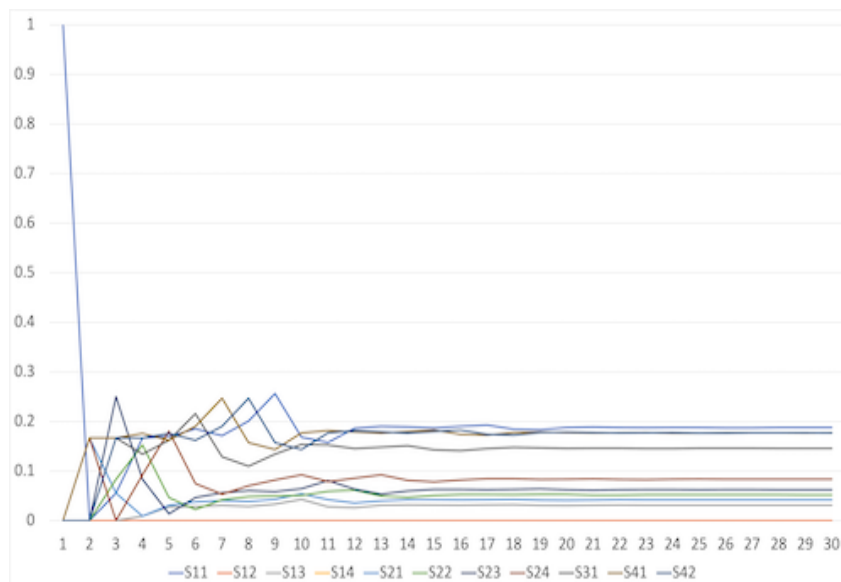
Also, the initial probability vector becomes $\boldsymbol{\pi}^{(0)} = (\pi_1^{(0)}, \pi_2^{(0)}, \dots, \pi_{11}^{(0)})$. Therefore, the probability vector n after the period becomes the transition probability of each state. Therefore, the transition probability of this model can be obtained by using equation (1).

4.3.3 Example of putting a number in a variable

In this section, the formulas described in the previous section and the previous section are used to calculate the numerical values. Here, the calculation was performed by putting a number in a variable as follows.

$$\begin{aligned} P_{11 \rightarrow i} &= 1/6, & (i \text{ is linked from } S_{11}) \\ P_{12 \rightarrow i} &= 1/3, & (i \text{ is linked from } S_{12}) \\ P_{13 \rightarrow i} &= 1/3, & (i \text{ is linked from } S_{13}) \\ P_{21 \rightarrow i} &= 1/2, & (i \text{ is linked from } S_{21}) \\ \boldsymbol{\pi}^{(0)} &= (1, 0, \dots, 0) \end{aligned}$$

The result of performing the above calculations 30 times was the following graph.



Graph 2

Looking at this graph, it is observed that the value is stable since $n = 20$. In this way, the probability distribution that no longer changes is called the steady distribution of the Markov chain, and the period until convergence is called the burn-in period. Looking at the graph above, the period up to $n = 20$ is the burn-in period. Since the probability of transition to each state is not stable during this period, it can be seen that decision-making in project decision-making (or department) is made through various transition states. Therefore, it is not possible

to make a forecast that it will go through this transition state in the burn-in period. On the other hand, in the period after the burn-in period, since the probability distribution converges, it is possible to make an estimate of which transition state it is going through.

In other words, decision-making should converge and repeat the same thing.

However, in general Japanese-style companies and government offices, as mentioned in chapter III, there are cases in which the organization itself is changed, not only by relocating people every few years, but also by relocating people every few years. It is possible that this burn-in period is potentially causing this.

5. Considerations

It is shown that decision-making goes through the Markov process in chapter IV. Looking at graph 2, it can be seen that it is almost stable since the 10th time from the beginning, and stable at the 20th time. This is characteristic of the Markov process. If the Markov process is inherent, decision-making rigidity should occur, such as the escalation model or groupthink.

However, here is the problem. The Liaison Office has not taken over as it was when it was founded. In the 10 to 15 years after the reorganization, the name was changed to a different name, and the contents of the work changed to include cooperation of student education, and in some cases, it has become a department that plans basic education courses for the general public. The purpose of this is to avoid being in a silo state, not knowing which department to contact from the outside, and being blocked from contacting the department in charge because "this department is not here". The reason we wrote it with this guesswork is that the purpose of the window of industry-academia collaboration is not clearly stated even if it is reorganized as usual.

In addition, there are financial problems. The Ministry of Education, Culture, Sports, Science and Technology has cut the total budget by 1% per year. This is to promote the efficiency of the organization, but this has led to the reorganization of the faculties and the consolidation and abolition of other departments at the same time. The merger itself is not a bad thing, but because it is not possible to dismiss by law, it must be transferred to some department and absorbed.

In other words, the part that has been stabilized by this reorganization returns to the initial setting again, leading to a random continuation.

In other words, the normal Markov process leads to stability, but it changes the organization itself, which is a prerequisite, so there are random single and double loops that are not single and double loops of Argyis (1999) 's organizational learning.

6. Conclusions

The Escalation Model shows the rigidity of decision-making arising from

the sense of responsibility of decision-makers, while the university case is based on the rigidity of decision-making arising from the irresponsibility of decision-making. It is rigidity due to the prioritization of the internal interests of the organization. This theory does not explain cases where the location of responsibility is unclear.

On the other hand, it is similar to Groupthink in that it unconsciously seeks group cohesion within an organization, but it seems to be making random decisions from the observer's point of view rather than the rigidity of decision making. This randomness is random in that it pretends to have made an effort, even though it is planning an event almost the same as last year to avoid criticism from the outside.

Furthermore, the most morbid is that the effort made not to produce results, but decisions are made on the basis of maximizing the evaluation from others. In order to do so, it is an act to avoid making the results objectively understandable, and to make "doing something" and "doing something unusual" stand out.

This is probably the cause of the low labour productivity of Japanese organizations.

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