

**Revisiting the Classification of the Japanese Welfare State and
Healthcare System**

by

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Abstract

The study of the patterns of welfare states initiated by Esping-Andersen's path-breaking typology has become popular among academia since the 1990s. In Esping-Andersen's welfare regime typology, Japan was the only welfare state outside the Western world. Using the three types of welfare regimes proposed by Esping-Andersen, Japan was classified as liberal, conservative, or a hybrid by researchers. However, the classification of the only non-Western case triggered debate. Following this ongoing welfare modelling business, various classifications of the Japanese welfare state have been developed in addition to Esping-Andersen's framework: a fourth familialism world, a member of the East Asian welfare model, or a unique welfare state. In addition to this unsolved puzzle of classifying the Japanese welfare state, Esping-Andersen mainly focused on income maintenance without paying sufficient attention to healthcare in his welfare regime typology. Analysts of comparative healthcare systems developed another trend of typologies concentrating on healthcare systems. Although there was an absence of a framework for classifying the healthcare system, Japan tended to be classified as a Bismarckian healthcare system (i.e., the social insurance model). There was less attention given to Japan in healthcare system typologies as it was in welfare regime studies. This thesis aims to provide an up-to-date classification of the Japanese welfare state and healthcare system by using hierarchical cluster analysis and fuzzy cluster analysis. The combination of two types of cluster analysis not only established the classification of Japan but also revealed the membership degree of Japan, which was particularly useful to analyse a hybrid case. The results showed that the Japanese welfare state seemed to be a hybrid with a weak tendency to be grouped with other conservative welfare regimes, while the healthcare system was closer to other Bismarckian healthcare systems. Furthermore, welfare regime typologies and healthcare system typologies were developed separately. This thesis attempted to connect the literature on welfare regime

typologies and healthcare system typologies by applying the concept of elective affinity. Bridging these two streams of classification also contributes to the consistency issue between different policy sectors within the broader welfare state. The results of cluster analysis showed that the welfare regime and the healthcare system were relatively consistent in Japan.

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List of Abbreviations

ANOVA	analysis of variance
CME	coordinated market economy
CWEP	Comparative Welfare Entitlements Project
CPF	Central Provident Fund (Singapore)
DA	discriminant analysis
ESS	error sum of squares
FA	factor analysis
FsITA	fuzzy-set ideal type analysis
FsQCA	fuzzy-set qualitative comparative analysis
GHO	Global Health Observatory
GNI	gross national income
GNP	gross national product
GP	General Practitioner
HDI	human development index
ILO	International Labour Organisation
ISSA	International Social Security Association
LDP	Liberal Democratic Party (Japan)
LIS	Luxembourg Income Study
LME	liberal market economy
LTC	long-term care
MANOVA	multivariate analysis of variance
MMD/SNTV	multimember districts and single nontransferable vote
NEFRC	non-Euclidean fuzzy relational data clustering
OECD	Organisation for Economic Co-operation and Development

PCA	principal component analysis
QCA	qualitative comparative analysis
RQ	research question
SIL	silhouette score
SIL.F	fuzzy silhouette score
SOCX	OECD Social Expenditure Database
UPGMA	unweighted pair-group method using the average approach
UPGMC	unweighted pair-group method using the centroid approach
UHC	universal health coverage
UN	United Nations
VoC	varieties of capitalism
WPGMA	weighted pair-group method using the average approach
WPGMC	weighted pair-group method using the centroid approach
WHO	World Health Organisation

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Chapter 1 Introduction

While welfare systems faced similar external pressures, their internal dynamics and social structures varied. Both external and internal factors interacted to shape the development of welfare states. At times, convergence and similarities could be observed among welfare states, but divergence and diversity persisted across different national contexts (Alcock & Craig, 2008, p. 17). In order to seek patterns of welfare states, there has been a tradition to capture the similarities and differences. Esping-Andersen's *Three Worlds of Welfare Capitalism* in 1990 has been identified as a path-breaking publication for the academic industry in modelling welfare states (Abrahamson, 1999; Powell & Barrientos, 2011). Abrahamson (1999) wrote that every welfare state researcher has made a reference to Esping-Andersen's welfare regime since the publication of his work (p. 401). Danforth (2014) stated that the "three worlds" typology was one of the heuristics for analysing and studying contemporary welfare states (p. 164). Emmenegger et al. (2015) argued that Esping-Andersen (1990) satisfied the criteria to be a classic (p. 4).

In this milestone of the welfare modelling business, advanced welfare states were classified into three welfare regimes (see Chapter 2 for more details). Represented by Esping-Andersen (1990), the welfare modelling business literature heavily focused on cash benefits and income maintenance policies. Healthcare policy remained marginal in the welfare regime literature. Nevertheless, in the realm of comparative healthcare systems, patterns of healthcare systems also attracted comparative healthcare system analysts (Burau & Blank, 2006). The "typology business" could be applied to healthcare (Ferragina & Seeleib-Kaiser, 2011), and a similar "healthcare modelling business" could be identified among these debates.

This thesis is situated between these two streams of the modelling business, with a special focus on Japan. On the one hand, Japan was the only non-Western welfare state included in Esping-Andersen's (1990) analysis of welfare regimes. On the other hand, Japan

was the most advanced economy in East Asia and a central member of the East Asian welfare model. This intersection triggered the research in this thesis to revisit the classification of the Japanese welfare state and its healthcare system. In addition, this thesis aims to connect the classifications of Japan between welfare regime typologies and healthcare system typologies. Inspired by Kasza's (2002, 2006) argument for the inconsistency between different policy sectors in the broader welfare state, the elective affinity between the welfare system and the healthcare system in Japan is examined in this thesis.

This introductory chapter starts with defining the key terms in this thesis and introducing the background of the research (Section 1.1). Then, stressing the importance of typologies as tools in studying welfare states and healthcare systems, a brief introduction to the modelling business is provided (Section 1.2). After that, in order to highlight the controversial Japanese case in welfare state and healthcare system typologies, the historical development and institutional features of the welfare system and the healthcare system in Japan are articulated (Section 1.3). Subsequently, the research objectives and research questions of this thesis are outlined (Section 1.4). Finally, the structure of this thesis is demonstrated (Section 1.5).

1.1 Background and Definitions

Before delving into the classification of the Japanese welfare state and healthcare system, it is important to review the research background and define key terms (Section 1.1.1). In addition, the historical development of established welfare states is briefly demonstrated (Section 1.1.2). Then, theories explaining these developments are outlined (Section 1.1.3), as they often serve as theoretical bases for classifying different welfare states.

1.1.1 Welfare State and Welfare Regime

There was no precise definition of the term "welfare state". This concept involved different disciplines as well as theoretical perspectives, and its meaning has changed over

time (Kuhlmann, 2019, p. 13). Garland (2016) perceived the “welfare state” as a “misnomer” because the welfare state did not necessarily relate to state institutions, as non-state actors played significant roles in welfare provision (p. 3).

Nevertheless, some scholars have tried to define this contested term (see Béland & Petersen, 2015; Powell, 2020). Briggs (1961) considered the welfare state as a state where power was used to intervene in the market by guaranteeing minimum incomes, preventing individuals from social risks (e.g., illness), and offering a certain range of social services (p. 228). Wilensky (1975) stated that “the welfare state is government-protected minimum standards of income, nutrition, health, housing, and education, assured to every citizen as a political right, not as charity” (p. 1). Perspectives on the welfare state varied: a narrow view saw it primarily as social amelioration through income transfers and service provision, while a broader perspective considered the role of the state within the political economy (Esping-Andersen, 1990, p. 1). Although most scholars agreed that pensions, healthcare, long-term care, housing, social assistance, and family policy were core components of the welfare state, it was still highly controversial to accurately confine which policy sectors should be included in the welfare state, as the definition varied by national contexts and the theoretical bases of researchers (Kuhlmann, 2019, p. 16). Esping-Andersen (1990) adopted a broader view of the welfare state and often referred to it as “welfare capitalism”. However, as Chapter 2 discusses, Esping-Andersen (1990) mainly focused on income transfer when constructing the typologies based on decommodification and stratification. This was closer to the narrow definition of the welfare state mentioned above.

The diffusion of the term around the world added to semantic confusion (Béland & Petersen, 2015). The construction of the welfare state was exclusively based on Western advanced democracies, and therefore ethnocentric (Walker & Wong, 1996, 2004, 2013). Hence, there was a need to consider how “welfare” and “welfare state” were used in non-

Western contexts. In Japan, the term “welfare” could be translated as *fukushi* or *kōsei*. The former referred to a person who was receiving means-tested benefits, while the term *fukushi kōsei* could be used to describe the welfare provided by companies as occupational welfare. The term welfare state was usually translated as *fukushi kokka* (Shinkawa & Tsuji, 2015, p. 193). Another term relating to the welfare state used in the Japanese language was *shakai hoshō* (i.e., social security), which was often used to describe social insurance schemes based on employment and national insurance schemes established by the state to cover the self-employed (Furukawa, 2008, p. 74; Shinkawa & Tsuji, 2015, p. 193). The policymakers in Japan also used the term “Japanese-style welfare society” in order to differentiate the Japanese welfare state from its Western counterparts (Shinkawa & Tsuji, 2015; Takahashi, 1997).

“Welfare regime” is another important concept in this thesis. In Esping-Andersen’s (1990) words, it could show that “contemporary advanced nations cluster not only in terms of how their traditional social welfare policies are constructed, but also in terms of how these influence employment and general social structure” (p. 2). A “regime” signified the complex institutional relationships between the state and the economy. It also implied the interaction between values and norms and path-dependent institutions (Davis, 2001, p. 81). A welfare regime could be defined as the configuration of main providers of welfare (i.e., the state, the market, and the family) to manage social risks (van Kersbergen & Manow, 2017, p. 365).

Since this thesis is situated in the “welfare modelling business”, the usage of terminology follows the literature. The term welfare state (or welfare system) in this thesis refers to policies, mechanisms, and institutions established by the state to protect individuals from various risks. For the aim of this thesis, the classification mainly focuses on two policy sectors: income maintenance and healthcare. The term “welfare state” in this thesis uses the narrowest definition, which mainly refers to income maintenance measures implemented by

the state. Following scholars represented by Esping-Andersen (1990, 1999), the term “welfare regime” describes the complex interaction between major welfare providers. “Welfare state typologies” and “welfare regime typologies” are intellectual efforts to identify the patterns and variations of welfare states and welfare regimes (see Section 1.2). These typologies can also be applied to countries and regions other than advanced economies in Europe and North America. For example, Chapter 3 reviews the literature discussing East Asian welfare regimes, which focuses on the patterns of welfare provision in East Asia. In Esping-Andersen’s (1990) classical typology, advanced democracies could be divided into three types of welfare regime: liberal, conservative, and social democratic (see Section 2.2.2 for relevant discussion).

Based on the narrow definition of the welfare state, classification of the Japanese welfare state does not include the classification of the Japanese healthcare system, since income maintenance and the healthcare system are treated relatively independently in this thesis. It should be noted that this does not mean other policy sectors in broader definitions of the welfare state, such as education and housing, are not important. More explanations on the issue of the selection of policy sectors can be found in Section 5.2.

1.1.2 The Historical Development of Welfare States

It should be noted that the “welfare state” was a concept derived from the development of European welfare systems and was often used to describe Western Europe and North America. According to the definition of the “welfare state”, although there were some types of welfare provision existing in Asia, Africa, and Latin America, modern welfare states in these regions were established later than their European and American counterparts. As Esping-Andersen’s (1990, 1999) welfare regime analysis only covered Western European and Anglo-Saxon countries at the beginning, this thesis focuses on these established welfare states. Although this thesis does not directly examine the historical development of welfare

states, the similarities and differences of institutional features between welfare states are associated with historical development. Hence, Section 1.1.2 provides a brief historical account of the development of modern welfare states.

The origin of state welfare provision could be dated back to “the Poor Law”, which established a national system of social relief in England in 1601. In the nineteenth century, problems of poverty accompanied by industrialisation, urbanisation, and population growth, have increased the salience of social policies in European countries. Philanthropy and poor laws have become insufficient to deal with social problems caused by rapid industrialisation (Kuhnle and Sander, 2021, pp. 75-76). The embryonic version of the modern welfare state was the first social insurance law promulgated by German Chancellor Bismarck in the 1880s. This social insurance system to protect workers against risks was designed under the influence of paternalism and authoritarianism in order to maintain the social order (Leisering, 2005, p. 114). Economic crises increased the significance of national governments to build a safety net for most people. The growing scale and intensity of wars also stimulated the development of social policy (see Titmuss, 1976, pp. 78-80). From the end of the Second World War to the 1970s, Western countries experienced rapid economic growth. Economic prosperity facilitated the expansion of welfare states. Institutional competition and ambition to outcompete the soviet systems instigated by the Cold War also fuelled the growth of welfare expenditure (Castles et al., 2010, p. 8). As a result, the range of social security has expanded, and the generosity of welfare programmes has increased during this period.

However, stagflation caused by the oil crisis in the 1970s ended the Golden Age of established welfare states. Under these new circumstances, the political climate has shifted from supporting welfare states to scepticism. Mature welfare states have entered a period of retrenchment. In addition to external challenges such as globalisation, welfare states have been confronted with domestic problems. The growth of post-industrial economies and

tertiary sectors has reduced the speed of productivity improvement (Pierson, 1998, pp. 541-542). Rapid population ageing has imposed fiscal burdens on social expenditure and healthcare expenditure. Structural changes in labour markets, exemplified by increasing female participation and informal employment, have posed challenges to welfare systems designed mainly for male breadwinners under Fordism. In addition, ethnic diversity brought by migration has undermined common values that legitimised the redistribution among citizens (Castles et al., 2010, p. 13). Prolonged low economic growth and the 2008 global economic crisis ballooned the government budgets and indebtedness, which threatened the financial stability of welfare states. More recently, rising populism and anti-globalisation were hostile to welfare services and payments provided to immigrants (Béland et al., 2021, pp. 12-13). The global spread of the COVID-19 virus also spurred government intervention and a surge in social expenditure. The importance was attached to the welfare state and the healthcare system at an unprecedented level due to the pandemic (pp. 14-15).

Though it is possible to classify welfare states in different historical periods, the discussion of classifications and typologies of welfare states in this thesis is centred on contemporary welfare states. This is because the welfare modelling business is designed to capture the institutional features of modern welfare states. Esping-Andersen's (1990) classification was based on the welfare states in the 1980s, and new typologies emerged with the development of welfare states since the 1990s. Another reason is that one of the major aims of this thesis is to provide an up-to-date classification for the Japanese welfare state, which means that the analysis in this thesis is not longitudinal.

1.1.3 Explaining the Development of Welfare States

Although Section 1.1.2 demonstrates an overall picture of the historical development of advanced welfare states, each welfare state has its own development trajectory. The differences in historical development largely resulted in the variety of welfare systems.

Researchers of welfare states were interested in explaining the development of welfare states.

Industrialisation was one explanation that was closely related to the classification of welfare states. From a structural perspective, Wilensky (1975) argued that economic growth led to the emergence of welfare states (see Section 2.1 for more details). Another important theory was the power resources theory, which highlighted that the power resources possessed by different social classes shaped social policy (e.g., Esping-Andersen, 1985a, 1985b; Korpi, 1980). According to Béland and Mahon (2016), there were other explanations for the development of welfare states: national values and cultures could shape the ideas of voters and policymakers, which further influenced their preferences toward social policy; the role of companies and employers could exert their influence on social policy, exemplified by the varieties of capitalism (VoC) theory (Hall & Soskice, 2001); and historical institutionalism emphasising the influence of political institutions in the development of welfare states.

As Chapter 2 demonstrates, these explanations of the development of welfare states are intertwined with the classification of the welfare state. Industrialisation played a key role in classifying the welfare state, although Wilensky (1975) also noticed that industrialisation cannot solely account for cross-national differences. The power resources theory was one of the underlying logics of Esping-Andersen's (1990) typology. Advocates of the VoC theory criticised Esping-Andersen (1990) for ignoring the role of companies and employers in social policy.

1.2 The Modelling Business of Welfare States and Healthcare Systems

Typologies are valuable theoretical tools for social science researchers. Classification referred to a process seeking similarity, while typology, another term for classification, was a more conceptual form of classification (Bailey, 1994, p. 4). A typological theory delineated independent variables into different groups and generalised their effects on dependent variables (George & Bennett, 2005). As a research method in social science, typology has a

long history. It could be dated back to the concept of “ideal type” proposed by sociologist Max Weber in the early twentieth century (see Section 5.1 for relevant discussion).

Classification had its merits in social science research: it served as both a descriptive and heuristic tool, reduced complexity, identified similarities and differences between research objects, facilitated comparisons across groups, and helped researchers examine relationships. Additionally, classification could serve as a criterion for analysis (Bailey, 1994, pp. 12-14). However, it should be noted that classification and typologies had their limitations, such as timelessness, reification, and non-explanation (pp. 15-16).

Due to the diversity of national political-economic contexts, welfare states had different shapes and characteristics. Welfare states were also changing and evolving. Nevertheless, scholars were attempting to identify models or regimes that included groups of welfare states sharing similar conceptions and institutions. For example, Chassard and Quintin (1992) divided the conceptual framework of European welfare states into two categories: Bismarckian tradition and Beveridgean mode (p. 94). Berghman (1997) suggested three traditions in European social policy: Atlantic/Beveridgean, Continental/Bismarckian, and Scandinavian (p. 125). The intellectual roots of classification welfare states could be dated back to Wilensky and Lebeaux (1958) and Titmuss (1976) (see Section 2.1 for relevant discussion).

In the field of comparative healthcare systems, scholars have developed various typologies to classify healthcare systems (see Chapter 4 for relevant discussion). Within these typologies, a prominent classification, proposed by the Organisation for Economic Co-operation and Development (OECD) (1987), included the national healthcare service model (Beveridgean model), the social insurance model (Bismarckian model), and the private insurance model. However, this typology has been criticised as overly simplistic, and the term “private insurance model” failed to capture the pluralism of healthcare systems, such as

the healthcare system in the United States. To address these limitations, healthcare system typologists have proposed more nuanced concepts and sophisticated frameworks (see Chapter 4 for relevant discussion).

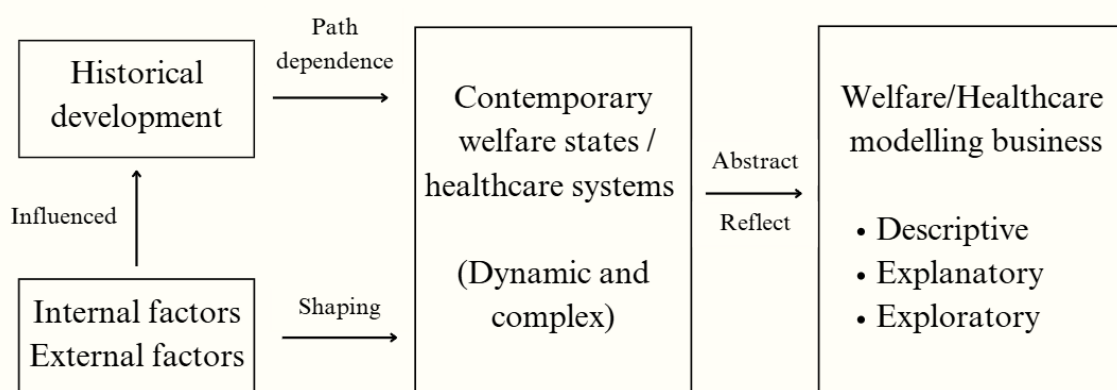
As other chapters of this thesis demonstrate, some researchers specialising in welfare regime typologies primarily focused on income maintenance policies, while other scholars considered all major policy sectors in the welfare state. Healthcare system analysts recognised Esping-Andersen's (1990, 1999) contributions, but a persistent gap remained between welfare regime classifications and healthcare system typologies, as explicit comparisons between the two policy sectors remained limited. Kasza's (2002, 2006) argument was worth noting here: due to inconsistencies across different policy sectors, the term "welfare regime", which encompassed various policy areas (e.g., pensions, unemployment, healthcare, and housing), was not a useful analytical tool. Therefore, the consistency between income maintenance and service provision (especially healthcare), remained largely unexplored within the context of welfare modelling business (see Chapter 5 for relevant discussion).

In this thesis, terms such as "welfare state typologies" and "welfare state classifications" are used interchangeably, since all these terms refer to intellectual attempts to analyse the similarities and differences of welfare systems and identify patterns based on their institutional features. This also applies to the healthcare system. "Healthcare system classification" and "healthcare system typology" are used interchangeably.

The roles of welfare state typologies and healthcare system typologies are shown in Figure 1.1. The brief review of the historical development of modern welfare states or healthcare systems in Section 1.1.2 shows that various internal factors (e.g., power resources) and external factors (e.g., globalisation, financial crisis) can impact the historical development of welfare states and healthcare systems. The institutional features of

contemporary welfare states and healthcare systems were influenced by their historical legacies (i.e., path dependence). Simultaneously, those internal and external factors were shaping the institutions of contemporary welfare states and healthcare systems, resulting in a dynamic and complex picture. The roles of various classifications and typologies were to abstract and reflect this dynamic and complex picture for the sake of describing the similarities and differences, explaining the varieties, or exploring potential variables. One of the notable contributions of Esping-Andersen (1990) was that his classification of advanced welfare states not only described the institutional-redistributive patterns of modern welfare systems but also sought an explanation for these differences by power resources (Béland & Mahon, 2016, pp. 29-30). As the aim of this thesis is to provide an up-to-date classification of Japan, description is the main research objective.

Figure 1.1: The Roles of Modelling Business



1.3 The Welfare System and Healthcare System in Japan

Compared to its Western counterparts, the development of the Japanese welfare state was relatively late. Stimulated by the needs of wars (cf. Kasza, 2006), there were some developments before and during the Second World War. For example, mainly covering the employees in large firms, Employee Health Insurance and Employee Pension Insurance were introduced in 1927 and 1942, respectively. After the Second World War, the General Headquarters (a.k.a., Supreme Commander for the Allied Powers) introduced a series of

reforms in welfare policies, such as social assistance, unemployment insurance, disabled welfare, and children's welfare. It was argued that these reforms followed an American model (Takahashi, 1997, p. 56; Uzuhashi, 2009, p. 213). After the end of the occupation, reforms aimed at expanding the coverage of pension and healthcare insurance were enacted. With the economic growth, the Japanese welfare state witnessed a trend of expansion in the 1960s and 1970s. The universal coverage of old-age pension and health insurance was achieved in 1961. As a consequence of the welfare expansion, 1973 was called the first year of welfare in Japan. However, the expansion of the welfare programmes was interrupted by the oil crisis. Since the 1980s, welfare reforms have been marked by both retrenchment and expansion. On the one hand, cost-containment policies have been implemented, such as the abolishment of free healthcare services for individuals aged 70 and over in 1982. On the other hand, expansion occurred in long-term care services, most notably with the long-term care insurance introduced in Japan in 2000 (cf. Yamada & Hidenori, 2020).

The current Japanese pension system consists of three tiers. The first tier is the basic pension (i.e., National Pension, *kokumin nenkin*), covering everyone, including the self-employed and dependents of the insurant of the Employee Pension. Both the contributions and benefits of the National Pension are defined. The second tier is the Employee Pension (*kōsei nenkin hoken*), covering employees in private companies, civil servants, and private school staffs. The contribution is shared by employees and employers, and the benefit depends on the contribution and average earnings. The third tier is the private pension schemes established by firms. These schemes vary from defined contribution and defined benefits.

Similarly, there are three types of health insurance in Japan. The first type is the Employee Healthcare Insurance (*hiyōsha hoken*). There are three different employee healthcare insurance schemes: Society-Managed Health Insurance (*kenkō hoken kumiai*) for

large companies; insurance managed by the Japan Health Insurance Association (*kyō kai kenho*) for small companies; Mutual Aid Association (*kyōsai kumiai*) for civil servants and staffs in private schools. The second type of healthcare insurance is the Late-Stage Elderly Healthcare System (*kōki kōreisha iryō seido*), which is designed for the elderly aged over 75. The third type is National Health Insurance (*kokumin kenkō hoken*), which covers the rest of the population. The Japanese healthcare system is characterised by universal coverage, free choice of patients, and the social insurance principle.

Japan was the only non-Western welfare state included in Esping-Andersen's typology. One trend of criticism of his typology argued that he misclassified Japan (see Chapters 2 and 3 for further discussion). As Section 2.3 discusses, Esping-Andersen (1990, 1997) did not provide a definitive classification for Japan but later placed it within the conservative welfare regime (Esping-Andersen, 1999). However, this classification remained contested. In particular, some scholars emphasised the distinctive characteristics of East Asian welfare systems and Japan's welfare state (see Chapter 3 for more details). Over the past decades, Japan has been classified in multiple ways: as a liberal welfare regime, a conservative welfare regime, a member of the East Asian welfare model, a hybrid, or a unique welfare state (see Powell, Kim, & Kim, 2020). Despite extensive scholarly debate, the classification of Japan's welfare state remained unresolved.

Japan has not received as much attention in healthcare typology discussions as it has in welfare regime debates. It was typically classified as a Bismarckian healthcare system, sharing similarities with Germany. Bridging both strands of literature, income maintenance and healthcare policies in Japan appeared relatively consistent, as both exhibited conservative or Bismarckian characteristics (e.g., segmented schemes for different occupations in order to maintain status).

1.4 Research Objectives and Research Questions

Given the large volume of existing research, the first research objective of this thesis is to examine various typologies of welfare regimes and healthcare systems, with a particular focus on their classifications of Japan. This is achieved through a narrative literature review, which lays solid foundations for the following empirical analysis. The second objective is to provide the latest classification of the Japanese welfare state and healthcare system. Under this research objective, three research questions are developed for this thesis (see Section 7.2 for more information and relevant hypotheses):

- RQ1: To what extent can the Japanese welfare state be classified with other advanced welfare states based on the latest data?
- RQ2: To what extent can the Japanese healthcare system be classified with other advanced healthcare systems based on the latest data?
- RQ3: Is there an elective affinity between the welfare state and the healthcare system in Japan?

To answer these research questions, the first step is to construct a relatively unified framework for classifying welfare systems and healthcare systems in advanced economies. Based on this framework, a second step is to construct a dataset comprising the latest indicators of 18 OECD countries analysed by Esping-Andersen (1990) and East Asian welfare systems. The third step conducts cluster analysis using this dataset to determine Japan's classification and membership. Once the classification results for Japan's welfare state and healthcare system are obtained, the final step examines the consistency between welfare regimes and healthcare systems.

1.5 The Organisation of the Thesis

Regarding the first research objective, Chapters 2, 3, and 4 serve as a literature review aimed at identifying research gaps. Chapter 2 focuses on Esping-Andersen's classification of three types of welfare regimes and his classification of Japan. Inspired by Esping-Andersen's

(1990) framework, other scholars (mainly based in the West) have developed various welfare state classifications by replicating or modifying the three worlds typology. While these classifications did not typically focus on Japan, they are included in Chapter 2 to illustrate how the Japanese welfare state has been classified in previous literature. One common criticism of Esping-Andersen's framework is the misclassification of Japan, which should be understood in the East Asian context. Therefore, Chapter 3 shifts the focus to East Asia, examining how the Japanese welfare state has been classified within the East Asian welfare model. Alternative explanations (i.e., those that did not rely on either the three worlds framework or the East Asian welfare model) offered by East Asian scholars and experts in Japanese studies are also explored in Chapter 3. Since Esping-Andersen (1990) primarily considered cash benefits and largely ignored the service sector, Chapter 4 turns to healthcare system typologies, which adopt a different perspective from welfare state typologies. Although Japan was not typically considered an exceptional case in healthcare system classifications, Chapter 4 analyses how the Japanese healthcare system was categorised within various healthcare system typologies.

As a transition, Chapter 5 attempts to review the two important theoretical issues in the welfare/healthcare modelling business. The first issue to be discussed is the difference between ideal typical approaches and real typical approaches in classifying welfare regimes or healthcare systems. The second issue to be explored in Chapter 5 is the concept of elective affinity, which can be used to combine typologies of welfare regimes and healthcare systems.

Chapters 6, 7, and 8 are devoted to methodological issues. In order to achieve the research objectives mentioned in Section 1.4, Chapter 6 designs a unified framework that can facilitate the comparison between welfare systems and healthcare systems. To construct this framework, case selection and concept (or variable) selection are two major issues in Chapter 6. Chapter 7 highlights the knowledge gap and develops research questions for this thesis.

Chapter 7 also reviews relevant methods to justify the choice of cluster analysis to answer the research questions. Chapter 8 moves to operationalisation and constructs the data for the following analysis, following the framework identified in Chapter 6.

Chapters 9 and 10 are empirical chapters. Chapter 9 first demonstrates the necessary preparation and relevant algorithms for conducting the cluster analysis. Then, Chapter 9 reports the results from both hierarchical cluster analysis and fuzzy cluster analysis for welfare systems and healthcare systems in selected cases. Chapter 10 aims to interpret the results from Chapter 9 to answer the research questions set in Chapter 7. Chapter 11 is a conclusion chapter summarising the findings and discussing the future research.

Chapter 2 Japan in the Three Worlds Typologies

Although Esping-Andersen (1990) triggered numerous academic studies in classifying the welfare states around the world, the puzzle of classifying the Japanese welfare state remained unsolved in Esping-Andersen's influential typology. There was a surge of literature discussing the classification of welfare states. As a part of the welfare modelling business, the debate about how to classify the Japanese welfare state was also heavily influenced by Esping-Andersen's (1990) classification. In order to examine the classification of the Japanese welfare state, it is necessary to review Esping-Andersen's welfare regime typology. Section 2.1 starts with the welfare modelling before Esping-Andersen's (1990). Section 2.2 examines Esping-Andersen's theory. Section 2.3 demonstrates how Esping-Andersen and other scholars classified Japan. At the end, Section 2.4 summarises by pointing out the limitations that are relevant to this thesis.

2.1 Typologies Before the Three Worlds

One of the earliest attempts to classify social welfare provision was Wilensky and Lebeaux's (1958) study. Based on coverage, they found two conceptions of welfare provision: the residual and the institutional. The former viewed the welfare state as a supplement to the market and the family, and the welfare state functioned when natural structures of welfare provision (i.e., the market and the family) broke down. In contrast, the latter signified that the welfare state aimed at achieving individual self-fulfilment without stigma, emergency, and abnormalcy (pp. 138-140). Wilensky and Lebeaux (1958) also analysed the development of the American welfare state and emphasised industrialisation as the key explanatory factor in its development. The underlying logic of Wilensky and Lebeaux's (1958) classification was industrialisation: residual and institutional welfare states represented two ends, and the residual welfare state will eventually develop into the institutional form with the process of modernisation (Abrahamson, 1999, p. 396).

Another typology was provided by Richard Titmuss. He challenged the use of the abstract term “welfare state” and developed three types of welfare: social welfare, fiscal welfare, and occupational welfare (Titmuss, 1976, pp. 224-225). Social welfare referred to social services aimed at relieving dependencies caused by social risks; financed by tax, fiscal welfare was direct cash payments for specific dependencies, while occupational (employee) welfare related to individual professional status (pp. 42-53). This division focused more on modes of welfare provision within a certain country. Titmuss (1974) suggested three models of social policy: residual, industrial achievement-performance, and institutional redistributive. Similarly, in the residual welfare model, the welfare state came into play temporarily when the family and the private market do not function appropriately, while the welfare state provided universal and comprehensive services in the institutional redistributive model. In addition, in the industrial achievement-performance model, social needs were based on work performance and productivity (pp. 30-31). The residual and institutional models resembled Wilensky and Lebeaux’s (1958) version. However, Titmuss (1974) emphasised the different factors (e.g., economic, political, demographic, ideological, and cultural) shaping the welfare state (Abrahamson, 1999, pp. 397-398).

Furniss and Tilton (1977) perceived the welfare state as the government’s intervention in the operation of the market (p. 14). Similar to Wilensky and Lebeaux (1958), the criterion of Furniss and Tilton (1977) was coverage. They also classified welfare states into three groups: corresponding to Titmuss’s “residual welfare model”, the positive state focusing on the cooperation of government and business to promote its economic growth; the social security state with a guaranteed national minimum; the social welfare state seeking to promote solidarity and general equality of living conditions (pp. 15-20). The United States was considered a positive state because the American welfare state did not commit to a minimum guarantee of living (p. 179). The United Kingdom was a social security state where

the Beveridge Plan established a safety net for everyone (p. 105). With a high level of living standard, more equal income distribution, absence of primary poverty, and community planning improving quality of life, Sweden was categorised as a social welfare state going further than a guaranteed minimum (p. 124). The focus of Furniss and Tilton's work was the provision of welfare. They argued that the positive state could not be counted as a welfare state because it did not provide a basic safety net for all citizens, which was an elemental function of a welfare state (p. 16). After examining the British welfare state, they concluded that the social security state was "far from satisfactory" and unable to fulfil the needs of the majority (p. 121). Based on the case of the American welfare state, they were in favour of the social welfare state and claimed that social policies in America should be reformed following a social democratic path instead of continuing the government-corporate collaboration mode and minimalist full employment policy (p. 204).

Table 2.1 below shows the main features of these early attempts to classify welfare states. In general, their classifications of Western welfare states were similar: the residual model had a low level of coverage and only provided a safety net, while the institutional model was in favour of universal, generous, and comprehensive welfare provision.

Nevertheless, the principles behind their theories were different. On the one hand, Wilensky and Lebeaux (1958) and Furniss and Tilton (1977) implied a convergence toward a universal and comprehensive welfare state: the former regarded modernisation and industrialisation as impetuses for welfare state development; the latter suggested a series of social democratic principles for welfare state reforms. Later, Wilensky (1975) provided a more sophisticated explanation of the convergence theory with an empirical analysis of sixty countries. He argued that "economic growth and its demographic and bureaucratic outcomes were the root cause of the general emergence of the welfare state" (p. xiii). He found strong relationships between population ageing, the age of social security systems, and social expenditure, while

political arrangements played minor roles in welfare efforts (p. 27). Therefore, he argued that economic growth was the root of welfare state development, but it functioned via demographic changes and the establishment of social security systems. Industrialisation and modernisation caused a declining birth rate and population ageing, which contributed to welfare spending. In addition, the augmentation of social expenditure could also be attributed to maturing social security programmes moving toward higher levels of benefits and wider coverage expenditure (p. 47). On the other hand, Titmuss (1974) paid more attention to the differences among welfare states and did not assume an ultimate goal of welfare state development. Titmuss (1987) argued that behind the development of distinctive social policies based on differentiated principles and groups, economic and political factors played powerful roles (p. 53). Both Wilensky and Lebeaux (1958) and Titmuss (1974) attempted to categorise welfare provision, but their studies did not provide a detailed picture of various welfare regimes. Wilensky and Lebeaux (1958) focused exclusively on American social policy, and Titmuss (1974) was mainly based on the UK without sophisticated comparative analysis. Although Furniss and Tilton (1977) involved case studies, none of them presented sufficient empirical evidence and comparative analyses to support their typologies. Only a few welfare states were investigated, and non-Western countries (e.g., Japan) were absent in their works. Nevertheless, these early versions of welfare state typologies, especially Titmuss's classification, have influenced Esping-Andersen's thoughts, which are discussed in Section 2.2.

Table 2.1: Pre-Esping-Andersen Welfare State Typologies		
	Typologies	Logic
Wilensky and Lebeaux (1958)	Residual Institutional	Convergence (Modernisation)
Titmuss (1974)	Residual Industrial achievement-performance Institutional redistributive	Divergence
Furniss and Tilton (1977)	Positive state Social security state Social welfare state	Convergence (Social democratic principles)

2.2 Three Worlds of Welfare Capitalism

Esping-Andersen's (1990) welfare regime approach can be regarded as a milestone in the welfare modelling business, which deserves a section to examine this path-breaking classification. Section 2.2.1 begins with the theoretical basis of this canon in comparative welfare state studies. Then, Section 2.2.2 examines his classification of advanced welfare states into liberal, conservative, and social democratic welfare regimes. After that, Section 2.2.3 shifts its focus to criticisms of Esping-Andersen. Finally, Esping-Andersen's later work, *Social Foundations of Post-industrial Economies*, in which he adopted a new path and responded to some criticisms, is examined in Section 2.2.4.

2.1.1 Theoretical Bases

There were several core theoretical concepts in Esping-Andersen's framework: three different models for welfare states from Titmuss (see Section 2.1), social citizenship from T. H. Marshall, and commodification from the Marxist tradition and Karl Polanyi. In addition to these three concepts, the concept of power resources was the explanatory factor for three forms of welfare states (e.g., Korpi, 1980, 1983, 1998). As Esping-Andersen (1990) himself has pointed out, Titmuss's contribution to classifying welfare provision shifted the research focus from social expenditure to the contents of welfare policies and comparisons between categorically different types of welfare states (p. 20). Esping-Andersen also advocated

divergence logic when categorising welfare states. Esping-Andersen rejected “simple linear rankings” of welfare states according to their social expenditure, which in fact was based on convergence logic. Furthermore, the classification of liberal, conservative, and social democratic welfare regimes suggested by Esping-Andersen (1990) corresponds to residual, industrial achievement-performance-based, and institutional redistributive welfare states in Titmuss’s (1974) typology (see Section 2.1 for more details).

In Esping-Andersen (1990), the concept of social citizenship could be dated back to Marshall, who divided citizenship into three parts: civil, political, and social. These forms of citizenship were interwoven but developed sequentially. Civil citizenship, comprising individual rights, expanded in the eighteenth century. When civil rights became universal, citizenship evolved to the national level and granted citizens political rights in the nineteenth century. Once political citizenship was institutionally guaranteed, social citizenship emerged in the twentieth century (Marshall, 1963, pp. 76-85). Social citizenship referred to the right from a basic level of economic welfare and security to live in a civilised way according to prevailing standards in society (p. 74). Industrialisation in the twentieth century has expanded the scope of social citizenship to the modification of social inequality (p. 28). Marshall argued that citizenship, aiming at achieving equality, was bestowed on all full members of the community, whilst, in contrast, social class was a system of inequality (p. 18). Both citizenship and social class were based on ideas and values, which resulted in constant conflicts between them. From Marshall’s (1963) perspective, the expansion of the welfare state signified the growth of social citizenship. Esping-Andersen incorporated Marshall’s citizenship as one of the theoretical bases of his analysis of welfare regimes. He took a similar stance as Marshall and claimed that “few can disagree with T. H. Marshall’s (1950) proposition that social citizenship constitutes the core idea of a welfare state. It must involve the granting of social rights” (Esping-Andersen, 1990, p. 21). He further argued that social

rights necessitate decommodification, but social rights also include stratification (p. 21). In Esping-Andersen's analysis, the expansion of welfare states in Europe should be attributed to the enlargement of social citizenship and social rights.

Commodification was one of the central concepts in the Marxist tradition. For Marx, workers without being employed could not survive in a capitalist society. Hence, dehumanised and alienated by the labour market, they were no longer masters of themselves. In order to change this situation, Marx argued that a new social system that could satisfy individual needs without alienation and commodification should replace capitalist institutions with violent revolution. Esping-Andersen accepted the analysis of commodification but argued that the establishment of a de-commodified system could be achieved by the welfare state (Room, 2000, pp. 332-333). Polanyi (1944/2001) argued that labour was essentially not a commodity, but the market commodified labour. Polanyi criticised the market mechanism for disposing of the labour power, which brought negative influences on men as moral, psychological, and physical entities. Human beings suffered from social exposure and social dislocation resulting from commodification (pp. 75-76). Following Polanyi's critique of the market economy, Esping-Andersen (1990) added that people were easily destroyed by social risks as commodities. Hence, decommodification was necessary to maintain the system by securing a minimum of individual welfare and workers' collective actions (p. 37).

In addition, although Esping-Andersen (1990) has not explained power resources theory, he explicitly applied power resources theory to analyse welfare states. Before developing the three types of welfare regimes in 1990, Esping-Andersen (1985a; 1985b) applied the power resources theory to analyse how the distribution of power resources has shaped the development of social democracy and welfare policies in Scandinavian countries. O'Connor and Olsen (1998) considered Esping-Andersen and Korpi as two pioneers of power resources theory (p. 3). Korpi (1983) defined power resources as "which provide actors –

individuals or collectivities – with the ability to punish or reward other actors” (p. 15).

According to Korpi (1998), the power resources theory focused on the allocation of power resources among different social classes, and the change in the distribution of power resources was important and essential for social change (p. 59). Prior to the power resources theory, structural functionalism and pluralist theory were two mainstream schools explaining the growth of the welfare state (O’Connor & Olsen, 1998, p. 4). The former argued that economic and demographic factors can explain the origin and development of welfare programmes. The structural-functionalist theory emphasised the logic of industrialisation and modernisation behind the welfare state, while political factors play a marginal role. In contrast, pluralism paid attention to the role of various actors. Social policy was considered a response to the lobbies organised by different actors. The power resources theory rejected the pluralist claim that most power is concentrated in the hands of capitalists. Rather, it argued that the power balance between labour and capital was dynamic and variable. Power resources theorists also opposed functionalism. They recognised that economic conditions were necessary for the development of the welfare state, but economic factors were insufficient to explain the variation and differences of welfare states (O’Connor & Olsen, 1998, pp. 4-7).

Before constructing his typology, Esping-Andersen (1990) reviewed existing theoretical frameworks to justify his approach. The system and structuralist theories emphasised similarities of different welfare states, as they intended to interpret the welfare state as a consequence of political-economic reproduction, but functionalist theories were unable to account for the high proportion of welfare expenditure and welfare states in Eastern Europe (Esping-Andersen, 1990, p. 13). The institutionalist approach focused on the influence of democracy on the development of welfare states, but the institutionalist explanation faced empirical problems (pp. 14-15). An implication of the power resources

theory was historical institutionalism and path dependence. Esping-Andersen (1990) held the view that the variation of welfare states could be explained by past reforms and patterns of political formation and political coalition (p. 29). Furthermore, the welfare state itself was the product of power resources reinforcing collective mobilisation (p. 16).

2.2.2 Liberal, Conservative, and Social Democratic Welfare Regimes

Esping-Andersen (1990) argued that previous theoretical models of the welfare state were insufficient, and comparative empirical analysis was the only approach to categorising welfare states (pp. 2-3). He stated that the findings of prior comparative research were implausible because of a lack of welfare states for comparison, which resulted in a shortage of variables that could be tested at the same time. He also rejected the assumption that social expenditure was an adequate reflection of the welfare state in early comparative studies because expenditure was merely a peripheral element of the welfare state. The social expenditure approach usually treated all spending equally and therefore could not reveal commitments to welfare (p. 19). In the analysis, Esping-Andersen (1990, 1999) preferred the term “welfare regime”, which could capture the complex interaction between the state and other welfare providers (see Section 1.1.1).

Following Marshall’s conception of social citizenship as a right and entitlement and Polanyi’s criticism of commodification, Esping-Andersen (1990) proposed decommodification and stratification as criteria. As the market became dominant, workers’ welfare was completely decided by the labour contract and cash nexus. People were commodified in the capitalist society, and the aim of social policy was to reduce this commodified status (p. 21). Decommodification measured the extent to which individuals live without relying on the market (pp. 21-22). He proposed three dimensions to operationalise decommodification: eligibility, income replacement, and protection against social risks (p. 47). He used old-age pensions and sickness and unemployment benefits as two

indicators of decommodification (p. 54). Then, he calculated the score of decommodification in eighteen advanced industrialised economies and found that these countries could be classified into three groups according to the decommodification score: Continental European countries (e.g., Germany and France) with strong conservative and Catholic traditions developed a medium level of decommodification; Scandinavian countries such as Sweden and Norway, replaced the liberalism with social democracy and highly de-commodifying welfare provision; the level of decommodification was modest in Anglo-Saxon countries (e.g., Australia and the US) where liberalism persisted (pp. 52-54).

Esping-Andersen found that the relationships between social citizenship and social class remained unclear in Marshall's work (p. 23). Esping-Andersen argued that the welfare state was a system of stratification exerting influence on social relations (p. 55). Stratification reflected the welfare state's effects on social status. He measured liberal, conservative, and social democratic principles of stratification: the conservative model was characterised by corporatism representing differential and segmentation of the social insurance system, and etatism exemplified by the privilege enjoyed by civil servants; liberalism was featured by the means-tested benefits and private sectors in pension, while socialist principles included universalism and equality (pp. 69-73). After calculating the scores of eighteen countries, he found that Continental European countries had high scores on conservative indices and low scores on liberal and socialist indices, Anglo-Saxon countries scored high on liberal indices but low on conservative and socialist indices, and Nordic countries had high levels of socialism and low level on two others (pp. 74-76).

Combining decommodification and stratification, Esping-Andersen found coincidences in decommodification and stratification clusters (p. 77). He identified three clusters of welfare regimes: liberal, conservative, and social democratic. Liberal welfare regimes mainly relied on strict means-tested assistance and limited levels of social benefit,

which resulted in minimising decommodification and dualism between minor state welfare recipients and the majority differentiated by the market. America, Canada, and Australia were examples of liberal welfare regimes. Conservative welfare regimes were strongly influenced by the corporatist-statist legacy. As a result, with the aim of preserving status differentials and traditional familial relationships, the entitlement to welfare was closely attached to status. Hence, conservative welfare regimes usually had a high level of stratification and an intermediate level of decommodification. Germany, France, and Italy were classified into the conservative welfare regime cluster. Social democratic welfare regimes were based on the principles of universalism and citizenship. All citizens were included in a universal scheme with generous benefits. Therefore, the social democratic welfare regimes maximised decommodification and de-stratification. Social democratic models could be found in Nordic countries, where the dominant force of social reforms was social democracy (pp. 26-28).

Apart from decommodification and stratification, Esping-Andersen also pointed out that it was necessary to consider the welfare mix between the state, the market, and the family (p. 21). In liberal welfare regimes, the state encouraged the market in welfare provision by offering low levels of public welfare benefits and subsidising private welfare provision. In conservative welfare regimes, the state only functioned when the family failed. Social democratic welfare regimes minimised the role of the market and the family (pp. 26-28). He applied the public-private mix to analyse pension systems in advanced economies. In accordance with welfare regimes, he classified pension provision into three modes: corporative insurance systems with an emphasis on status plus a marginal role of the market, residualist systems maximising the market, and universalist systems diminishing both the market and the status (pp. 85-86). Nonetheless, Esping-Andersen's (1990) analysis was limited to the public-private aspect, and the role of the family was not covered. His analysis exclusively concentrated on pension systems, while the welfare mix in other policy domains

remained unclear.

2.2.3 Criticisms of the Three Worlds

Compared to previous research, Esping-Andersen's framework was sophisticated and empirical-theoretical, and his welfare regime approach not only was able to explain the persisting divergence of welfare states but also constructed three ideal typical welfare regimes with systematic empirical evidence (Arts & Gelissen, 2010, pp. 571-572). Manow (2021) wrote that Esping-Andersen not only changed the focus of welfare state research from social expenditure to institutional and social output factors but also provided an insight into systemic variations of established welfare states (p. 787). Daly (1994) stated that Esping-Andersen's framework was useful because it not only identified key characteristics of the welfare state at a macro level but also provided helpful quantitative indicators to measure these qualitative elements (p. 106). However, his analysis has elicited some criticisms. These criticisms were from three perspectives: methodological, empirical, and theoretical (see Bambra, 2006, 2007b; Powell & Barrientos, 2011, pp. 70-71).

In terms of methodology, critics concentrated on the usage of the decommodification index (Bambra, 2007b, p. 1100). Over-reliance on averaging simplifies original data. The arbitrary use of cut-off points led to problematic classifications of some cases (e.g., the UK). The a priori theoretical assumption included in Esping-Andersen's classification ruled out the possibility of a fourth or more welfare regimes. The justification for weighting indicators of decommodification provided by Esping-Andersen was insufficient (Bambra, 2006, pp. 74-77). Bambra also mentioned some miscalculations of the decommodification index, which led to the misclassification of some borderline countries, such as the UK and Japan (p. 77). Kangas (1994) reinforced that Esping-Andersen's analysis could be interpreted subjectively and causally (p. 348). These methodological issues undermined the empirical support of Esping-Andersen's classification and resulted in the misclassification of some cases.

The core concern of empirical and statistical critics was the empirical robustness of Esping-Andersen's typology. A number of recent studies replicating Esping-Andersen's method reached different results from the original framework. For example, Kangas (1994) conducted a cluster analysis of decommodification in 15 countries and found that a distinct liberal cluster could not be clearly identified. Bambra (2006) challenged the robustness of the decommodification index after conducting research using data in 1998/1999. Scruggs and Allan's (2006) investigation of decommodification found limited evidence supporting Esping-Andersen's (1990) classification. They also reproduced the calculation of stratification and reached a similar conclusion that there were many misclassified countries and little empirical evidence for Esping-Andersen's (1990) classification (Scruggs & Allan, 2008). Other researchers also attempted to review these individual studies with Esping-Andersen's classification. Arcanjo (2006) selected 13 empirical studies examining welfare regime clusters and found their conclusions inconclusive (pp. 28-30). Bambra (2007b) reviewed 12 typologies and pointed out that the misclassification of some countries resulted from miscalculations and outdated data (p. 1101). Art and Gelissen (2010) summarised 11 studies testing Esping-Andersen's typology and concluded that Esping-Andersen's classification was heuristic, but no pure case could be identified (pp. 575-577) (see also relevant discussion in Section 5.1). Ferragina and Seeleib-Kaiser (2011) analysed 23 studies and found that Esping-Andersen's classification was overall valid, with some cases showing medium or medium-high consistencies. Powell, Yörük, and Bargu (2020) examined 21 studies and ended with the conclusion that there was less consensus on classifications than in previous reviews. From what has been mentioned, scholars have not reached an agreement on the empirical robustness of Esping-Andersen's typology. These diverse results of testing Esping-Andersen's three worlds could be attributed to case selection and different perspectives of criteria selection: Ebbinghaus (2012) pointed out that there was a

considerable difference in terms of case selection and methodology after reviewing thirteen meta-analyses and 11 studies in Art and Gelissen (2010). Similarly, Kim (2015) also analysed 33 typologies to address the importance of case selection, which is elaborated in more detail in Section 6.1.

The third group of criticisms focused on theoretical aspects of Esping-Andersen's welfare regime. Theoretical criticisms of Esping-Andersen's model largely focused on gender perspectives, the usefulness of the concept of the welfare regime, the role of enterprises, and the range of welfare states (see Art & Gelissen, 2010). A common feature shared by the feminist criticisms was that they argued that Esping-Andersen's framework was based on "male breadwinner", which incorporated male bias in welfare policy and ignored the role of the family (see Bussemaker & van Kersbergen, 1994; Daly, 1994; Kilkey & Bradshaw, 1999; Lewis, 1992; Orloff, 1993; Sainsbury, 1996). Feminists' attempts to involve gender in the welfare regime analysis fell into one of three categories: gendering Esping-Andersen's welfare regimes; emphasising welfare models that also include gender aspects; and creating more gender-focused welfare system typologies (Bambra, 2007a, p. 326; Sainsbury, 1999, p. 2). For instance, Orloff (1993) proposed to expand the state-market relationship to the state-market-family relationship and to include gender elements in terms of de-commodification and stratification. Gornick and Jacobs (1998) found that the effects of public employment on gender differences in income corresponded to Esping-Andersen's three worlds. Lewis (1992) suggested a typology based on the male-breadwinner model. One important concept mentioned by feminist scholars was defamilialisation. Lister (1994) defined defamilialisation as "the degree to which individual adults can uphold a socially acceptable standard of living, independently of family relationships" (p. 37). McLaughlin and Glendinning also proposed the same term, but they defined it as "provisions and practices which vary the extent to which well-being is dependent on 'our' relation to the (patriarchal) family" (McLaughlin &

Glendinning, 1994, as cited in Lohmann & Zagel, 2015, p. 50). These feminist critiques emphasised the gender perspective of the welfare state, but gender-focused typologies only covered gender indicators and other areas of the welfare state were neglected, while incorporating gender into mainstream welfare regime typologies might inherit shortcomings as well (Sainsbury, 1999, p. 2). The feminist discussion on defamilialisation also did not pay enough attention to non-Western cases, especially East Asian, which were influenced by Confucian familism (see Section 3.1).

On the other hand, Kasza (2002) argued that the welfare regime approach was based on a false assumption that welfare policies were consistent and coherent in most countries (pp. 283-284). Social policy was cumulative and incremental, which meant that policymakers usually modified policies according to new circumstances rather than completely abolishing old policies. In the process of welfare state development, policies were changed or reformed by different governments. Hence, social policies that we could see today were a historical reflection of reality, and they did not imply a set of consistent values or principles (p. 273). Kasza (2002) also analysed the start year of different social policies in several countries. He found that welfare policies were diversified in terms of time (pp. 274-277). Furthermore, actors also vary in different policy areas. Most countries did not have a unified administrative department in charge of health policy, pensions, unemployment, and family benefits (p. 277). Various non-governmental groups also engaged in different policy sectors (see Section 5.2.5 for more discussion). As a consequence, it was unlikely that the changes in different social policies were based on the same principle in one country. In addition to Kasza's (2002) critique of the welfare regime approach, other scholars also challenged the usefulness of classifying welfare states. For instance, Baldwin (1996) added that the typology of welfare states was outdated, meaningless, and irrelevant to the study of social policy (p. 41).

A third theoretical criticism came from the VoC theory, which emphasised the roles of

employers in social policy. Hall and Soskice (2001) argued that advanced countries could be divided into liberal market economies (LMEs) and coordinated market economies (CMEs). In LMEs, coordination between firms relied on market relationships, while non-market relationships were more significant for companies to coordinate with other actors in CMEs (p. 8). There were institutional complementarities between welfare policies and the modes of regulating the economy, which could reinforce each other to enhance the competitiveness of the economy. LMEs were in favour of liberal welfare policies, reinforcing a fluid labour market and encouraging individuals to develop general skills, while CMEs were usually accompanied by conservative and social democratic welfare regimes, which could protect vulnerable labour by focusing on industry-specific and firm-specific skills (pp. 50-51).

Though the focus of VoC was the production and the role of firms in economies rather than the decommodification stimulated by the political mobilisation of the working class (i.e., power resources theory), some authors have attempted to combine VoC and welfare regime (e.g., Ebbinghaus & Manow, 2001). Estévez-Abe et al. (2001) rejected the use of “decommodification”. They argued that welfare policy should be regarded as a strength of the employers because social policy reinforces the individual’s dependence on a certain firm as well as the social risk (pp. 180-181). Schröder (2013) developed a unified typology by combining VoC and Esping-Andersen’s typology. He divided capitalist countries into three clusters: liberal, conservatively coordinated, and social democratically coordinated (p. 62).

The unified classification magnified the complement between the welfare state and production regulations, and therefore, it was able to reinforce the explanatory power of both the welfare regime and VoC (pp. 162-163). Nonetheless, it should be noted that the combination inherited the shortcomings of both approaches (e.g., the number of cases). The unified typology offered a new perspective on the welfare regime, but it was insufficient to explain some hybrid cases. For example, Japan was regarded as a conservatively coordinated

economy, but the liberal elements of Japan remained undeveloped in the combined typology.

In addition to the criticisms mentioned above, Esping-Andersen's (1990) classification was neither exclusive nor exhaustive (Arts & Gelissen, 2010, p. 573). On the one hand, many scholars have argued that Esping-Andersen misclassified some welfare states. As Esping-Andersen (1996a) himself noted, Britain was a welfare state pioneer but also the only noteworthy case of radical welfare reform (p. ix). Esping-Andersen (1990) did not address the transformation of the British welfare state. Castles and Mitchell (1991) maintained that Australia was not a liberal and residual welfare state, while it belonged to a radical group of welfare states, whose redistributive effects were achieved by instruments instead of social expenditure. Ferrera (1996) argued that a Southern European welfare model should be created to include Italy, which was considered a conservative welfare regime by Esping-Andersen (1990). Similarly, Leibfried (1993) suggested a Latin Rim regime including Southern European welfare states. The Netherlands was also regarded as a problematic case (Goodin & Smitsman, 2000).

On the other hand, from the perspective of case selection (see Section 6.1), Esping-Andersen (1990) only covered 18 advanced welfare states, and other countries were largely omitted in his analysis. Intellectual efforts have been invested to expand the classification of welfare states to emerging economies in Latin America (e.g., Franzoni, 2008; Pribble, 2011), Southeast Asia (e.g., Yuda, 2020), Eastern Europe (e.g., Cerami, 2006; Fenger, 2007; Orosz, 2019), and Africa (e.g., Mkandawire, 2020). Moreover, a welfare typology including developing countries (i.e., global welfare regimes) is proposed. Industrialised countries were classified into welfare state regimes, and other countries were grouped into either informal security regimes or insecurity regimes (e.g., Abu Sharkh & Gough, 2010; Wood & Gough, 2006).

Among these modifications and expansions of welfare regime typologies, East Asia

was one of the most controversial areas. Japan was the only non-Western country included in Esping-Andersen's original framework, but the classification of the Japanese welfare state remained very controversial (i.e., the misclassification of Japan). Furthermore, many East Asian welfare systems, especially those achieving great success in economic development, were largely ignored. Chapter 3 reviews welfare state literature focusing on Japan and East Asia.

2.2.4 Esping-Andersen's New Approach

Esping-Andersen (1999) recognised that decommodification was only relevant to individual and wage relationships, while many females remained "pre-commodified". His original framework too narrowly focused on income maintenance programmes, the relationship between the state and the market, and the male breadwinner. In order to respond to feminist critics, he added defamilialisation as another criterion to capture the degree to which welfare states could reduce individuals' dependence on family (pp. 44-46). However, unlike other feminist scholars emphasising the economic and social independence of women, Esping-Andersen (1999) understood defamilialisation from the perspective of labour market participation. Here, the emphasis of defamilialisation was to reduce females' family responsibilities, preventing women from entering the labour market. Defamilialisation was a precondition of decommodification (p. 51). He stated that households had major responsibilities for welfare provision in a familialistic welfare state, while a defamilialised welfare state minimised individual reliance on the family (p. 51). He used family service expenditure, subsidies to families, provision of public childcare, and care for the aged as four indicators to measure defamilialisation of welfare states. Scandinavian countries were the only distinct cluster with notable defamilialising effects (p. 61). Taking defamilialisation into consideration, Esping-Andersen argued that empirical examination of defamilialisation supported his classification of three types of welfare regimes rather than disconfirming its

validity (p. 46). He updated his threefold division: in liberal welfare regimes, the market and individual played central roles; in social democratic welfare regimes, the locus was the state and universalism; the family was central with subsidy from the state in conservative welfare regimes characterised by kinship, corporatism, and etatism (p. 85).

In addition to the concept of defamilialisation, Esping-Andersen (1999) adopted a different approach from his previous framework: he argued that the basis of welfare regimes was risk management (p. 36). He identified three types of social risks: class risks, life-course risks, and intergenerational risks. Class risks were unequally distributed across different social classes. High-risk strata were usually unable to obtain protection from the family and the market. Life-course risks were distributed across the individual life course. Children and the elderly were more vulnerable to poverty because of the lack of earnings. Intergenerational risks resulted from the inheritance of class risks and life-course risks in some inferior groups in society (pp. 40-42). The aim of social policy was to absorb social risks.

Decommodification denoted that the state took the risks out of the market, while defamilialisation signified the state's risk absorption from the family. According to the role of the state in risk management, three approaches correspond to the three types of welfare regimes: residual, corporative, and institutional. The residual approach, characterised by means-tested and meagre programmes, only provided aid to limited high-risk strata. Influenced by the traditions and history of collective mobilisation, the corporative approach was based on membership. The institutional approach, which was rooted in the idea that risk was universal and should be shared universally, absorbed all risks comprehensively (pp. 40-41).

Compared to his previous classification in 1990, Esping-Andersen (1999) paid more attention to the welfare mix, particularly the role of the family. He considered that the state, the market, and the family were three sources of managing social risks (p. 33). Welfare

regimes should be understood from the perspective of “the inter-causal triad of state, market, and family” (p. 35). These three actors were governed by different principles: the redistribution of the state was authoritative; the distribution by market mechanism was based on cash nexus; the dominant principle of allocation within the family was reciprocity. He rejected the assumption that the state, the market, and the family were functional equivalents and mutually replaceable because it was likely that the market and the family failed to absorb the social risks (pp. 35-36).

Although facing challenges from alternative welfare models, Esping-Andersen maintained that his typology was robust and adequate, and additional models could impair the explanatory power of the welfare regime approach (p. 94). However, his new approach was not free from criticism. Kröger (2011) stated that the concept of defamilialisation implied both economic independence from the family and social independence from familial relationships, which led to confusion (p. 429). Saxonberg (2013) added that the concept of defamilialisation was vague because one could interpret that de-familialised policies encouraged parents to send their children to formal childcare facilities as soon as possible, and defamilialisation would lead to the ambivalent explanation of paternal leave (pp. 28-29). In addition, although Esping-Andersen’s new approach incorporated family, the welfare provision of societal actors (e.g., non-profit institutions) was not considered (Osawa, 2011; cf. welfare triangle and welfare diamond).

2.3 Japan in the Three Worlds

Japan was the only non-Western case included in Esping-Andersen’s (1990) original three worlds. Nonetheless, his classification on Japan remained confusing. There were only limited explanations on how he classified the Japanese welfare state. In terms of decommodification, Japan was located in a middle position and classified into the cluster of conservative welfare regimes (Esping-Andersen, 1990, p. 51). Regarding stratification, Japan

denoted a strong degree of liberalism, a medium level of conservatism, and a low level of socialism (p. 74). As for the public-private mix in pension, Japan with Continental European countries, was placed in the group of corporative state-dominated insurance systems, in which status was an important element, social security was segregated and occupational, and the market only played a marginal role (p. 86). Esping-Andersen (1990) did not state clearly that Japan belonged to the conservative cluster of welfare regimes, but given the placement of Japan in his theory, it was reasonable to argue that Esping-Andersen (1990) tended to consider Japan as a hybrid of the liberal and conservative welfare regimes. Nonetheless, Esping-Andersen (1996b) considered East Asian welfare systems as a group that was “paradoxically both globally unique and a hybrid of existing welfare state characteristics” (p. 21). East Asian welfare systems were similar to the Continental European regime, emphasising the role of the family and minimising the provision of public services. These immature and segmented welfare systems were unable to provide sufficient social protection, which resulted in the rise of residualism, assuming that private occupational welfare plans covered the male breadwinner (p. 21).

In an article discussing the classification of Japan, Esping-Andersen (1997) rejected the idea that Japan was a unique welfare state (p. 187). He recognised that Japan seemed to combine elements of all three types of welfare regimes: the commitment to full employment in social democratic regimes; status-segmentation and familialism in conservative welfare regimes; residualism and heavy reliance on the market in liberal regimes (p. 183). He argued that the structural features of the Japanese welfare state involved both Bismarckian conservative elements and liberal residualism (p. 184), and the familialism in Japan was not unique when compared to Continental European welfare states (p. 187). Nonetheless, he did not make a final judgment on Japan because the Japanese welfare state remained institutionally immature and unformed (p. 188). According to some scholars, Esping-

Andersen (1997) considered Japan a hybrid (Ku & Finer, 2007, p. 124).

Esping-Andersen (1999) stated that Japan should be assigned to the conservative welfare regime cluster (p. 92). He reiterated that no uniqueness could be observed: Japan manifested elements of liberal and conservative regimes, but the mixture did not grant a distinct world of welfare regime. In addition, the liberal side of the Japanese welfare state was “less liberal than appearances suggest”, but conservative traits have been reinforced by the growing corporatist social insurance system and familialism (p. 92). Occupational welfare was less liberal because it was a conservative and paternalistic practice (p. 91). Confucian teachings in Japan played similar roles as Catholic familialism in Continental European countries (p. 82). In the preface of the Chinese edition of *Three Worlds of Welfare Capitalism*, Esping-Andersen indicated that East Asian welfare systems could be seen as either hybrids of his liberal and conservative welfare regimes or a fourth regime (Ku & Finer, 2007, p. 121). Esping-Andersen had trouble classifying Japan and did not give a clear answer when he was asked if there was a unique Japanese welfare state (Hayashi, 2006, as cited in Powell, Kim, & Kim, 2020, p. 96).

As discussed in Section 2.2.3, a major criticism of Esping-Andersen (1990) was misclassification. This also applied to the case of Japan. Powell, Kim, and Kim (2020) found that only 3 out of 40 studies reached the same conclusion as Esping-Andersen (i.e., classifying Japan as a conservative welfare regime), 9 studies identified Japan as a liberal welfare regime, and 7 studies viewed Japan as a hybrid. Scruggs and Allan (2006) placed Japan into the liberal welfare regime cluster after replicating the calculation of the decommodification index. They found an error in Esping-Andersen’s calculation, which led to the misclassification of the Japanese welfare state (pp. 61-62). Regarding the familistic and corporatist elements, such as occupational benefits, they argued that these features were also present in other liberal welfare regimes (pp. 70-71). Likewise, Bamba (2006) pointed out a

mistake in Esping-Andersen's calculation of decommodification. She classified Japan as a liberal welfare regime. This classification was also supported by her updated data in 1998/1999.

Following Esping-Andersen's criteria and methodologies, many scholars conducted cross-national analyses that include Japan. Table 2.2 summarises major classifications of the Japanese welfare state, mainly proposed by Western scholars. Table 2.2 illustrates that a variety of concepts, case selection strategies, and methods have been employed. There was no consensus about the concept used in the analysis, as scholars designed classifications based on different research objectives. Some studies aimed to replicate and test the robustness of Esping-Andersen's classification (e.g., Bambra, 2006, 2007a; Scruggs & Allan, 2006, 2008), while others examined different policy sectors and concepts (e.g., Powell & Barrientos, 2004). Regarding methodology, in addition to the indexation applied by Esping-Andersen (1990, 1999), both sophisticated quantitative techniques (such as cluster analysis) and case studies with descriptive statistics have been utilised. Most scholars have focused on OECD countries, but their strategies in the selection of welfare states were slightly different. More details on the selection of cases, concepts, variables, and methodology are discussed in Chapters 6 and 7 of this thesis.

Given the diversity of concepts and methodologies, it is not surprising that classifications of the Japanese welfare state vary. As shown in Table 2.2, a relatively large proportion of researchers have classified Japan as a liberal welfare regime, but complexities remained. There were a few classification results that did not fit Esping-Andersen's theoretical framework. Bambra's (2007a) cluster analysis classified Japan with Italy. Danforth (2014) not only classified Japan with Canada, Ireland, the UK, and the US in 2000 but also pointed out a change in classification. Hudson and Kühner (2009, 2011) constructed a framework to classify welfare states based on their productive and protective functions. The

protective function was measured by income protection and employment protection, while the productive function was captured by investment in education and human capital. They identified four pure ideal types (i.e., weak, protective, productive, and protective-productive) and five hybrid ideal types (i.e., weak protective, weak productive, protective plus, productive plus, and weak productive-protective). Using the data in 2003, Hudson and Kühner (2009) classified Japan with Spain, France, the Czech Republic, Japan, Portugal, the United Kingdom in the weak protective group. In a later analysis using the data from 2005 to 2008 including more welfare systems, they classified Japan with Australia, Bulgaria, and the United Kingdom in the weak group (Hudson & Kühner, 2011).

	Concepts/Variables	Method	Case selection	Japan
Esping-Andersen (1990) (1999) (1997)	Decommodification Stratification Welfare mix	Index	OECD 18	Decommodification: Conservative Stratification: Liberal
	+ Defamilialisation			Conservative
	Welfare mix	Case study (Comparative)	N = 1	Not unique, but too early to classify
Castles & Mitchell (1992)	Redistribution - politics	Descriptive statistics (Matrix)	OECD 18	Low transfer, low equality
Kangas (1994)	Health (= welfare) - politics	Regression, QCA, CA	OECD 18	Corporatist
Korpi & Palme (1998)	Entitlement, benefit level principles, employee-employer cooperation	Descriptive statistics	OECD 18	Corporatist
Goodin (2001)	Work (labor participation rate) Welfare (social spending)	Descriptive statistics	OECD 18	Liberal
Obinger & Wagschal (2001)	Socio-economic, political-institutional, outcome	CA	OECD 20	Anglo-Saxon family
Powell & Barrientos (2004)	Welfare mix Active labour market policy	CA	OECD 21	Liberal
Bambra (2006) (2007a)	Decommodification (updated)	Index	OECD 18	Liberal
	Defamilialisation	CA	OECD 21	Type 3 with Italy
Scruggs & Allan (2006) (2008)	Decommodification (updated)	Index	OECD 18	Liberal
	Stratification (updated)	Index	OECD 18	Liberal
Castles and Obinger (2008)	Outcome	CA	OECD 20	Liberal
Schröder (2009)	Welfare regime & VoC	PCA, CA	OECD 20	Outlier
Hudson and Kühner (2009) (2011)	Protective & Productive	FslTA	OECD 23	Weak protective
			55 countries	Weak
Ferragina et al. (2013)	Decommodification, family policy, unemployment protection	MCA	OECD 18	Decommodification: Liberal, but hard to classify if including family and unemployment
Danforth (2014)	Decommodification, social service, coverage, redistribution, poverty, Defamilialisation, activation	CA	OECD 18	Cluster 2 with CAN, IRE, UKM, USA in 2000; Cluster 1 from 1980- 1995

Note: QCA = qualitative comparative analysis, CA = cluster analysis, PCA = principal component analysis, FslTA = fuzzy set ideal type analysis, MCA = multiple correspondence analysis

In addition, it should be noted that Japan was sometimes considered a hybrid case (see Powell, Kim, and Kim, 2020), which posed challenges to welfare regime typologies, as the

existence of a hybrid undermined the explanatory power. Furthermore, as Chapter 3 discusses, Esping-Andersen's classification has been criticised for failing to account for regional and national contexts, which were essential for understanding the Japanese welfare state. To address these limitations, East Asian and Japanese scholars have proposed various approaches to better incorporate the Japanese welfare state into comparative analyses.

2.4 Summary

Compared to previous welfare state typologies, Esping-Andersen's "three worlds" was a relatively complete and empirically robust framework in comparative welfare policy studies. Decommodification and stratification based on social citizenship were able to reflect Western welfare states to some extent. As a response to criticisms, Esping-Andersen's later modification based on social risks added defamilialisation as another dimension to measure the welfare state, which enriched the concept of the welfare mix. A welfare triangle (i.e., the state, the market, and the family) can be identified in his theory.

In terms of classifying the Japanese welfare state, Esping-Andersen (1990) suggested a relatively comprehensive and comparable framework including Japan and other advanced welfare states. However, some problems remained unsolved. Firstly, Esping-Andersen's welfare regime analysis was exclusively based on the experience of Western welfare states. Although Japan was included, the discussion was insufficient. Powell and Barrientos (2011) have pointed out that the analytical foundations of Esping-Andersen's framework were not solid. Whether the theoretical bases of his theory can be applied to other non-Western welfare states, especially East Asian welfare systems, was doubtful. Chapter 3 addresses this issue by reviewing the literature of East Asian welfare regimes. Secondly, although Esping-Andersen maintained that his framework remained robust and could be expanded to explain non-Western cases, scholars were unable to reach a consensus on the classification of Japan (see Table 2.2 above). Thirdly, given Esping-Andersen's work was published at the end of the

twentieth century and dramatic changes in the political economy in the last twenty years, it was necessary and important to examine the latest development of the welfare state. Fourthly, Esping-Andersen mainly focused on the social security system but neglected service provision (see Kautto, 2002; Jensen, 2008; Stoy, 2014). Nonetheless, these researchers considered healthcare a component of welfare services. Bambra (2005a, 2007b) tried to bridge welfare regimes and healthcare research, but few scholars addressed the relationships between welfare regimes and healthcare systems (see Section 5.1). Last but not least, Esping-Andersen did not directly reply to radical criticisms, which argue against the usefulness of the welfare regime approach. Section 5.2.5 discusses Kasza's (2002, 2006) argument in more detail. It should be noted that the welfare regime was still a useful tool to analyse welfare states. As van Kersbergen (2019) suggested, blaming the welfare regime approach for the lack of empirical complexity misses the point because the aim of welfare typologies was to reduce the complexity of welfare policies for comparative purposes (pp. 120-121). As a heuristic tool, simplicity is an advantage instead of a disadvantage.

Chapter 3 Japan as an East Asia Welfare Regime or A Unique Welfare State

Chapter 2 reviews Esping-Andersen's welfare regime typology and his classification of Japan. Although Japan was included in his analysis, Esping-Andersen's welfare regime approach largely concentrated on established welfare states in Europe and North America. At the same time, there was growing interest in applying the welfare regime approach to the other regions of the world. Within these intellectual attempts to expand the welfare regime analysis beyond the West, East Asia has attracted scholars' attention. East Asia achieved rapid economic growth at the end of the last century. Major economies (e.g., Japan, South Korea) in this area have reached a similar level to Western countries. With the growth of the economy, welfare systems in these nations were also developing. More intellectual efforts have been invested in examining these newly emerging welfare states in East Asia. On the one hand, compared to Euro-American welfare states, East Asia showed a different picture of welfare development. It has been pointed out that the experience of Western welfare states was less applicable to East Asia. In other words, the existing theories were ethnocentric (Takegawa, 2005; Walker & Wong, 1996, 2004, 2013). East Asian welfare systems shared some similarities, but it should be noted that the "East Asian welfare model" was a controversial concept that tended to oversimplify the characteristics of different East Asian welfare systems. White and Goodman (1998) wrote that "it is misleading to think in terms of one homogeneous, over-arching 'East Asian welfare model'" (p. 14). Holliday (2000) proposed a productivist world of welfare capitalism (i.e., a fourth world in addition to Esping-Andersen's three worlds) but rejected the existence of a single East Asian welfare model (p. 716). Lin (1999) noted that Japan and China had developed social insurance systems, while Singapore had introduced a compulsory saving scheme (i.e., the CPF (Central Provident Fund)), and Hong Kong mainly relied on residual public assistance. Therefore, these welfare systems could not be placed in a single category called the East Asian welfare

model, but there was a looser East Asian welfare cluster emphasising their similarities, such as workfare-centred and familism (p. 111).

In geographical terms, East Asia consists of mainland China, Japan, South Korea, North Korea, Taiwan, and Mongolia (Kort, 2006, p. 9). However, few researchers of East Asian welfare regimes followed the geographical definition of East Asia. For example, there were a few studies that included the welfare systems of North Korea and Mongolia in the discussion of the East Asian welfare regime. In addition, a limited number of scholars have considered the welfare system in mainland China under the larger East Asian context. When referring to East Asian welfare regimes, most scholars have focused on the welfare systems of Japan, South Korea, Taiwan, Hong Kong, and Singapore.

This chapter focuses on the development of the welfare regime analysis in East Asia with an emphasis on Japan, the first country that develop a modern welfare system in this region. Section 3.1 reviews different versions of the East Asian welfare model, including culturalist, political economic, and post-productivist explanations. Japan was usually viewed as an East Asian welfare regime. Section 3.2 considers the debate on the uniqueness of the Japanese welfare state. After that, Section 3.3 reviews alternative explanations and classifications of the development of the Japanese welfare state. Most of these explanations in Sections 3.2 and 3.3 were developed by experts in Japanese studies and Japanese scholars. These analysts contended that neither Esping-Andersen's classification nor the East Asian welfare regime was able to explain the welfare development in Japan. Finally, Section 3.4 summarises various East Asian welfare regime literature reviewed in this chapter and identifies some of its limitations.

3.1 East Asian Welfare Regimes

The economic success in East Asia has attracted scholars' interest in their welfare systems. Early research dates back to the 1980s. Rose and Shiratori (1986) included Japan

and other industrialised countries in their comparative analysis. They stated that Japan and the US shared some similarities: having different cultural origins from Europe, playing significant roles in the world economy, and refusing to accept the principle of social democracy (p. 6). Midgley (1986) wrote that the established theories for Western welfare states did not have sufficient explanatory power to explain the development of welfare systems in four Asian Tiger economies (i.e., South Korea, Taiwan, Singapore, and Hong Kong). Some welfare studies focused on the influence of culture in individual countries (e.g., for Japan, see Lin, 1999, p. 34), although the amount of similar research was very small.

These analyses in the 1980s mainly concentrated on pointing out differences between the East and the West. After the publication of Esping-Andersen's classic work in 1990, the relationship between Esping-Andersen's three worlds and East Asian welfare systems has attracted intellectual attention. Jones (1990, 1993) was the first author to suggest that East Asian welfare systems could be classified as a distinct group based on cultural factors. Following Jones, some researchers adopted the cultural approach and argued for similarities of different East Asian welfare regimes based on Confucian traditions, which is discussed in Section 3.1.1. However, other scholars contended that East Asian welfare systems should be analysed through the lens of political economy rather than Confucianism. Section 3.1.2 focuses on the political-economic explanations. Over time, these explanations have become the dominant framework in debates on East Asian welfare regimes. Nevertheless, productivism and developmentalism were not without limitations. East Asia has undergone significant transformations due to democratisation, economic crises, post-industrialisation, and globalisation. As a result, some researchers had questioned whether East Asian welfare systems still adhered to the productivist model. Section 3.1.3 focuses on the literature focusing on development in the post-productivist era.

3.1.1 Culturalist Explanation

The core of the culturalist explanation is Confucianism. Culturalists attributed Asian economic success and the development of welfare to Confucianism. The earliest attempt to identify cultural differences between the East and the West might be Chow (1987), who stated that, emphasising the role of family and kinship, the Chinese idea of welfare was based on traditional humanitarianism and less ambitious than its Western counterparts (pp. 38-39). Chow's (1987) account revealed some general cultural differences but did not focus on analysing and comparing welfare states. The pioneer of cultural explanation was Jones (1990, 1993). Jones (1990) used the term "oikonomic welfare states" (i.e., household economic welfare states) to describe the welfare systems of the four Asian Tiger economies. Without the Western tradition of democracy and citizenship, the bases of these welfare systems were rooted in Chinese and Confucian conceptions of family, which conceived society as an extended family resting on groups, duties, and obligations rather than individual, equal rights, and constructive conflicts. In Jones' (1993) perspective, Confucianism was not the teachings of the philosopher and his disciples, but a set of popular values that could vary according to contexts. These precepts included groupism, hierarchy, and corporatism (pp. 203-204). Instead of satisfying the demands of the citizens, the major aim of social policies of East Asian economies was to construct or reconstruct a sense of community, which stood for "order, discipline, loyalty, stability, collective self-help" (p. 208). Furthermore, Jones (1993) argued that Esping-Andersen's typology was rooted in Western capitalism. Therefore, it could not adequately explain welfare development in East Asia. East Asian welfare systems were neither liberal nor social democratic because there was a strong intervention of the government with a limited sense of individual rights and minimal provision of welfare. They were also not conservative due to insufficient welfare provision to the middle class as a preservation of status. East Asian welfare systems should be classified as a new cluster: The Confucian welfare state, where "conservative corporatism without (Western-style) worker

participation; subsidiarity without the Church; solidarity without equality; laissez-faire without libertarianism: an alternative expression for all this might be ‘household economy’ welfare states - run in the style of a would-be traditional, Confucian, extended family” (Jones, 1993, p. 199).

Another version of the Confucian welfare cluster was provided by Lin (1999). Compared to Jones’ (1993) general account of Confucian welfare states, Lin (1999) offered a relatively more detailed and comprehensive culturalist explanation. His argument started from East Asian Confucian culture, which consisted of the elements from not only Confucian teachings but also Buddhism, Taoism, and Shinto. Regardless of their religions, they followed a set of Confucian values to deal with social relationships (pp. 30-34). He argued that as guidance to people’s behaviour, an approach of governance, and a common value, Confucianism was a common feature for East Asian states, while the difference in “official ideology” among these countries was not sufficient to reject Confucian culture as a shared value in East Asia (p. 34). Then, he identified five elements of Confucianism in East Asia: familism; hierarchic groupism; moralism and anti-commodification (i.e., despising merchants because they damage the family value); paternalism; centralism (p. 67). After reviewing the development of welfare systems in Japan, Mainland China, Hong Kong, and Singapore, he argued that mainstream theories explaining the development of Western welfare states were not suitable for applying to these East Asian cases. The industrialism and convergence approach advocated by Wilensky (1975) asserted that newly industrialised countries would establish a European-style welfare state as their economy developed. However, this did not happen in East Asia (Lin, 1999, p. 125). The hierarchical order and less active social groups in Confucian societies undermined class conflict and political activism, which meant that class conflict and power resources theory also failed to explain the welfare development in East Asia (p. 132). The state-centred approach, highlighting the roles of bureaucrats and

welfare professionals, was insufficient because it overlooks socio-cultural factors (p. 136).

The privatised group-based welfare provision in East Asia should be attributed to Confucian familistic groupism, which was rooted in reciprocity (p. 165).

In addition to theoretical discussion, Lin (1999) compared the Confucian welfare cluster with other welfare regimes identified by Esping-Andersen and other scholars (see Chapter 2). Firstly, both the liberal welfare regime and the Confucian welfare cluster had a low level of redistributive effects. However, while minimal security in liberal welfare regimes was committed to individual rights, Confucian societies placed less emphasis on these rights. Unlike liberal welfare regimes, where the state encouraged the market by either providing modest benefits or funding private schemes, East Asian governments emphasised social responsibility and engaged in welfare affairs in a paternalistic manner (pp. 167-168). Secondly, compared to conservative welfare regimes, where strong collectivism and corporatism influenced social policy, the Confucian welfare cluster was shaped by dominant ideologies such as paternalism, moralism, and authoritarianism. These ideologies drove a top-down approach to social policy, primarily aimed at nation-building. Based on occupation rights and contribution, income security in conservative welfare regimes was institutional, whereas welfare provision in Confucian Asia was insufficient and residual. Voluntary organisations in conservative welfare regimes were more developed than those in Confucian societies (pp. 168-170). Thirdly, the social democratic welfare regimes were most divergent from the Confucian welfare cluster because the principles of universalism and social rights were opposed in East Asia (p. 170). Finally, the fourth world (see Section 3.3 for relevant discussion), which included Southern European countries, shared many similarities with East Asian welfare systems (e.g., family dependence, distinction between insiders and outsiders). However, a substantial difference between them was the state's interference in welfare affairs. In terms of familism, these two clusters were also different: Confucian ethics emphasised the

hierarchical order of family members and the clan-based network within the communities, which were absent in Catholic familism. The Confucian familistic groupism expanded and facilitated the company welfare in East Asia (pp. 172-173). Lin (1999) summarised several characteristics of the Confucian welfare cluster: authoritarianism, paternalism, familistic groupism, insufficient social security provided mainly by private or collective associations, and welfare services provided by private informal actors (p. 177).

The culturalist approach was supported by some scholars. Abrahamson (2017) examined the development of East Asian welfare policies and found that Japan has become a conservative welfare regime, but the Confucian value remained one of the dominating concepts in East Asia. Therefore, the cultural explanation of East Asian welfare systems remained robust (p. 100). Lin and Rantalaaho (2003) highlighted the cultural factors in policymaking by comparing the family policies in Scandinavian and Confucian countries. Rieger and Leibfried (2003) also emphasised the role of culture in shaping social policy (p. 285). They compared the influence of Christianity and Confucianism on Western and East Asian social policy, respectively. Rooted in the ontologically fixed immanence, social ritualisation, ethic of responsibility, and kinship community, East Asian social policy was featured by heteronomy, homogeneity, statism, and particularism. In contrast, shaped by truth-revealed religion, salvation, ethic of conviction, and pneumatic community, Western social policy was autonomy, heterogeneity, dynamism, and universalism (p. 327).

Feminist scholars also attached the importance of Confucianism to their studies of welfare systems in East Asia. As elaborated in Section 2.2.3, Esping-Andersen's approach neglected the gender perspective, while Western feminist criticisms did not pay enough attention to East Asia and the influence of culture (Sung, 2003, p. 347). Sung and Pascall (2014) stated that the difference between East Asian families and Western families persists: in the Confucian family system, the family-in-law was important as well as the interaction

between wives and husbands (pp. 7-8). They argued that the hierarchical Confucian model of the family prioritising male breadwinners was a common feature of East Asian welfare systems (p. 10). Jiang (2009) and Kovacs (2013) argued that Confucian values have strengthened gender inequality and reinforced the male-breadwinner model. At an individual country level, the influence of the Confucian welfare state on gender issues in South Korea was examined by several authors (Kim & Kim, 2020; Sung, 2003, 2014; Won, 2014). Nevertheless, unlike their Western counterparts, East Asian feminist scholars did not develop systematic comparative analyses and engage in the welfare regime debate.

However, there were some limitations of the Confucian explanation. Firstly, the cultural explanation was theoretically insufficient. Esping-Andersen (1997, 1999) noticed the influence of the Confucian culture, but he argued that the functional equivalent of Confucian heritage could be identified in European welfare states (i.e., Catholic teachings). Walker and Wong (2005) reinforced that Western values, such as American values and Protestant ethics, were similar to Confucian values (p. 9). Scholars advocating productivism also rejected the Confucian explanation. White and Goodman (1998) stated that the cultural explanation of East Asian welfare systems was essentialist, static, timeless, abstract, and intellectually elastic. The cultural approach tended to marginalise other important factors, failed to capture changes and conflict, and lacked solid empirical support. It also tended to consider East Asia as a homogenised society and creates a dichotomy between the West and the East without paying attention to differences within the region and interactions between East Asia and other industrialised welfare states (pp. 15-16). The culturalists usually viewed East Asia as a whole influenced by Confucian values but missed the variety of Confucian impacts on different countries within East Asia. Confucianism should be explained in specific contexts. Yi (2018) noted the importance of analysing how the real actor (i.e., the ruling class) behind Confucianism made use of these traditional values (p. 56). This was particularly important for

Japan, where a number of Japanese scholars argued that, compared to South Korea and China, Japan has received less influence from Confucianism (Ito, 2014, pp. 138-139; Ochiai & Johshita, 2014, pp. 152-154). The Confucian ideology was also less consistent in China due to the political transformation to Marxism, although there was a recovery of traditional values after the systemic reform at the end of the 1970s (Pascall & Sung, 2014, p. 187). Secondly, it was difficult to measure the influence of Confucian culture. Most culturalist analyses were qualitative and exclusively focused on East Asia. The shortage of empirical analysis and comparisons undermined the empirical robustness of the Confucian welfare regime. The culturalist approach also lacked empirical support: there was no clear pattern of East Asian countries in terms of defamilialisation, even though these countries were rooted in Confucian culture. Different East Asian countries shared different characteristics with other OECD countries (Chau & Yu, 2013; Yu et al., 2015). In addition, it was doubtful that Confucian values were still influential in modern East Asian societies. With globalisation and industrialisation, more women participated in the labour market to achieve financial independence. The prevalence of high divorce rates and low fertility rates has changed the family structure. In order to respond to challenges caused by new trends in socio-economy and demography, East Asian governments started to act more actively in providing welfare (Chau & Yu, 2013, pp. 357-358; Yu et al., 2015, pp. 77-79).

3.1.2 Political-economic Explanation

Unlike the cultural approach, political-economic explanations of East Asian welfare systems were much more diverse. According to Yang (2016), Johnson (1982) was the first scholar to propose the term “developmental state” to analyse the Japanese style of economic development. Kim (1985) was perhaps the pioneer suggesting the social elements in the development of East Asia because social problems generated by economic development could not be solely solved by economic solutions (pp. 17-18). Deyo (1992) reviewed the

development of social policy in newly industrialised economies in East Asia and concluded that social policies have been used to support economic development (pp. 304-305). East Asia was usually labelled as productivism and developmentalism. Scholars tended to view these two terms as synonyms. For example, Kwon (2005) mentioned that the term productivism was similar to his developmentalism. He chose to use developmentalism because it could draw from developmental studies (p. 479). Holliday (2005) also tended to use these two terms interchangeably. In this thesis, both productivism and developmentalism were perceived as political-economic explanations that highlighted the distinctive political-economic nature of East Asian welfare systems from Western welfare systems. This subsection reviews the productivist approach and then moves to theories focusing on politics, but it should be noted that productivism (or developmentalism) and political explanations are usually interwoven.

One of the well-known versions of the productivist approach was developed by Holliday (2000). In addition to social rights, social stratification, and the welfare mix (of state, market, and family), he added a fourth criterion, subordination of social policy, to measure welfare states. According to these criteria, East Asian welfare systems belonged to a new category (i.e., the productivist world of welfare capitalism) in addition to Esping-Andersen's (1990) three worlds. The key features distinguishing the productivist welfare regime from Esping-Andersen's three worlds were "a growth-oriented state and subordination of all aspects of state policy, including social policy, to economic/industrial objectives" (p. 709). Social rights were minimal, stratification reinforced the productive elements, and the welfare mix was based on economic growth (pp. 708-709). Nevertheless, Holliday (2000) rejected the idea of a homogeneous East Asian welfare model. He recognised the diversity within the region and suggested three sub-categories: facilitative, development-universalist, and development-particularist. Facilitative welfare systems were similar to Esping-Andersen's

(1990) liberal welfare regime, but social policy was subordinated to economic policy in these welfare systems. Development-universalist welfare systems expanded social rights to the productive population and established a privileged class of workers. The state played a relatively important role in addition to the family and the market. In development-particularist welfare systems, the expansion of social rights was absent. Instead, individual welfare provision for productive groups was encouraged. The role of the state in welfare provision was more directive (p. 710). Japan was regarded as a development-universalist welfare state, where social rights were limited to productive activity, and social stratification reinforced productive elements, but some universal programmes existed (p. 711).

Gough (2004) provided a broader account of the East Asian productivist welfare regime from a global perspective. Most Northeast Asian and Southeast Asian welfare systems were classified as informal security welfare regimes. He examined the welfare outcome in five Asian countries (i.e., South Korea, Malaysia, Thailand, Philippines, and Indonesia), and pointed out several characteristics of the productivist welfare regime in East Asia: the subordination of social policy; emphasis on social investment; with the aim of national-building and regime legitimation; a smaller role of the state (pp. 190-191).

Although other scholars did not thoroughly develop a distinct world of welfare capitalism, they tended to explain the same theme from the perspective of economic development and nation-building. White and Goodman (1998) observed a state-led pattern and priority given to economic development in East Asian countries. They identified several similarities among five societies in East Asia: prioritised economic growth, relatively cheap in terms of finance, less dependent on the state, unequal gender and social relationships, conservative dominance, lack of integration, and segmented systems (pp. 17-18). Similarly, Goodman and Peng (1996) suggested a “Japan-focused East Asian social welfare regime” that involved Western welfare ideas but adopted a distinct path from their Western

counterparts (p. 194). East Asia was characterised by the strong role of family welfare, segmented and residual social insurance systems, and company welfare plans for the core social groups (p. 208). The logic behind the welfare development in East Asia was “peripatetic learning and development strategies with the prime goal of nation-building” (p. 210). Peng and Wong (2010) stated that the thesis of “East Asian exceptionalism” could be explained by the Confucian heritage, the absence of leftist power, and the emphasis on productivity. They divided East Asian welfare systems into two groups: inclusive social insurance with a certain degree of universalism and redistributive effects (i.e., Japan, South Korea, and Taiwan); individualistic social protection without providing a relatively comprehensive safety net (i.e., Hong Kong, Singapore, and mainland China). They also attached importance to democratic processes as the political logic behind the development of the inclusive social insurance model (p. 663). Tang (2000) and Walker and Wong (2005) argued that the developmental states in East Asia were not equal to Western welfare states because democratic institutions were absent, and the overarching aim was to achieve economic prosperity rather than safeguard citizenship. Ku and Finer (2007) added that value, nation-building, economic development, and changing social structural and institutional settings were several possible explanatory factors of the East Asian welfare model (pp. 125-126). Kwon (1997) proposed to distinguish the role of the state in welfare provision. He argued that the state was a regulator in Japan and South Korea, where financial support from the government did not count as a major part of the social security system, whereas the state was a provider in Western countries (p. 471). He also rejected the idea that Japan and South Korea belonged to Esping-Andersen’s conservative welfare regime. Both countries subordinated social policies and introduced some social programmes based on economic considerations (pp. 480-481). Lee and Ku (2007) conducted cluster analyses and concluded that Taiwan and South Korea formed a fourth cluster that was distinctive from Esping-

Andersen's three worlds.

Some analysts noted the importance of political factors. Hwang (2011) argued that democratisation mattered for the development of social policy in East Asia: undergoing the process of democratisation in the 1980s and 1990s, Japan, South Korea, and Taiwan have experienced expansions of their welfare systems, while there was little progress in developing social policy in Hong Kong and Singapore, where political climate did not change significantly (p. 6). Aspalter (2001) attached importance to institutional and political settings in East Asian welfare state development. In addition to Esping-Andersen's three worlds, Aspalter (2001, 2006) developed his fourth world for East Asia in a different way from productivism mentioned above. He emphasised the role of politics, such as conservative elites and democratic movements, in the development of East Asian welfare systems. He argued for a Confucian conservative welfare regime as an ideal type in East Asia. In a later publication, he used the term "pro-welfare conservative welfare regime" to describe welfare systems in East Asia (Aspalter, 2023, p. 43). The East Asian version of the conservative welfare regime was different from the European Continental corporatist/Christian democratic welfare regime in Esping-Andersen's welfare regime typology. Social policy in East Asia was not always subordinated to economic policy, but the expansion of social security programmes was largely a response to political needs. One of the major attributes of conservative welfare systems in East Asia was that social policy played a facilitative role in economic growth, as a result of which, the focus of social policy was on human capital. In addition, employment-based and occupational welfare schemes not only were able to reduce the burden of social expenditure but also gained support from privileged groups when dealing with legitimacy for the authoritarian rule (pp. 297-298). East Asian welfare systems had weak effects on redistribution and strong effects on stratification (p. 298). From the perspective of the welfare mix, the aim of social policy was to supplement rather than replace the welfare provision of

family and market. The role of the state was a regulator instead of a provider (cf. Kwon, 1997, 1998). Kwon (1998) reinforced that the absence of influence from labour unions and Social democratic power could explain the development of East Asian welfare systems, which were mainly designed by conservative elites (p. 66).

These political-economic explanations pointed out some features that were different from Western established welfare states. Compared with the culturalist approach, which was usually accused of lacking empirical evidence and over-emphasising the function of Confucianism, productivist and political explanations received more support from East Asian welfare regime researchers. However, these political-economic explanations needed to respond to the challenge of internal homogeneity and external heterogeneity (Yu, 2012, p. 101). On the one hand, geographical location itself could not be a criterion for classifying welfare regimes. East Asian economies were different in terms of their developmental stages, but whether these common features identified by productivism could sufficiently capture the area remains questionable. The problem here was to deal with national differences within the region (i.e., internal homogeneity). On the other hand, whether the productivist element was unique to East Asia was questioned by some researchers (i.e., external heterogeneity). For example, Esping-Andersen (1999) contended that Scandinavian countries were productive because they provided citizens with the necessary resources to encourage them to work (p. 80). Jessop (1993) argued that the Keynesian welfare state has shifted to the Schumpeterian welfare state, which emphasised the subordination of social policy to economic competitiveness.

Table 3.1 summarises the major variations in constructing East Asian welfare regimes and their case selection strategies. Although there was a diversity of dimensions used by scholars constructing the East Asian welfare regime, Japan was regarded as an East Asian welfare regime in most analyses, with a few exceptions that did not include Japan in their

discussion of East Asian welfare regimes explicitly.

Table 3.1: Japan As an East Asian Welfare Regime			
	Key concept(s)	Dimensions	Cases included
Goodman and Peng (1996)	Japan-focused East Asian social welfare regime	Development strategies	JPN + KOR, TWN
Kwon (1997)	State as a regulator	Type of state intervention	JPN + KOR
White and Goodman (1998)	The East Asian welfare model	State-led pattern and priority of economic development	JPN + KOR, TWN, HKG, SGP
Lin (1999)	Confucian welfare cluster	Culture	JPN + CHN, HKG, SGP
Holliday (2000)	Productivist welfare capitalism	Subordination of social policy	JPN + KOR, TWN, HKG, SGP
Rieger and Leibfried (2003)	East Asian welfare states	Religious roots of social policy	JPN + KOR, TWN, HKG, SGP
Aspalter (2001, 2006)	Confucian conservative welfare regime	Politics	JPN + KOR, TWN, HKG, SGP (CHN in 2001)
Hong (2008)	East Asian welfare regime	Contingent rent political game model	JPN + KOR
Kim (2010)	East Asian social welfare	Agricultural protection and enterprise welfare	JPN + KOR
Abrahamson (2011, 2019)	Confucian welfare regime	The role of family in care	CHN, JPN, KOR, TWN, HKG, SGP (2019)
Kamimura (2018, 2020)	East Asian welfare states	Historical heritage of decommodification and international situation	Typically KOR, TWN (but other EA can apply)
Other analysis that did not mention Japan explicitly			
Jones (1990, 1993)	Oikonomic welfare states Confucian welfare states	Culture	KOR, TWN, HKG, SGP
Tang (2000)	Social welfare development in East Asia	Developmental states and ideologies	KOR, TWN, HKG, SGP
Gough (2004)	Productivist welfare regime (informal security welfare regime)	Subordination of social policy	KOR, MYS, IDN, PHL, THA

3.1.3 The Era of Post-productivism?

Both culturalist and productivist approaches described East Asian welfare systems from the 1990s to the 2000s. The economic miracle of East Asia faded after several Asian and global economic crises. Scholars have started to discuss post-productivist challenges since 2005. There were several challenges in the new era: the financial crisis, democratisation, and post-industrialisation (Hwang, 2015, p. 232). At the same time, welfare systems in East Asia have undergone a series of reforms, and changes in these welfare systems could be observed in the past two decades (see e.g., Kamikubo's (2019) account of Japan). However, scholars

have not yet reached a consensus on whether there is a regime shift in East Asian welfare systems. On the one hand, it was argued that productivism had lost its explanatory power. Fleckenstein and Lee (2017) explained the interaction between democratisation and post-industrialisation: the end of the dominance of the LDP (Liberal Democratic Party) in Japan and the democratisation in South Korea and Taiwan challenged the conservative elites, and therefore, facing post-industrialisation changes (such as female participation in the labour market and the reduction of traditional families) and fierce competition, political actors made use of social policy to gain support, resulting in the expansion to less productive sectors including child and long-term care (p. 37). Lin and Wong (2013) and Lin and Chan (2015) emphasised the paradigm shift from the productivist model to the redistributive model in East Asian welfare systems. Nam (2020) argued that political economic approaches lacked explanatory power and empirical support because they tended to simplify diverse institutions and developmental paths, fail to capture recent reforms, and suffer from a shortage of cross-national data and systemic quantitative comparative research (pp. 564-565). After examining the similarities and differences in East Asian welfare systems, Hong (2022) concluded that “the economy-first productivist approach is not so obvious” (p. 163). In addition, some analysts argued for the divergence of welfare systems in East Asia (see Choi, 2012; Wilding, 2008; Yang, 2016; Yang & Kühner, 2020). Some scholars also questioned the empirical robustness of the East Asian welfare model. For instance, Hudson and Kühner’s (2011) fuzzy set ideal type analysis did not support a distinctive East Asian welfare model in terms of productivism. In a recent classification using the data of the mid-2010s offered by Yörük and his colleagues (2022), Japan was grouped as a populist welfare state (i.e., moderate benefits in all aspects) with Southern European countries and other newly emerged welfare states, while South Korea was classified as a neo-liberal welfare regime, similarly as the US.

On the other hand, some scholars argued for the persistence of productivism and

developmentalism. Holliday (2005) maintained that although East Asia was hit by the financial crisis, the productivist explanation remained useful and plausible, and it was too early to deny the productivist thesis after examining the welfare systems in four Asian Tiger economies. In order to capture changes in East Asian welfare systems, Kwon (2005, 2009) proposed two types of welfare developmentalism: selective and inclusive. Selective welfare developmentalism was discriminating and authoritarian, whereas the latter was universal and democratic (Kwon, 2005, p. 482). Hong Kong and Singapore remained selective, but South Korea and Taiwan have moved toward inclusive developmentalism. Despite these differences, East Asian welfare systems remained developmental. Hwang (2012) contended that changes in welfare systems in Japan, South Korea, and Taiwan were confined within the logic of productivism (i.e., these reforms aim at promoting economic growth). The strong role of the market persisted, and therefore, a regime shift could not be observed in East Asia (pp. 197-199).

Table 3.2: Japan in Post-productivist Literature		
	Argument	Explanation of Japan
Crossant (2004)	No Asian model	N/A
Holliday (2005)	Valid	N/A
Kwon (2005, 2009)	Valid but two trajectories	Recent policy development (e.g., LTCI) is productive
Lee and Ku (2007)	KOR and TWN are productive	Hybrid
Wilding (2008)	Divergent between HKG, SGP and KOR, TWN	N/A
Choi (2012)	Moving out of productive nature	Remain productive
Hwang (2012, 2022)	Valid	Recent reforms did not change the logic
Chau & Yu (2013)	No East Asian welfare model in terms of defamilization	Included but no specific explanation
Lin and Wong (2013) Lin and Chan (2015)	Model shift from productive to redistributive	Pressure from economic globalization and political democracy (for all EA)
Yang (2016) Yang and Kühner (2020)	Divergent	More focus on productive than protective
Fleckenstein & Lee (2017)	Went beyond productivism	LDP underwent modernization and expanded family policy
Hong (2022)	Social protection & provident fund	Social protection type
Nam (2020)	Divergent	Welfare retrenchment

Table 3.2 shows the main argument of researchers engaging in the debate and their evaluations of the Japanese welfare state. From what has been mentioned above, there was no agreement on whether there was a regime shift in East Asian welfare systems. East Asian social policy changed dramatically, and scholars could identify different features depending on the time when they analysed it (Abrahamson, 2011, p. 27). Early researchers on East Asian welfare systems have started the exploration, but their starting point was the West (i.e., Western welfare states in crisis could learn from the East) instead of these Asian economies

themselves. Culture could be a plausible explanation, but it tends to be abstract and oversimplifies reality. Political-economic theories seem to have strong explanatory power. Nevertheless, it is facing challenges from both outside and within the region. As responses to democratisation, post-industrialisation, and globalisation, reforms and expansion took place in different ways in different welfare states. Whether these new elements have changed the logic of the East Asian welfare regime remains doubtful.

3.2 The Debates on the Uniqueness of the Japanese Welfare State

Japan was the only welfare state that was covered by both Esping-Andersen's (1990, 1999) welfare regime typology and the discussion of East Asian welfare regimes. A common feature was that both groups of theories classify Japan with other welfare states. However, some scholars, especially those who were based in Japan, have challenged this standpoint. Instead, they argued that Japan was a unique welfare state which could not be classified alongside Western welfare states or its East Asian neighbours. The unique Japanese welfare state argument could be dated back to Vogel (1979), who praised the "security without entitlement" achieved by Japan. Nakagawa (1979) claimed that in terms of life expectancy, the availability of medical resources, the burden on citizens, and actual income, Japan has achieved success and ranked higher than Western welfare states. Therefore, Japan should be regarded as a "welfare super-power" and even Sweden "must clearly relinquish its welfare crown in favour of Japan" (p. 10). These earlier accounts revealed some distinct features of the Japanese welfare state, such as good welfare outcomes without an expansive welfare state. Nevertheless, these analyses were not based on systematic comparisons between Japan and other industrialised countries. In addition, they also did not address differences and similarities between Japan and other East Asian welfare systems.

Japanese officials and scholars also developed their narrative of the unique Japanese welfare state. The high level of economic growth after the Second World War equipped Japan

with the economic foundation for building a welfare state. In 1973, the first year of welfare (fukushi gannen), Japan suffered from inflation and stagnation brought on by the oil crisis, but the crisis did not end the development of the welfare state, and the social expenditure remained increasing throughout the 1970s. However, the crisis and various social problems encouraged the debate on the review of welfare (fukushi minaoshi), which was developed further into “the Japanese-model welfare society (nihon-gata fukushi shakai)” by the LDP (Takahashi, 1997, p. 125). The idea of the Japanese-model welfare society was represented in the LDP’s 1979 report, which identified the faults within Western welfare states. The report stated that Japan should stop imitating the Western welfare system and stresses the roles of private sectors, families, communities, and enterprises (Hori, 1981; Takashshi, 1997, pp. 150-154). Although the term “Japanese-model welfare society” was mainly used by the LDP, some scholars with less relationship with the LDP also contributed to the debate. For example, Baba Keinosuke argued that different from Western individualism, groupism of medium groups (chūkan shūdabshugi) was the foundation of Japanese society. The sphere of daily life (nichijō seikatsu-ken) was usually ignored in this groupism. Therefore, the welfare policy should support families and relieve their burden, especially facing the rapid population ageing (Hori, 1981, p. 41; Takahashi, 1997, p. 158). Based on this idea, some Japanese scholars emphasised the role of corporations in providing welfare (cf. Peng, 2000, pp. 93-94).

Table 3.3 shows that some Japanese scholars did engage in the debate of the welfare regime and concluded that the Japanese welfare state was unique and could not be placed into any classification. For instance, Takekawa (2009) argued that underlying logics of mainstream welfare regime typologies were “Swedocentrism, Eurocentrism, and ethnocentrism” (p. 79) because these theories considered every welfare state a derivation from the Sweden model, tended to label East Asian welfare systems without paying enough attention to their differences, and attributed the difference between East and West to the

culture (Takegawa, 2005, p. 171; Walker & Wong, 1996, 2004, 2013). To overcome these tendencies in welfare state research, Takegawa (2009) proposed taking external factors into consideration when researching the development of the welfare state. After examining the cases of South Korea and Japan, he found that Japan and South Korea developed their own welfare states in different international circumstances, which resulted in divergence and denied the existence of an East Asian welfare model. The Japanese welfare state was unique in terms of strong bureaucracy, high levels of public investment, and strong economic regulation, while social democratic politics was weak, social expenditure was low, and social regulation was weak (Takegawa, 2005). Miyamoto (2003) also challenged Esping-Andersen's typology because it could not explain the substitutional role of economic policy in the welfare state. The concept of hybrid also undermined the explanatory power of the theory (p. 15). Miyamoto put Japan between East Asian developmental countries and European established welfare states because Japan developed its welfare system earlier than other East Asian countries (p. 16).

	Argument	Classification
LDP	The review of welfare The Japanese-model welfare society	Unique
Baba Keinosuke	Groupism and corporate approach	Unique
Miyamoto (2003)	Substitutional role of economic policy	Unique
Takekawa (2005, 2009)	Swedocentrism, Eurocentrism, Ethnocentrism	Unique
Tanaka (2019)	Power resources mediated by politics	Hybrid (liberal + conservative)
Shizume et al. (2021)	VoC + welfare regime	Corporate-centered conservative

However, not all Japanese scholars were in favour of the uniqueness of their own welfare state (see Table 3.3). Tanaka (2019) took a similar stance to Esping-Andersen and maintained that Japan was a hybrid of liberal and conservative welfare regimes. Employers possessed more power resources than employees, which was a feature of the liberal welfare regime. Nevertheless, the relationship between employers and employees was mediated by politics, as the LDP not only represented the interests of large enterprises but also absorbed middle and small businesses and the self-employed. As a consequence, welfare policies with conservative characteristics were developed, such as insurance based on occupation (p. 22). Combining the welfare regime and the VoC approaches, Shizume and his colleagues (2021) classified Japan as a corporate-centred conservative welfare state, which was also a group-based CME and a sub-category of Esping-Andersen's conservative welfare regime.

3.3 Other Classifications

In addition to Esping-Andersen's welfare regimes and the East Asian welfare regime,

some scholars proposed alternative explanations for the development of the Japanese welfare state (see Table 3.4).

	Argument/Dimensions	Classification
Kasza (2006)	Uselessness of welfare regime	Not unique
Estévez-Abe (2008)	Political and institutional factors shape the Japanese welfare state	Politics and institution
Yang (2020)	Functional equivalent	Small welfare state
Shinkawa (2013)	Familialism	Southern model
Kato (2019, 2020)	Social security and functional equivalent	Social security and employment security

A comprehensive account of the Japanese welfare state was offered by Kasza (2006). As mentioned in Section 2.2.3, Kasza (2002, 2006) argued against the usefulness of the welfare regime. In order to illustrate the inconsistency between different policy domains within the welfare state (see Section 5.2.5 for relevant discussion), Kasza (2006) chose Japan as an example. Firstly, Kasza (2006) rejected the idea that Japan was a welfare laggard because most researchers compare Japan and other countries without considering the level of economic development, which resulted in “reading Japan’s present into its past” (p. 13). He examined the timing of policy implementation and found that Japan has introduced work-injury and health laws at an early stage, while the pension and family allowance were adopted at an average level of economic development. Additionally, given the role of policy learning and diffusion in shaping the Japanese welfare state, these policy trends could not be captured by classical convergence and divergence theories, such as industrialism, power resources, and variety of capitalism (pp. 29-30) (see Section 1.1.3). Secondly, regarding post-war welfare expenditure, he argued that Japan did not fall far behind the average when taking the level of economic development into account (p. 79). Furthermore, he examined three policy domains

(i.e., pension, healthcare, and employment) and reached separate conclusions for different domains: Japan did not show divergence from other industrialised welfare states in terms of pension and healthcare, but the pursuit of full employment and indifference toward unemployment made Japan distinct. It should be noted that, unlike most authors, Kasza (2006) did not in favour of the uniqueness of the roles of family and company in the Japanese welfare state: he argued that company welfare in Japan was similar to early European practice and the state's role in welfare provision was not undermined by high levels of family welfare (pp. 106-108).

Kasza (2006) also systematically addressed the debate on the classification of the Japanese welfare state. He rejected the idea of the East Asian welfare model. Confucianism failed to explain the current development of social policy and national differences. There was little evidence that other East Asian countries developed their own social policy following the Japanese colonial legacies (p. 117). Concerning the political-economic explanation, Kasza (2006) argued that they overgeneralised and overemphasised the common features without paying attention to the specificity of East Asian welfare systems (pp. 117-118). The case selection was problematic for the East Asian welfare model because China and North Korea, which were very similar in terms of culture, history, and political-economic foundations to other East Asian economies, were often excluded from the East Asian welfare model (p. 118) (see Section 6.1 for relevant discussion). After comparing the pension, healthcare, and unemployment policies in Asia, Kasza (2006) observed diversity and concluded that there was no distinct model of the region. He suggested that economic development, external influence, and demographic and geographical conditions might be able to explain the divergence within Asia. Kasza (2006) not only rejected the East Asian welfare model but also disagreed with Esping-Andersen's typology (see Chapter 2). According to Kasza (2006), decommodification was normative and difficult to operate empirically. If we took

decommodification as a criterion, the world without the market would be the best, which was impossible in modern society and ignored the function of market welfare (pp. 138-139). The great number of disputes about the classification also indicated the controversy and inconsistency of decommodification (p. 140). In addition to the theoretical problems of Esping-Andersen's analysis, there was no distinct pattern or cluster of pension, healthcare, and unemployment policies in advanced industrialised countries (p. 150). Therefore, Esping-Andersen's (1990) theory did not have enough empirical support. Finally, Kasza (2006) concluded that the welfare regime failed to capture the complexity of welfare policies resulting from the diversity of history, actors, policy process, and policy learning.

In short, the key argument of Kasza (2006) was that it was not helpful to discuss the Japanese welfare state within the context of the welfare regime. Japan belonged to neither Esping-Andersen's three types of welfare regimes nor the East Asian welfare model. This was because, from the theoretical perspective, welfare regimes failed to capture the complexity and inconsistency of various social policies. Empirically, old age support, healthcare, and unemployment policies in Japan were not similar to its Asian neighbours. There were no distinct patterns that could be identified, as welfare regime analysts claimed. Simultaneously, the Japanese social policy was not unique among industrialised countries. Kasza (2006) has provided a comprehensive and comparative study of the Japanese welfare policies, which reminded researchers of the complexity of the welfare state. However, arguing for the meaninglessness of typologies failed to recognise that various welfare regime typologies shared a common aim, which was to simplify reality and offer us comparative frameworks. In addition, Kasza (2006) seemed to over-interpret the normative aspect of Esping-Andersen's decommodification. As Béland and Mahon (2016) stated, decommodification did not mean the eradication of the market function: for Esping-Andersen, full employment was an essential condition to support strong decommodification in the social democratic regime (p.

30).

In addition to Kasza's (2006) account of one world of welfare in Japan, Estévez-Abe (2008) offered a political-economic explanation of how Japan has developed its own welfare systems. Estévez-Abe (2008) argued that there was a social democratic bias in Esping-Andersen's framework, which ignored functional equivalents of welfare policies existing in Japan. Therefore, it was unable to explain why Japan was a relatively egalitarian society without large social expenditures (pp. 1-4). In order to capture these characteristics, she suggested using the structural logic approach to understand why a country introduced certain combinations of social policy and its functional equivalents (pp. 4-5). The key element of her structural logic approach was politics. From the end of the US occupation to the election in 1989, the multimember districts and single nontransferable vote (MMD/SNTV) system was dominated by conservative elites. Given that politicians in the MMD/SNTV system preferred the segmented welfare programmes, social policy in Japan has expanded to some core groups with modest effects of redistribution. From 1989 to 1996, the dominance of the LDP was challenged, and more political parties were engaged within the MMD/SNTV system. The coalition government has more capability to increase taxes, and some welfare programmes aimed at wage earners and their family was introduced. Japan was similar to many Northern European countries during this period. Since 1996, the electoral rules have changed. These political changes have made Japan resemble a Westminster-style political system and pushed policymakers to introduce universalistic programmes (pp. 287-290).

There were several insights of Estévez-Abe (2008): firstly, different from the political explanation of the East Asian welfare regime, which only focused on the political features of East Asian countries, she offered a framework (i.e., the structure logic approach) that could be used to analyse and compare the development of a welfare state. Secondly, the role of functional equivalents of social policy was highlighted. These functional equivalents could

explain low levels of expenditure and relatively high levels of redistributive effects existing in the Japanese welfare state (see also Kim, 2020). Thirdly, the structural logic related to the VoC thesis: corporate welfare in large enterprises and lifetime employment played an important role in providing welfare in Japan. Yang (2020) followed the idea of functional equivalents and classified Japan as a “small welfare state” with South Korea and the US. Although an earlier version of this type of argument could be found in Rose and Shiratori (1986), the emphasis on functional equivalents relates to the debate of American exceptionalism in welfare state literature (see Prasad, 2016). Kato (2018, 2020) suggested a new typology based on welfare provision and function equivalents. He argued that the Japanese welfare state had high levels of employment security but low levels of social security.

Another group of scholars was in favour of classifying Japan with Southern European welfare states, with the emphasis on familialism. Shinkawa (2013) expanded Ferrera’s (1996) fourth world to Japan. Shinakawa (2013) argued that, similar to Southern European countries, the Japanese welfare state featured weak decommodification and defamilialisation effects (p. 177). Although Japan has promoted liberal defamilialisation policies, the transformation to a liberal welfare regime has not yet completed (p. 188). Uzuhashi (2003) compared the Southern European model with the Japanese welfare model and argued that the family played a significant role in both models. Similarly, comparative research conducted by Saraceno (2016) identified the similarities and differences between the familialistic welfare states in Southern Europe and East Asia. Estévez-Abe et al. (2016) and Ferrera (2016) also highlighted that the resemblances between Southern Europe and East Asia were best captured by the concept of familialism.

3.4 Summary

This chapter has reviewed the intellectual attempts to expand Esping-Andersen’s

regime theories to East Asia. As Table 3.1 shows, analysts suggested that East Asian welfare systems should be considered as a distinct cluster in terms of culture (i.e., Confucianism), historical heritages (e.g., Kamimura, 2018, 2020), and political economy (e.g., productive elements, conservative politics). In most studies of East Asian welfare regimes, Japan shared many similarities with its East Asian neighbours. However, classifying East Asian welfare systems altogether was not without limitations, especially under the pressure of globalisation and post-industrialisation. Recently, East Asian economies have introduced a series of reforms to restructure their welfare systems. A consensus has yet to be reached on whether the development logic has fundamentally changed within the region. In addition, this chapter covered some specialists in Japanese studies rejecting both Esping-Andersen's classification and the East Asian welfare model. Instead, they argued for the uniqueness of the Japanese welfare state. Furthermore, this chapter also identified some alternative classifications and explanations for the development of the Japanese welfare state. These scholars contended that existing theories were insufficient to explain the case of Japan. These classifications did not fit into the three main approaches mentioned above.

After reviewing existing studies, we could identify some issues that have not yet been fully explored. First, the literature in Chapters 2 and 3 reveals three main approaches to classifying the Japanese welfare state: Esping-Andersen's three worlds, the East Asian welfare regime, and a unique welfare state. Japan could be classified as liberal, conservative, or hybrid (see Section 2.3) using the framework proposed by Esping-Andersen (1990). Both the classification of the East Asian welfare regime and the uniqueness thesis provided new perspectives for classifying Japan, as both highlighted the regional or national contexts that have not been sufficiently examined in Esping-Andersen's framework. However, the argument for an overarching East Asian welfare model was also facing theoretical and empirical challenges, such as overemphasising regional homogeneity and ignoring the

changes in the post-productivist era (see Table 3.2). It has been over 30 years since the publication of Esping-Andersen's classical classification and 20 years since the invention of the concept of the East Asian welfare regime, but the variety of theories and classifications for the Japanese welfare state implied significant controversy. Hence, it was necessary to examine the classification of this controversial case using the latest data.

Second, the case selection for analysing East Asian welfare regimes was important, as this could impact the results of classification. All these theorists recognised Esping-Andersen's neglect of East Asian welfare systems, but few of them justified why a certain country can be included in the "East Asia welfare regime". The range of case selection diverged. Within ten major studies of the East Asian welfare model, South Korea has been included in nine studies, and Japan was included in seven out of ten studies. In addition to these countries, Taiwan, Singapore, and Hong Kong were also regarded as major members, while China and other Southeast Asian countries are not typical cases. The divergence of case selection showed that clear cut-off points and more rigid justification are required in typology research. Section 6.1 discusses the case selection issue further.

Last but not least, as mentioned above, Esping-Andersen's welfare regime approach mainly focused on social security and neglects the role of social services and healthcare. In the East Asian welfare regime debate, some scholars noticed this shortcoming and took healthcare into consideration. The inclusion of the healthcare system was more notable in recent studies and Japanese studies (e.g., Yang (2016) involved healthcare as one aspect in her fuzzy-set ideal type analysis; Kasza (2006) and Estévez-Abe (2008) also included the discussion on the Japanese healthcare system). Nevertheless, little research has addressed the healthcare system typology, which is covered in Chapter 4.

Chapter 4 Japan in Healthcare System Typologies

Chapters 2 and 3 review Esping-Andersen's welfare regime and intellectual attempts to explain the development of East Asian welfare systems with an emphasis on the Japanese case. In welfare regime analyses, the major focus was on cash benefits, and the healthcare system has received less attention (see Section 5.2 for relevant discussion). Comparative analysts of healthcare systems also developed classifications for healthcare systems around the world, which were different from the welfare regime literature mentioned above. Among these studies, the OECD (1987) classification of Beveridgean, Bismarckian, and private insurance models was one of the most important contributions. This chapter is devoted to reviewing these healthcare system typologies. To begin with, Section 4.1 provides the definitions of "healthcare system" and "health system". Section 4.2 examines various healthcare system typologies. Given that there was no dominant framework in the field, the review in the second section is organised chronologically. The cut-off point is 2000 in Section 4.2, since Moran (2000) was the first author who explicitly referred to wider welfare regime literature. After reviewing major healthcare system typologies, typologies proposed by the OECD are also included in Section 4.3. OECD typologies deserve attention because only member states are included in the typologies. Then, Section 4.4 reviews a few attempts to expand healthcare typologies to explain East Asian healthcare systems. It should be noted that some intellectual efforts have been invested into developing long-term care system typologies (e.g., Ariaans et al., 2021; Fischer et al., 2021), but this chapter only focuses on the healthcare system. Section 4.5 summarises major healthcare system typologies and note the potential for combining welfare regimes and healthcare systems.

4.1 Health System and Healthcare System

Similar to the term "welfare state", there was a variety in defining healthcare and health policy. Walt (1994) defined health policy as private and public organisations' actions

that influence “institutions, organisations, services, and funding arrangements of the health care system” (pp. 4-5). Following this definition, Exworthy and Powell (2011) suggested including both health (i.e., population’s health) and healthcare (i.e., institution and structure) in defining health policy. Blank and Burau (2007) differentiated between health policy, health care policy, and health care politics. Health policy was a broad term referring to government actions that can affect the health of the population. There was an overlap between health policy and other policy areas (e.g., social welfare and housing). Healthcare policy was a narrower concept, focusing on the financing and provision of healthcare services. Healthcare politics was more relevant to the actors and institutions in healthcare (p. 2). In healthcare system typology studies, scholars focused on concepts in the narrow realm of healthcare, but sometimes dimensions for the broader health system are used in constructing health system typologies. It was common that analysts considered concepts and variables in both the realm of the healthcare system and the broader health systems when constructing typologies. This tendency was particularly obvious in early healthcare system typologies. It should be noted that this thesis acknowledges the differences between healthcare and health but uses the term healthcare system typologies rather than health care typologies, as one of the research aims of this thesis is to examine the consistency between the Japanese healthcare system and welfare regime.

In order to study the complex reality, scholars compared different healthcare systems and developed typologies to reduce the empirical reality (de Carvalho et al., 2021; Wendt, 2018). As Wendt and his colleagues (2009) noted, ideal types were useful and valuable tools in comparative welfare state studies (p. 70) (see also Section 5.1).

4.2 Healthcare System Typologies: A Chronological Review

This section aims to provide a comprehensive review of healthcare system typology. This chronological review is divided into two parts. The first part (Section 4.2.1) focuses on

the early healthcare system typologies and their classification in Japan before 2000, while the second part (Section 4.2.2) addresses later classifications.

4.2.1 Before 2000

The classification of the Japanese healthcare system could be dated back to one of the earliest versions of healthcare system typologies in the 1960s. Romer (1960) proposed that healthcare systems could be classified into four groups based on the authority of the health department: free enterprise, social insurance, public assistance, and universal services. An example of free enterprise was the US, where the health department focused on preventive healthcare, while healthcare services were provided under private arrangements. Most Western European countries and Japan belonged to the social insurance group. The health department largely played a supervisory role in terms of funding management. The third mode, public assistance, mainly existed in less developed countries in Asia, Africa, and Latin America. In these countries, people received free healthcare services from governments as assistance, and the health department had authority over a wide range, including both curative and preventive services. Universal services could be found in communist countries, the UK, and New Zealand. The health department played a substantial role in the administration, but unlike the public assistance model, there were no means tests for the poor, and the quality and supply of healthcare services equalled or exceeded those in social insurance and free enterprise models.

Anderson (1963) indicated several criteria that could be used to classify healthcare systems: sources of funding, providers of health insurance, coverage, and the role of the government (p. 841). According to these standards, health service systems in European and American countries could be classified into two ideal types: private and public. In the private type, the provision of healthcare was based on market mechanisms, and there was no free service. On the contrary, in the public type, healthcare was tax-funded and universal, and the

government owned all facilities. The public type could be found in the USSR and the UK, but the private type did not exist in the real world.

Field (1973) also constructed a typology including pluralist, health insurance, health services, and socialised health care systems. In the pluralist model (e.g., the US), physicians enjoyed the largest autonomy. The ownership of facilities was varied. Health insurance was dominant in Western Europe and Japan. This mode resembled the pluralist with the exception of finance. The third parties had the major responsibility of managing the finances transferred to the service providers. In the health service model (e.g., the UK), healthcare facilities were usually nationalised, and doctors were paid by salary or according to capitation. In the socialised system, which mainly existed in socialist countries (i.e., the USSR and Eastern Europe), all facilities were owned by the state, and almost all physicians were employed. Health professionals enjoyed the least freedom in all four types of healthcare systems. In a later publication, Field (1980) added a fifth type (i.e., anomic). In this model, healthcare was a matter of personal consumption. Private ownership was prevalent, and the role of the polity was minimal. Economic transfer, perceptions of healthcare (i.e., definitions), and roles of physicians, professional associations, and state policy were different in five ideal types of healthcare systems (p. 401).

Similarly, Terris (1978) argued that health systems could be divided into three worlds according to their basic economic systems. Public assistance existed in pre-capitalist countries in Asia, Africa, and Latin America. Medical care was provided via governmental assistance to the poor. Facilities and hospitals were owned by the government. The quality of healthcare in the public assistance system was usually low. Health insurance was the dominant type in industrialised countries in Western Europe and North America. Health insurance varied in different countries: private insurance was major in some countries, while governmental insurance dominated in other countries. The coverage and financial sources of

health insurance were also divergent. The last type of healthcare system was the national health service, in which the coverage was universal, the whole healthcare system was funded by taxation, and doctors were employed by the government. This type of healthcare system mainly existed in socialist countries. Compared to previous typologies, Terris (1978) focused more on health systems rather than healthcare systems. Terris (1978) also went further and suggested future development: Cuba was an example of transferring itself from public assistance to the national health service, but most countries did not have a predictable future. In the health insurance groups, some transitions toward the national health service could be observed.

Frenk and Donabedian (1987) argued that previous typologies ignored the fact that the healthcare system in one country was usually mixed with various characteristics (e.g., Field, 1973; Roemer, 1960; Terris, 1978). Therefore, classifications based on countries missed the diversity within a healthcare system (p. 18). They proposed to use the form of state control and basis for eligibility to classify various healthcare modalities, which was a meso concept between the national healthcare system and specific healthcare programmes. There were four types of state control: concentrated ownership, dispersed ownership, concentrated financing, and dispersed financing. The eligibility could be based on citizenship, contribution, and poverty (p. 20). Combining two dimensions, there were twelve types of modalities in their typology. Although they did not explicitly state their case selection, the coverage of the typology was worldwide. In terms of Japan, they classified the National Health Insurance in Japan as a dispersed financing plus eligibility based on citizenship modality.

Roemer (1991) argued that the healthcare system in one country was determined by economic, political, and cultural factors (p. 83), but the cultural dimension was missing in the matrix of healthcare systems. According to the degree of economic development measured by gross national product (GNP), healthcare systems could be divided into industrialised/affluent,

developing/transitional, very poor, and resource-rich. In terms of the extent of political intervention in the market, there were four types: entrepreneurial/permissive, welfare-oriented, universal/comprehensive, and socialist/centrally planned (p. 97). In total, sixteen types of healthcare systems could be identified, and theoretically, the healthcare system in one specific country fell into one category. Japan was classified into welfare-oriented affluent/industrialised groups with West Germany and Canada.

Elling (1994) rejected Roemer's (1991) typology, which implied a convergence of healthcare systems (p. 288). Instead, Elling (1994) suggested a typology based on class struggle and the location in the capitalist world system. Most advanced industrialised countries fell into the core capitalist group and the core capitalist plus social welfare group. In the former, the labour movement was weak, and the healthcare system was more segmented and decentralised (e.g., the US, Germany). In the latter, there was a strong labour movement, and a regionalised national health service or national health insurance could be found (e.g., the UK, Canada, and Scandinavian countries). Also, disparities in the latter were less than in the former. Socialist countries were classified into a socialist-oriented group characterised by strong state control and centralisation. Other less developed socialist countries (e.g., China) belonged to the socialist-oriented and quasi-independent group, which had a strong worker and peasant movement and regionalised national health service systems. The rest of the countries were grouped as capitalist dependencies in (semi-)periphery. These countries usually had suppressed labour movements without general healthcare provisions (pp. 295-297). In addition, Elling (1994) argued that many previous typologies did not justify their case selection and use of the country due to the convenience or interests of the authors (p. 289). Interestingly, Elling (1994) might be the first typology to notice that the classification of Japan is problematic: Japan was obscure because it had a moderately strong labour movement but was mediated by the paternalism tradition. The comprehensive national health

insurance was developed largely based on the reaction to fascism after World War II (p. 295). This labour movement approach contradicted most analysts of East Asian welfare regimes, who maintained that the labour movement was relatively weak in Japan and East Asia (see Chapter 3).

Lassey et al. (1997) adopted a slightly different categorisation using the level of healthcare provision. They applied three criteria: the use of technology, resources measured by healthcare expenditure, and accessibility measured by coverage. Then, they classified thirteen countries into advanced, somewhat advanced, and less-developed healthcare systems. Japan was placed into the advanced cluster with high levels of technology and accessibility but a modest level of resources (p. 23).

	Typologies	Dimensions	Case selection	Japan
Roemer (1960)	(1) free enterprise; (2) social insurance (3) public assistance; (4) universal services	Administration	Worldwide	Social insurance
Andersen (1963)	private - public	Source of funds; coverage; provider; the role of the state	Europe & America	Not mentioned
Field (1973, 1980)	(1) anomic; (2) pluralist; (3) health insurance; (4) health services; (5) socialised	Definition; ownership; roles of state, physicians, and association; economic transfer	Worldwide	Health insurance (1973) Insurance/social security (1980)
Terris (1978)	(1) public assistance; (2) health insurance; (3) national health service	Economic system	Worldwide	Health insurance
Frenk and Donabedian (1987)	12 combinations concentrated/dispersed ownership/financing & citizenship, contribution, poverty	Control of the state (4) Eligibility (3)	Modality instead of individual country (Worldwide)	Citizenship + dispersed financing (Nation Health Insurance in Japan)
Roemer (1991)	16 combinations industrialised/affluent, developing/transitional, very poor, resource-rich & entrepreneurial/permissive, welfare-oriented, universal/comprehensive, socialist/centrally planned	Economic (GNP) Political (State intervention in the market) Cultural	Worldwide	Industrialised/affluent + welfare-oriented
Elling (1994)	(1) Core capitalist (2) Core capitalist, social welfare (3) Industrialised socialist-oriented (4) Capitalist dependencies in periphery and semi-periphery (5) Socialist-oriented, quasi-independent of world-system	Class struggle Location in the capitalist world-system	Worldwide	Core capitalist or core capitalist, social welfare due to moderate labor movements and a comprehensive national health insurance
Lassey et al. (1997)	Advanced, somewhat advanced, and less developed healthcare systems	Technology Resources Accessibility	Worldwide	Advanced, high technology and accessibility modest resources

Table 4.1 summarises major health or healthcare system typologies before 2000. A few features can be identified in these early typologies. Firstly, as mentioned above, the dimensions or concepts used to construct typologies are not limited to the narrower healthcare scope (i.e., the structure and institutions of the system). Hence, some of these typologies are health system typologies rather than healthcare system typologies. These typologies often involve concepts at macro levels, such as economic (e.g., GDP, economic

system), political (e.g., class struggle), and cultural. Secondly, regarding the methods to develop classification, qualitative case studies and “eyeballing” reviews are popular. None of them used statistical data and quantitative methods (e.g., cluster analysis) to support their typologies. Analysts usually started with creating typologies using the concepts they chose, and hybrid cases or archetypes were sometimes analysed in more detail. Thirdly, compared to welfare state typologies before Esping-Andersen, the case selection for these healthcare system typologies was wider. Choosing the US, Sweden, and the UK as three archetypes, Andersen (1963) is the only study focusing on Western countries. Field (1973) covered the USSR and Eastern Europe (i.e., socialist countries). Other typologies included both industrialised and developing countries in the world. Fourthly, although most early healthcare system typologies cover various healthcare systems in the world, similar to early welfare researchers, these healthcare typologies fail to pay enough attention to non-Western countries. Most typologies put Japan into the social insurance group but do not provide further explanation. In addition, some analysts also contributed to the debate between convergence (e.g., economic development) and divergence (e.g., politics and class struggle) in the development of healthcare systems.

4.2.2 After 2000

Moran (2000) was probably the first author to engage healthcare typologies with the broader welfare state research and explicitly referred to the welfare regime. He noted that healthcare was a significant component of the modern welfare state, and it was critical to understand the healthcare system in order to understand the broader welfare state. However, he pointed out that the tendency to consider healthcare a sub-system of the welfare state neglects other issues that were less notable in the welfare state but important in the healthcare system (Moran, 2000, p. 139). The criteria he suggested for classifying the “health care state” were consumption, provision, and technology. Based on these criteria, four families of health

care states could be identified. In entrenched command and control states, the state dominated consumption through tax and administration. Public ownership was common, and private provision was limited by the state. Although the state was unable to control the technology, there was strong gatekeeping for technology diffusion. The UK and Scandinavian countries belonged to this type. The second family of health care state was the supply state exemplified by the USA, where suppliers instead of consumers played more important roles. In corporatist health care states such as Germany, public institutions dominate consumption, and the state was a regulator of the provision and a third-party payer. The fourth type of health care state was the insecure command and control family. Its members were mainly Southern European countries (e.g., Italy, Spain). This type of health care state was similar to the first type in terms of state control. However, these countries were unable to develop entrenched control due to financial shortages and political structure. The result of these deficiencies was a lower degree of universalism than in Northern European health care states. Moran (2000) did not state his case selection clearly, but his classification was based on European countries and did not include Japan.

Burau and Blank (2006) argued that the OECD's (1987) typology (see relevant discussion in Section 4.3) provided a description of the internal characteristics but did not address the political and social factors that can shape the healthcare system. In addition, Burau and Blank (2006) analysed healthcare systems in nine countries using Moran's (2000) framework. They found four countries fitted Moran's (2000) ideal types: the UK and Sweden were entrenched command and control health care states, Germany was a corporatist health care state, and the US was a supply health care state. However, the other five healthcare systems (i.e., Australia, New Zealand, the Netherlands, Singapore, and Japan) illustrated a more complex picture and should be viewed as approximations of one of three ideal types identified by Moran (2000). Burau and Blank (2006) argued that Japan did not fully fit into

the corporatist healthcare state like its German counterparts. The Japanese political system concentrated authority at the central level. Billing and payment were centralised through the National Health Insurance, but the healthcare services and insurance plans remained segmented (p. 68). In terms of governance of provision and production (technology in Moran's (2000) framework), Japan was similar to Germany and belongs to the corporatist health care state where the public control of hospitals and constraints on medical innovation were moderate. The governance of consumption in Japan showed hybrid features: on the one hand, public access was de facto, which was a feature of corporatist health care states. On the other hand, the public control of financial cost was centralised, which was characterised by entrenched command and control health care states (Bureau and Blank, 2006, p. 69, Table 1).

Bambra (2005a) systematically connected Esping-Andersen's welfare regime approach with healthcare system typologies. She adopted Esping-Andersen's decommodification index to classify healthcare systems (see Section 5.2.4 for relevant discussion). Bambra (2005a) calculated the decommodification index of 18 OECD healthcare systems. Her results partially confirmed Esping-Andersen's classification: most social democratic welfare regimes and conservative welfare regimes cluster into two different groups. Japan, Austria, Belgium, France, Germany, Italy, the Netherlands, and Switzerland had medium levels of decommodification in healthcare. However, the UK, Canada, and New Zealand, which were liberal welfare regimes in Esping-Andersen's theory, showed more similarities with Norway in terms of healthcare decommodification. Bambra (2005a) also attached importance to taking healthcare systems into consideration when investigating the welfare state.

Although Bambra (2005a) explicitly bridged welfare regime and healthcare typology research, the concept of healthcare decommodification was too narrow (Wendt et al, 2009, p. 73). Wendt and his colleagues (2009) praised Moran's (2000) three criteria for their high

levels of generalisation but pointed out that Moran (2000) did not address non-state actors sufficiently in the healthcare system and the regulatory role of the state. In order to fill in these gaps, they suggested a theoretical framework with three aspects: finance, provision, and regulation. According to dominant actors (i.e., state, society, or private organisations) in these aspects, there were three ideal types: the state healthcare system, the societal healthcare system, and the private healthcare system. In these ideal types, the state, society, or the market dominated financing, provision, and regulation, respectively. In addition, Wendt et al. (2009) also constructed twenty-four mixed types in which different actors played a significant role in different dimensions.

Following this framework, Böhm et al. (2013) classified healthcare systems in OECD countries. They concluded that regulation played a leading role, which could exert influence on finance and provision. They constructed twenty-seven ideal types, but only six types were empirically existent: National Health Service, National Health Insurance, Social Health Service, Etatist Social Health Insurance, Private Health Insurance, and Social-based mixed-type. Japan and South Korea were classified into the Etatist Social Health Insurance model with state regulation, societal provision, and private financing (Böhm et al., 2013, p. 263). They were also the first groups of authors to include two East Asian countries and explained their rationale for classification among these healthcare typologies (i.e., other typologies either only included Japan or classified both Japan and South Korea without explanation). They noticed the divergence between South Korea and Japan due to the emergence of National Health Insurance in South Korea, but both countries shared a common feature that the provision, financing, and regulation of the healthcare system involved pluralist actors (p. 267).

Subsequently, in another publication by Wendt (2009), he used the following indicators: “healthcare expenditure, public-private mix of financing, healthcare provision,

entitlement to care, payment to doctors, patients' access to providers" (p. 441). The result of his cluster analysis was that European healthcare systems could be classified into three groups with some outliers. The first group was health service provision-oriented, which mainly consisted of Continental European countries. This type of healthcare system was characterised by high levels of public health expenditure and low levels of cost-sharing for patients. Both patients and doctors had the freedom to choose. The second type was universal coverage with limited access. The UK, Italy, and Sweden were members of this type. In these healthcare systems, private funding only played a minor role. Although the out-of-pocket payment of patients was extremely low, the choice and access of patients were limited to General Practitioners (GPs) and some specialists. The last type was low budget and restricted access, which meant that the public healthcare expenditure was low and private out-of-pocket payment was high. Furthermore, the access of patients was strongly regulated. Spain, Portugal, and Finland belonged to this type. Greece and the Netherlands were two outliers that could not be classified into any of these three types of healthcare systems.

To capture the changes in healthcare systems and include non-European countries, Wendt (2014) used cluster analysis to test several hypotheses and expand his typology to other parts of the world. He reached four types of healthcare systems and some outliers. The first type was similar to the universal coverage with limited access type. It mainly consisted of national health service systems in Europe, social insurance systems of post-communist countries, and the Netherlands. The second type included the national health service in Scandinavian countries and Southern European countries with low budgets and restricted access in Wendt's (2009) previous publications, but the concept of low budgets has been abandoned because both Spain and Portugal have increased their healthcare expenditure. The third type was close to Moran's (2000) insecure command and control health care state, but Israel and Turkey (and Greece in 2001) were members instead of Southern European

countries in Moran's (2000) typology. Most Continental European countries, Canada, Japan, and New Zealand fell into the fourth type (i.e., provision-oriented). South Korea, the US, Switzerland, and Norway were outliers.

Another attempt to connect decommodification in Esping-Andersen's welfare regime typology with healthcare classification was Reibling (2010) (see Section 5.2.4 for relevant discussion). She suggested four dimensions: conditions, disincentives, benefit levels, and universality (Reibling, 2010, pp. 8-9). Condition measured the eligibility criteria for income maintenance benefits. In healthcare, it was measured by the extent of gatekeeping in accessing healthcare. Disincentives were designed to reduce the benefits. The waiting days before receiving unemployment and sickness benefits were indicators of the disincentives for income maintenance benefits. For healthcare, Reibling (2010) argued that the waiting time for accessing healthcare services was not institutionalised as a disincentive for usage. Instead, financial mechanisms such as cost-sharing are better at capturing the disincentive. Benefits level in income maintenance could be measured by the replacement rate straightforwardly. Reibling (2010) suggested using the service packages covered by the healthcare system as the measurement for the benefit levels in healthcare systems, but due to a lack of data on the coverage. She used the availability of providers as an alternative measurement. The last dimension was universality, measured by the coverage of healthcare systems. Since most healthcare systems included in the analysis achieved universal coverage, this was not included in her analysis. The result of her cluster analysis of European healthcare systems was also four groups. The first cluster was financial incentive states, including Austria, Belgium, France, Sweden, and Switzerland, which depended on financial methods to restrain access. The opposite cluster was strong gatekeeping and low supply states, which consisted of Denmark, the Netherlands, Spain, and the UK. These countries were characterised by no cost-sharing but high levels of gatekeeping and low levels of healthcare supply. The third

cluster was weakly regulated and high supply states. Germany and Greece could be classified into this cluster because they had minor gatekeeping mechanisms and cost-sharing but a high density of doctors. The last type was mixing regulation, which had both gatekeeping and financial disincentive measures. Italy, Finland, and Portugal were examples.

European Union (2012) classified EU healthcare systems by decentralisation. It argued that previous typologies did not reflect both the degree of decentralisation and institutional management: in the same funding mode, the governance could be either decentralised or centralised, and most healthcare systems in the EU were a mixture of private and public payers/providers (p. 6). Therefore, classifications based on Beveridge/Bismarck and public/private were not sufficient. The EU (2012) suggested three criteria to measure decentralisation: funding, power, ownership, and management of facilities. According to degrees of decentralisation in these aspects, the EU (2012) reached a typology with five groups of countries. Different from most healthcare system typologies, the EU (2012) placed the UK, Germany, Italy, and Spain into one group characterised by high levels of decentralisation. In these countries, regional authorities had strong power in terms of legislation and management. The partially decentralised type includes Sweden, Finland, and Denmark, where regional authorities were responsible for some functions and management. The third type (i.e., operatively decentralised) mainly consisted of Eastern European countries. The central government played a leading role, but regional authorities had operational functions. France, Portugal, and the Netherlands belonged to the most centralised type. The central government was responsible for most affairs, and local authorities only had specific functions. In centralised types (e.g., Greece, Ireland), power and management were concentrated at the central level. Although the EU (2012) did not include Japan, the criteria they suggested could be applied to other parts of the world.

Toth (2016, 2020) adopted a different approach to classifying healthcare systems. He

criticised those previous typologies for narrowly focusing on mainstream healthcare schemes in one country, which resulted in oversimplification (Toth, 2016, p. 536). Toth (2016) proposed ten models of healthcare organisations based on financing and provision. Financing could be voluntary insurance, social insurance, residual programmes, compulsory national health insurance, and universalist programmes. Healthcare provision could be either integrated or separated. The main difference between them was whether the insurers and providers were separated or not (p. 539). Toth (2020) solely examined the degree of integration of OECD countries. He suggested five aspects: “1) insurer–provider integration; 2) primary and secondary care integration; 3) the presence or absence of gatekeeping mechanisms; 4) the greater or lesser freedom of patients in choosing their providers; 5) the solo or group practice of general practitioners” (p. 163). After setting criteria, they put twenty-four OECD countries in a continuum of integration indexes from highly integrated to highly segmented healthcare systems. The score of Japan was 1, which denoted a high degree of segmentation.

Reibling, Ariaans, and Wendt (2019) have pointed out that actors and institutions were the two main approaches in classifying healthcare systems. In order to integrate these two approaches, they chose different criteria from Reibling (2010) and Wendt (2014): supply, healthcare mix, access, orientation, and performance. The result of their quantitative cluster analysis on OECD countries was a typology with five categories. Austria, Germany, and France were located within the supply- and choice-oriented public systems, which had medium levels of financial and human resources and low levels of cost-sharing. The second type was the regulation-oriented public system. These healthcare systems had the strongest level of access regulation and mainly rely on public funding. Canada, the UK, and Italy were members of this type. Compared to other types, the low-supply and low-performance mixed systems (e.g., Estonia, Poland) had the lowest levels in all five criteria, while Switzerland and

the US were classified as supply- and performance oriented private systems with high supply and the significant role of private financing. The last type was the performance- and primary-care oriented public systems characterised by relatively high levels of performance and primary care orientation and intermediate levels of resources. Japan and South Korea, with Finland, Norway, and New Zealand, were categorised into these groups. However, Japan and South Korea were less consistent with other members of the same type.

One of the latest typologies could be found in Doetter et al. (2021). Their research focused on financing, provision, and regulation, which were probably drawn from Wendt et al. (2009) and Böhm et al. (2013). The main contribution of Doetter et al. (2021) was the inclusion of less developed countries. They argued for a robust comparative framework that did not narrowly concentrate on high-income countries (Doetter et al., 2021, p. 2). To fill this gap, they added a fourth actor (i.e., global). They also divided private finance into individual and collective. As a result, they reached a matrix with a total of eighty combinations of four/five actors (state, societal, private, and global for provision, regulation, and state, societal, private collective, private individual, and global for financing) in three aspects (i.e., financing, provision, and regulation) (p. 6). Nonetheless, Doetter et al. (2021) did not go further to classify specific countries using their framework.

Another recent classification generated via cluster analysis was Molla et al. (2021). They classified forty-three healthcare systems based on financing, provision, and outcomes. Interestingly, their results showed that a coherent cluster was absent across these dimensions. In terms of healthcare financing, Japan was classified with a number of countries, including Australia, Austria, France, Germany, and Norway, but Japan was classified with Austria, the Czech Republic, Luxembourg, and South Korea if only provision was considered. Regarding outcomes, Japan was classified with thirty-four other countries. Combining all dimensions, Japan was classified with Australia, Austria, Belgium, Canada, the Czech Republic, Denmark,

France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, New Zealand, Norway, South Korea, Sweden, Switzerland, the UK, and the US. These healthcare systems were characterised by low levels of out-of-pocket expenditure, high levels of Current health expenditure and government health expenditure. The healthcare resources were at high levels on average, but the values of different countries varied widely. Primary care was mainly organised in the private sector, but gatekeeping mechanisms differed. The health outcomes were also better than other clusters.

	Typologies	Criteria	Case selection	Method	Japan
Moran (2000)	(1) Command and control state; (2) Corporatist state; (3) Supply state; (4) Insecure command and control state	Consumption Provision Technology	Not mentioned (Western countries)	Case studies	N/A
Bambra (2005a)	3 Groups	Healthcare decommodification	Esping-Andersen's 18 nations	Index	Conservative
Burau and Blank (2006)	(1) Command and control state (2) Corporatist state (3) Supply state	Consumption Provision Production	UK, US, Japan, Singapore, Sweden, Germany, New Zealand, Netherlands, Australia	N/A	Corporatist state with the exception of centralised finance
Wendt et al. (2009)	3 ideal types plus 24 mixed types	Finance Provision Regulation	N/A	N/A	N/A
Wendt (2009)	(1) Health service provision-oriented (2) Universal coverage with limited access (3) Low budget and restricted access	Health expenditure, financing, privatisation, provision, entitlement, payment of doctors, access	15 European countries	Cluster analysis	N/A
Reibling (2010)	(1) Financial incentive states (2) Strong gate-keeping and low supply states (3) Weakly regulated and high supply state (4) Mixing regulation	Conditions, disincentives, benefit levels, universality	16 European countries	Cluster analysis	N/A
European Union (2012)	Decentralised, partially decentralised, operatively decentralised, mostly centralised, centralised	Decentralisation in funding; power; ownership; management of facilities	EU	N/A	N/A

(continued)

	Typologies	Criteria	Case selection	Method	Japan
Böhm et al. (2013)	(1) National Health Service; (2) National Health Insurance; (3) Social Health Service; (4) Etatist Social Health Insurance; (5) Private Health Insurance	Finance Provision Regulation	OECD	N/A	Etatist Social Health Insurance
Wendt (2014)	(1) Health service provision-oriented (2) Universal coverage - controlled access (3) Universal coverage – controlled supply (4) Low supply type	Health expenditure, financing, privatisation, provision, entitlement, payment of doctors, access	OECD	Cluster analysis	Health service provision-oriented
Toth (2016)	10 combinations Voluntary insurance, Social health insurance, Residual programs, Compulsory national health insurance, Universalist system & Integrated or separated	Financing (5) Provision (2)	Not mentioned (OECD countries)	N/A	N/A
Toth (2020)	Highly integrated systems, moderately integrated systems, mixed, moderately separated systems, highly separated systems	Provision	OECD 24	Index	Highly separated systems
Reibling et al. (2019)	(1)The supply- and choice-oriented public systems; (2) The performance- and primary-care-oriented public systems; (3) The regulation-oriented public systems; (4)The low-supply and low-performance mixed systems; (5) The supply- and performance-oriented private systems	Supply, public-private mix, access regulation, rimary care orientation, performance	OECD	Cluster analysis	The performance- and primary-care-oriented public systems
Doetter et al. (2021)	80 combinations	Actors in finance, provision, regulation	Global	N/A	N/A
Moolla et al (2021)	4 Combined types	Finance Provision Outcome	43 countries	Cluster analysis	Combined type 1

Table 4.2 summarises major health or healthcare system typologies since 2000.

Healthcare system typologies varied from criteria to case selection. Nevertheless, it was worthwhile to note some common features in these typologies. First, compared to previous classifications, almost all scholars were aware of the influence of the welfare regime approach, especially Esping-Andersen’s three worlds framework. They discussed welfare state typologies in either their literature reviews or analyses. Some scholars went further and explicitly referred to Esping-Andersen’s typologies. They re-interpreted some concepts (e.g., decommodification, the welfare mix) in Esping-Andersen’s welfare regime typology and applied them to classifying healthcare systems (see e.g., Bambra, 2005a; Reibling, 2010). Second, regarding methodological choice, some scholars used cluster analysis, which was

absent in previous typologies, while other scholars aimed at constructing ideal types or theoretical frameworks rather than classifying real countries. Compared to typologies before 2000, the typologies that emerged after 2000 were more explicit and systematic when demonstrating their methodology. Third, a common feature of these typologies was that most of them paid little attention to Japan. Six of the thirteen typologies listed here have covered Japan. For those typologies including Japan, they only provided limited explanations on their classification of Japan. Fourth, the justification of case selection was not fully developed in most typologies. The issue of case selection will be highlighted in Section 6.1.

4.3 OECD Healthcare System Typologies

Although there was no research like Esping-Andersen (1990) dominating the whole field in healthcare typology studies, the OECD's (1987) typology could be regarded as one of the most influential healthcare typologies because it identified the institutional characteristics of healthcare systems on the basis of funding and organisation of healthcare provision (Burau and Blank, 2006, p. 64). Given that the OECD's typologies always classify healthcare systems of its member states, this section focuses on the typologies proposed by the OECD. Another reason to discuss the OECD typologies separately was that these typologies are relatively independent of their counterparts mentioned above (i.e., the OECD typologies rarely cite other healthcare typologies).

The OECD (1987) suggested a typology based on “consumer sovereignty as compared with social equity models, the former being characterised by incentives, the latter by control” (p. 24). The healthcare systems of OECD countries could be characterised into three groups: the national health service model, the social insurance model, and the private insurance model. In the national health service (i.e., Beveridgean) model, universal coverage financed by the tax prevails. The state controlled and owned the production of healthcare. The UK and Italy were examples of the national health service model. In the social insurance

(i.e., Bismarckian) model, compulsory universal coverage was a part of the social security system. Financial sources of the healthcare system were the contributions of employers and employees. Both public and private ownership of production could be found in this model. France and Germany were examples of the social insurance model. The private insurance (i.e., consumer sovereignty) model was characterised by the employment-based or individual-purchase private healthcare scheme. The private ownership of the production dominated this model. The US was the archetype of the private insurance model. The OECD (1987) also noted the variety of healthcare systems. Regarding Japan, the OECD (1987) mentioned that “Japan has a compulsory national system that relies heavily on employer-based coverage” when explaining the diversities (p. 24). However, similar to early healthcare typologies reviewed above, the OECD (1987) did not discuss Japan in more detail.

The OECD (1992) adopted different criteria: financial sources and payment methods. This study only focused on seven Western European countries. The financial sources could be either voluntary or compulsory, and payment methods could be divided into “out-of-pocket by consumers without insurance; out-of-pocket by consumers, who were reimbursed from insurance; indirectly by third parties, via arms’ length contracts; and indirectly by third parties, via budgets and salaries within an integrated organisation” (p. 19). Combining these measurements, there were eight healthcare sub-systems. Considering that compulsory payment by consumers without any reimbursement rarely existed in reality, seven possible models could be identified. The voluntary out-of-pocket model was the simplest form where the patients directly paid the providers on a voluntary fee-for-service basis. This model was not sustainable because of its complete reliance on consumers’ payment ability, and it played a supporting role in seven OECD countries included in the study (pp. 20-21). In the voluntary insurance model, based on individual choices, patients purchase insurance, which could compensate patients for part or all of the medical bills. The insurers usually did not connect

with the providers. This model was conceived as conventional in America, but less common in European countries (pp. 21-22). Similarly, the public reimbursement model provided patients with reimbursement of medical bills. The major difference from the private model was that the patients had to contribute to insurance based on their income, and the poor could enjoy some subsidisation. French and Belgian healthcare systems were somewhat similar to this model (pp. 22-23). In the voluntary contract model, patients could choose to join private insurance, which contracted with the providers to supply healthcare completely or mainly free of charge for its members. In contrast, in the public contract model, financed by compulsory income-related contributions or tax, the insurers or funding bodies contracted with providers to supply health services to eligible patients. The public contract model was dominant in primary care in Germany, the UK, and Ireland (pp. 23-25). The private and public integrated models were similar to the contract models in terms of the existence of insurers, but in the integrated models, the insurers owned the provision of healthcare services. The voluntary version of the integrated model preserved the freedom to choose insurers but limited the choices of providers. This model was unable to protect vulnerable people and remained unpopular in Europe. The public integrated model was characterised by the absence of choice of insurers and providers. This model could be found in Spain and public hospitals in the UK (pp. 25-27). The OECD (1992) noted that all seven European countries were a mixture of these seven types of sub-systems, but one or two models were dominant in one country (p. 27).

More OECD countries were included, and there was more explanation of the Japanese healthcare system in the OECD's later publication. Similar to the Austrian and Luxembourgish, the Japanese healthcare system was funded by social insurance and had both public and private providers (OECD, 1994, p. 11). The principal method for providing all services was contracted in Japan (p. 13). Although the OECD (1994) did not directly classify

Japan, it was very likely that Japan was a mixture of public and private contract models based on the ideal types.

Subsequently, the OECD (2004) suggested four criteria for classifying health insurance systems: financial sources; compulsory or voluntary; group or individual; and calculation methods of the insurance fee. Health insurance could be financed publicly (i.e., general taxation or social security contributions) and privately. In terms of the level of compulsion, participation in health insurance could be divided into four categories: mandatory participation in a single scheme; compulsory participation with freedom to choose various schemes; participation based on employment; and voluntary participation. Health insurance could be group-based or individual-based. The former usually covered the employees in a specific company, while the latter was mainly purchased by individuals. Regarding the calculation methods of health insurance premiums, income-related, group-based (i.e., fee calculation according to the average risk of the group), and risk-related were three main approaches (pp. 8-11). Grouping all these criteria, health insurance could be either public or private. Public health insurance could be tax-based or a part of social security. Private health insurance could be mandatory, group-based, employment-based, or risk-related (p. 11). The OECD (2004) stated that health insurance mixes existed in OECD countries. In addition to the public-private mix, there were other dimensions, such as the compulsory-voluntary mix. At the end of the paper, the OECD (2004) noted that five important aspects of health insurance were not included in the typology: management of the insurance; competition between insurers; the relationship between insurers and providers; tax subsidies; other regulations that could influence cost-sharing of health insurance (e.g., minimal benefit) (p. 14). The OECD's (2004) typology focused on identifying criteria and possible models rather than classifying countries. Therefore, how to classify Japanese health insurance was not mentioned in this paper.

The latest typology was offered by the OECD (2011), which was the first OECD healthcare typology applying cluster analysis. It went beyond traditional approaches using financing and insurance models as criteria. The major standard to classify the health system was service provision, which could be broadly divided into two groups: provision relying on private (i.e., market mechanisms) and public provision. On the one hand, in the private provision model, basic coverage was provided either by private or public insurance. Private insurance for basic coverage was common in Germany, the Netherlands, and Switzerland. Among health systems where basic coverage was achieved by public insurance, Australia, Canada, and France had private insurance outside the basic coverage and gatekeeping, while Japan, South Korea, and Austria had less private insurance beyond the basic coverage and no gatekeeping. On the other hand, in the public provision model, there was no gatekeeping, and patients had a large degree of freedom to choose providers in Iceland and Sweden. In those public provision models with gatekeeping, Denmark, Spain, and Finland had limited patient choices with soft budget control, while users had more choices with strict budgets in the UK, Norway, Ireland, and Italy.

Given that the OECD (1994) was a complement of the OECD (1992), these two publications could be conceived as one typology. Table 4.3 provides a summary of these typologies proposed by the OECD. The Bismarck and Beveridge division in the OECD (1987) was often cited by other scholars, while other typologies were less popular. There were two main themes in these classifications. The first was the funding of healthcare systems. In four typologies, the OECD (1992, 1994) focused on finance and payments. On the basis of the OECD (1992, 1994), the OECD (2004) added the calculation method for the premiums. In contrast, the OECD (1987) focused on the degree of patient choice, which was also a sub-criterion in the OECD (2011), but the OECD (2011) concentrated on the output of healthcare systems.

Number of category	Typologies	Criteria	Japan
OECD (1987): 3	Social insurance (Bismarckian); National health service (Beveridgean); Private insurance	Consumer sovereignty versus social equity	National system funded by employee/employer contribution
OECD (1992, 1994): 8	Voluntary/compulsory Out-of-pocket (with or without compensation)/indirected by third parties (via contract or budget)	Financial sources and payment method	Social insurance contracted
OECD (2004): 6	Public: tax-based or social insurance Private: mandatory; group; employment; risk	Financial sources; compulsory or voluntary; group or individual; calculation methods	Not mentioned
OECD (2011): 6	Public (no gate-keeping; gate-keeping with strict or soft budgets) Private (private basic coverage; public basic coverage with or without private schemes outside basic coverage)	Provision (sub-criteria: patient choice)	Private provision: public basic coverage with less private insurance and no gate-keeping beyond the basic coverage

Although none of these OECD typologies have referred to previous typologies proposed by comparative healthcare analysts reviewed in the last section, they shared some similarities when comparing the OECD's classifications with their counterparts. Financial sources and the ownership of the service provision were widely used in classifying healthcare systems. It seems that the OECD (1987) adopted the approach used in earlier healthcare system typologies (i.e., the division between universal, social insurance, and private models). However, in the later publications, the OECD developed more sophisticated typologies and attempted to capture different dimensions of healthcare systems. In addition, none of these OECD typologies explicitly referred to the welfare regime literature. Regarding the Japanese healthcare system, given that Japan joined the OECD in 1964, the explanation in OECD's publications was more detailed than other healthcare system typologies. Some OECD publications mentioned in this section examined healthcare reforms in Japan. Nevertheless, Japan was not given special attention in terms of classification.

4.4 The Classifications of East Asian Healthcare Systems

In the welfare regime literature, East Asian welfare systems triggered numerous debates on their classifications. However, in the realm of healthcare system typologies, scholars did not pay special attention to East Asian healthcare systems. In the healthcare system typologies mentioned above, East Asian healthcare systems (i.e., Japan and South Korea) were analysed with other countries (mainly Western). Nevertheless, a few studies attempted to engage with the classifications of East Asian healthcare systems. Scholars who were interested in East Asian healthcare systems can be divided into two groups. The first group mainly consisted of advocates of the East Asian welfare model (see Section 3.1). Given that healthcare was an important aspect of the welfare state, East Asian welfare regime analysts have dedicated efforts to East Asian healthcare systems as a part of their arguments. Nonetheless, the major focus was the income maintenance of the welfare state (e.g., pension) rather than service provision (e.g., healthcare). The explanations of East Asian healthcare systems usually appeared in segmented and piecemeal ways in the analyses of East Asian welfare regimes. For example, Holliday (2000) noticed that the coverage of health insurance in Japan is universal, which was beyond the productive elements. He argued that these extensions were very limited (pp. 711-712). However, there was no further explanation of whether the Japanese healthcare system fitted the productive thesis. There was a lack of systematic evaluations of healthcare systems in the context of productivism.

Nevertheless, Aspalter (2012), one of the advocates of the East Asia welfare model, systematically discussed and compared healthcare systems in East Asia. He argued that East Asian healthcare systems “have developed their own model of pairing effectiveness and efficiency” (p. 186). A prominent feature shared by these East Asian healthcare systems was high levels of outcomes with relatively low levels of healthcare spending. This corresponded to the ideal type of “pro-welfare conservative welfare regime” in East Asia (Aspalter, 2006,

2011, 2023; see also Chapter 3 for relevant discussion). Other similarities included high levels of preventive policies, traditional medicines as a supplement to reinforce the preventive role, and strong control of the state with the existence of private service provision (Aspalter, 2012, p. 187). Regarding Japan, Aspalter (2012) found the pattern of private provision of public services in Japan, South Korea, Taiwan, and Singapore. He also acknowledged recent similar developments in the UK, France, Italy, and Germany. Although he did not explicitly classify Japan, it seemed that Japan was seen as a member of the East Asian healthcare model.

The second group of scholars tended to question the existence of the East Asian healthcare model. Although the number of studies was very limited, their contributions were mainly an extension of the continuous debate on the East Asian welfare model. For instance, Yu (2012) constructed two healthcare system typologies based on the decommodification developed by Bambra (2005a). One typology has applied Esping-Andersen's index-based classification, while the others were generated from cluster analysis. Covering eighteen OECD countries, including Japan, plus four Asia Tiger Economies, both typologies in Yu (2012) did not support a homogenous East Asian healthcare model. In the index-based typology, the healthcare system in Hong Kong had the highest degree of decommodification, while other healthcare systems were at medium levels (p. 120). The result of the cluster analysis was that five healthcare systems were classified into different groups (p. 118). The study of Yu (2012) also confirmed Kasza's (2006) argument on the inconsistency between different policy sectors of the welfare state.

S. Yu (2014) and W. K. Yu (2014) tested the internal homogeneity and the external heterogeneity of East Asian healthcare systems using cluster analysis. S. Yu (2014) conducted cluster analysis using the health index constructed by Bambra (2005a) and found that Japan, South Korea, and Taiwan were in the same cluster, while Hong Kong was in a different group.

He also compared the healthcare outcomes measured by infant mortality rate and life expectancy and argued that the healthcare system in Hong Kong has achieved better performance than the healthcare systems in South Korea and Taiwan (W. K. Yu, 2014, p. 232). In addition to OECD countries and four Asian tigers, S. Yu (2014) added Thailand and Malaysia to the analysis. The result of the cluster analysis using data in 1998 did not support the internal homogeneity and external heterogeneity, which meant that the six East Asian healthcare systems did not resemble each other and did not differ from their Western counterparts (p. 101). If Malaysia and Thailand were excluded, which were less frequently considered members of the East Asian welfare model, the Japanese and South Korean healthcare systems were located in a different cluster from the other healthcare systems in East Asia.

Lee et al. (2008) did not use quantitative methods to contribute to the healthcare system typology. They argued that OECD's (1987, 2004) and Roemers' (1991) typologies with national health service, social health insurance, and private insurance models did not reflect the role of the state. Lee et al. (2008) suggested classifications of healthcare systems according to provision and financing administration. The national health service model was characterised by centralised financing administration and public provision of healthcare services. The social health insurance model has decentralised financing and public provision, while the liberal model has dispersed administration and private provision (p. 109). They argued that healthcare systems in South Korea and Taiwan could not be classified into any type in the OECD's trichotomy. They suggested a new type called national health insurance, in which financing was concentratedly managed, and provision was private. South Korea and Taiwan were archetypes of the national health insurance model (p. 111). Interestingly, Lee et al. (2008) regarded Japan as a hybrid of national health insurance and social health insurance because the Japanese government played a stronger role in the intervention and regulation of

healthcare provision when compared to classical social health insurance countries (pp. 111-112).

	Typologies	Dimensions	Case selection	Japan
Aspalter (2012)	East Asian healthcare model	Input, output, efficiency	Global	N/A (East Asian healthcare model)
Lee et al. (2008)	(1) Social Health Insurance; (2) National Health Service; (3) Private health insurance; (4) National Health Insurance	Financing administration, provision	Taiwan and South Korea (as archtypes of National Health Insurance)	Hybrid of National Health Insurance and Social Health Insurance
S. Yu (2012) S. Yu (2014) W. K. Yu (2014)	N/A (test the East Asian welfare model from the perspective of healthcare)	Health decommodification	Esping-Andersen's 18 countries + several East Asian healthcare systems	The East Asian welfare model does not exist

In short, although only a limited number of authors compared East Asian healthcare systems within the framework of healthcare system typology (see Table 4.4), it seemed that East Asian healthcare systems were more diverse than supporters of the East Asian welfare regime claimed. The research in East Asian healthcare systems showed more differences than similarities, especially when more healthcare systems in the region were included. If only two of the most advanced economies in East Asia (i.e., Japan and South Korea) were considered, it seemed that the East Asian welfare model was convincing to some extent in terms of healthcare systems. However, if four Asian tigers were added, as most advocates of the East Asian welfare model did, there would be less commonality within the region.

4.5 Summary

This chapter has reviewed healthcare system typologies and how comparative healthcare system analysts classified the Japanese healthcare system. Although there was a lack of a dominant framework, such as Esping-Andersen's three worlds of welfare regimes in the field, we could highlight some of the representative classifications. First, the OECD's

(1987) typology, based on a continuum of consumer choice and social equity, has been cited by many researchers. This typology not only captured the internal mechanisms of a healthcare system (e.g., financing and provision) but also reflected their origins (Burau and Blank, 2006, p. 65). However, OECD (1987) was criticised for its confusion of ideal types and real types (see Section 5.1 for relevant discussion), which resulted in over-simplification (e.g., national health service systems in Southern European countries were different from the British and Nordic) (Wendt, 2018). Second, as proposed by Wendt and his colleagues (2009), three dimensions (finance, provision, and regulation) in classifying healthcare systems have been widely adopted by many scholars (see Table 4.2). Third, some authors attempted to build connections between welfare regime typologies and healthcare system typologies, which will be discussed in the next chapter.

Similar to “welfare modelling business” (Abrahamson, 1999), a healthcare system modelling business could be identified. There were two main approaches to classifying healthcare systems: one emphasised actors, institutions, and the mode of governance, while the other focused on the internal mechanisms (i.e., how the healthcare system works) (Wendt, 2018). de Carvalho et al. (2020) reviewed 42 healthcare system typologies and found that most typologies used financing, provision, and regulation as criteria. In terms of financing, scholars were mostly interested in the mix of financing the healthcare system. Concerning provision, the most referred criterion is ownership. State intervention, coverage, and eligibility were the most used measurements in the regulation category (p. 290). Combining all these features identified by scholars, we could find that sometimes, typologies only focused on the healthcare system itself. In contrast, healthcare systems could also be analysed with reference to the broader context of health politics since the actors and institutions mattered (i.e., classifying health systems rather than healthcare systems).

There were several issues that needed to be highlighted in healthcare system typology

studies. First, regarding the research philosophy and the logic behind various classifications, most scholars referred to the distinction between ideal types and real types, which deserved more attention (see Section 5.1). Second, it seemed that few researchers have focused on the method that they used in classifying healthcare systems. In healthcare system typologies, especially in the earlier stage, there was a tendency to rely on “eyeballing” the selection of cases and summary of the characteristics of different types of healthcare systems. Quantitative methods such as cluster analysis only emerged after 2000. Third, most typologies were designed to develop theoretical frameworks or ideal types. Therefore, they were less sensitive to capture changes and healthcare system reforms. To fill this gap, comparative research is needed. Fourth, case selection issues in healthcare system typologies need to be highlighted (see Section 6.1). Finally, related to the previous point, although healthcare system typologies started with a global perspective, they remained at a superficial level (e.g., eyeballing special cases). The cases from East Asia posed challenges to typologies mainly based on Western countries (Burau et al., 2015, p. 105). In the typologies mentioned above, although Japan was sometimes included, it was placed in a marginal position without detailed explanations.

From previous chapters, we could find that most scholars have concentrated on either the welfare state or the healthcare system, and there was limited interaction between the two streams of theories (see Section 5.2). In addition, Chapter 6 will highlight the case selection and criteria selection, which are common issues existing in both welfare regime typologies and healthcare system typologies.

Chapter 5 Theoretical Issues in the Welfare/Healthcare Modelling Business

Previous chapters have reviewed various welfare regime typologies and healthcare system typologies. These classifications were widely accepted and used by scholars as tools in comparative study. Nonetheless, most studies reviewed above focused on classifications and typologies, and there was little discussion about the theoretical bases of welfare regimes and healthcare system typologies. In this thesis, there are two significant theoretical concepts, which are less salient in the existing welfare/healthcare modelling business. The first theoretical issue is the difference between ideal types and real types, which represents two different research approaches in the welfare/healthcare modelling business. Section 5.1 reviews these two concepts and the ideal typical and real typical approaches in welfare regime analyses and healthcare system typologies. The second theoretical issue is elective affinity, although this concept is used to describe the connection between production regimes and welfare regimes in the existing welfare regime literature. For the sake of the research objectives in this thesis, Section 5.2 reviews the concept of elective affinity and uses it to link the welfare regime typologies and healthcare system typologies. As a summary, Section 5.3 demonstrates the importance of these two theoretical issues and their roles in this thesis.

5.1 Ideal Types and Real Types

Although the research philosophy was not salient in the welfare modelling business and healthcare system typologies (see Section 7.1), the distinction between ideal types and real types was a significant theoretical issue and deserved more explanation. Though the use of ideal types was rooted in sociology, it was sometimes used as a qualitative method in other fields, such as psychology (e.g., Stapley et al., 2022). Some discussions about the use of ideal types and differences between ideal types and real types could also be found in sociology and general social science (e.g., Diesing, 1971; Torr, 2008). In the realm of welfare regime typologies, before the publication of the well-known classification in 1990, Esping-Andersen

wrote that the goal of regime analysis “is not to provide exhaustive comparisons across either time or societies, but rather to identify ‘ideal-typical’ cases (in the Weberian sense)” (Esping-Andersen, 1987, p. 7). In order to review this important theoretical tradition of welfare modelling business, Section 5.1.1 starts with Max Weber’s invention of the concept of ideal type, and then Section 5.1.2 reviews how this concept is applied in comparative social policy and welfare state research. Section 5.1.3 reviews how the concept of ideal type is interpreted by comparative healthcare system analysts. Finally, Section 5.1.4 concludes by clarifying the confusion between the ideal typical and real typical approaches in the welfare/healthcare modelling business.

5.1.1 The Origin of Ideal Type and Real Type

The concept of ideal type was first developed by sociologist Max Weber. For Weber, ideal types were tools for us to understand society and human activities. In his essay “*Objectivity*” in *Social Science and Social Policy*, after arguing for objectivity in social sciences, he highlighted the use of ideal types in social science research. Weber’s (1904/1949) definition of ideal type was:

one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasised viewpoints into a unified analytical construct (p. 90).

In other words, ideal types were analytical tools that are epitomised by various phenomena. Therefore, an ideal type “is not a description of reality but aims to give unambiguous means of expression to such a description” (Weber, 1904/1949, p. 90). This meant that an ideal type was not equal to a reproduction of the empirical world. The main

criterion to measure the validity and usefulness of an ideal type was whether it offered an adequate explanation. According to Weber, ideal types themselves were not hypotheses but were helpful in developing hypotheses. Researchers were able to construct ideal types by identifying essential elements of their research objects, which were usually in an unclear and confused state.

Engerman (2000) pointed out that ideal types were important analytical tools, and ideal types highlighted the features that were central to the research and omitted less relevant elements (p. 258). As analytical tools, ideal types did not seek to “provide an exhaustive description of empirical reality nor to introduce general laws or theories. Furthermore, they never seek to conceptualise overarching differentiation, universalisation, or grand-scale evolutionary processes” (Kalberg, 2012, p. 122). These features of ideal types also facilitated their role in comparative analysis, as ideal types involved subjective meaning and were able to “succinctly capture essences, [and] differences across major empirical groups” (Kalberg, 2012, p. 123). As one of the core concepts in Max Weber’s theory of objectivity, ideal types had a significant influence on social sciences.

However, real types were not mentioned in Max Weber’s essay. According to Engerman (2000), the concept of real type was proposed by German economist Arthur Spiethoff. Spiethoff (1952) distinguished three types of economic knowledge: non-historical theory, historical theory, and economic history. The historical theory could be further divided into pure theory using ideal types and economic Gestalt theory using real types (p. 134). A real type included “an intention to capture all of reality, and not just part of it” (Engerman, 2000, p. 258). In other words, a real type referred to “a general statement of what phenomena really occurred regularly together with a causal connection between them” (Lane, 1956, as cited in Engerman, 2000, p. 258). Although there was little discussion on real types in social science research, it seemed that real type and ideal type were two distinct approaches and

needed to be considered separately (Engerman, 2000).

5.1.2 Ideal Type and Real Type in Welfare Regime Analysis

Esping-Andersen (1999) perceived his classification of liberal, conservative, and social democratic welfare regimes as ideal types:

We cannot capture such complexity via quantitative research, and it is even doubtful whether a qualitative study could do substantially better. Still, there is a distant, second-best solution. Throughout this book, I have developed the analysis around distinct regimes which, I argue, encapsulate a set of distinct institutional characteristics. They are “ideal types” in the sense that no individual nation fits the bill perfectly. But a similarity of “logic”, of basic attributes, among societies suggests a considerable degree of clustering around our ideal typical models (p. 138).

Although Esping-Andersen (1999) claimed that his framework was ideal typical, he also classified countries, which was a real typical question. It seemed that there was still confusion between two approaches in Esping-Andersen’s (1990, 1999) analysis: on the one hand, the construction of three welfare regimes was ideal typical, as they were pure ideal types and did not exist in reality; on the other hand, his attempt to assign decommodification and stratification scores to countries to classify them was addressing a real typical question.

In fact, the distinction between ideal types and real types was not noted by scholars until recent years in the areas of welfare regime typologies and healthcare system typologies. For instance, Arts and Gelissen (2002) distinguished between the “pure” ideal type and the “impure” real type when interpreting Esping-Andersen’s classification. Recognising two different types enabled comparison using ideal types as analytical and conceptual tools (p. 140). The ideal types of welfare state (i.e., liberal, conservative, and social democratic

welfare regimes constructed by Esping-Andersen) represented different logics of development, but the impure form existed in the real world (p. 139). For Arts and Gelissen (2002), ideal types were categories such as liberal, conservative, and social democratic welfare regimes, while real types consisted of welfare states existing in the world (p. 148). Another research that involved ideal types and real types is Arcanjo (2006). It seemed that Arcanjo (2006) considered the theoretical construction of welfare regimes as ideal types, and real typical research aimed to classify welfare states empirically. However, both Arts and Gelissen (2002) and Arcanjo (2006) did not explain further the difference between ideal types and real types.

Van Kersbergen and Vis (2015) also developed their account of ideal types with reference to Kuhn's concept of normal science. They argued that the typological approach was different from ideal typical approaches. Typologies were devices for classification and aimed at managing the complex reality into an ordered status that we could understand (p. 116). In typologies, a case could be placed within a certain category. In contrast, the main concern was the fitness of a given case to the theoretical framework (p. 117). They stated that welfare regime research tended to confuse these two different types of approaches. The confusion attributed the difficulties of classifying cases to the obvious fact that no case fitted ideal types. Hence, hampers further investigation of hybrid cases (p. 118). Although different terms were used in van Kersbergen and Vis (2015), it seemed that the "typological approach" here was similar to the real typical approach, which focused on classifying cases.

In contrast, Christian Aspalter systematically addressed the issue of real types and ideal types in a different approach from previous scholars. Aspalter (2011) distinguished between ideal typical and real typical approaches in welfare regime study: the former focused on the big picture and adopted a broader international comparison in a long-term perspective, while the latter concentrated on detailed pictures and short-term changes in welfare systems

(p. 736). Later, following this approach to distinguish ideal types and real types, Aspalter (2019, 2022) explained these differences with reference to Weber. On the one hand, the ideal typical approach was based on Max Weber's theory. This approach emphasised "average features of each regime cluster, it is used as a 'yardstick' to facilitate broad cross-national comparisons; as a consequence, minor and some major differences are omitted for the sake of better clarity on the 'macro cross-national' level" (Aspalter, 2019, p. 83, Table 1). The ideal typical approach could include more cases in analysis and was able to provide a big picture and starting points for real typical analysis. As the ideal typical approach focused on the larger picture, it inevitably lost its capacity to capture details and national contexts. Therefore, some countries or policy areas were missing or did not fit into any ideal types. On the other hand, based on researchers' own methods, the real typical approach paid more attention to "the reality of welfare state institutions, their similarities and differences across nations; hereby researchers focus on the detail, on institutional differences rather than their similarities, for better clarity on 'micro cross-national' level" (Aspalter, 2019, p. 83, Table 1). Compared to the ideal typical approach, the real typical approach could be used to capture details and national contexts. The real typical approach could also be applied when researchers need to examine specific institutions and mechanisms. In-depth analysis and greater clarity could be achieved with real typical approaches. In exchange for depth and clarity, real typical approaches inevitably sacrificed the ability to depict bigger landscapes of welfare states. As a consequence, sometimes international similarities and differences were omitted in the real typical analysis. Since real typical analysis focused on short-term changes and lacked strong theoretical support, welfare regimes created by this approach were usually not stable and were easily changeable due to reforms. It should be noted that, according to Aspalter (2021), "ideal" did not mean perfect, while "real" did not mean factual (p. 80). The words "ideal" and "real" simply implied whether researchers adopted Weber's ideal type.

Höppner (2025) suggested that distinguishing between ideal typical and real typical approaches based on whether they originated from theories is confusing (p. 574). According to Höppner (2025), the theoretical foundation of ideal types and real types was a more precise criterion to differentiate between the two approaches. Ideal types were theoretical, and constructing a typology based on the ideal typical approach was a gradual process. In contrast, the aim of real typical typologies was to group cases based on their characteristics. Therefore, the process was categorical. Internal homogeneity and external heterogeneity were relevant to real typical typologies. Nonetheless, the dimensions or theoretical foundations of real typical typologies could be either theoretical (i.e., conceptual real types) or empirical (i.e., purely empirical real types).

In summary, two major ways to interpret ideal types and real types could be spotted: on the one hand, a group of scholars (e.g., Arcanjo, 2006; Arts & Gelissen, 2002; Höppner, 2025; van Kersbergen & Vis, 2015) tended to differentiate between two concepts based on their aims, which was either to develop a theoretical framework or to classify existing welfare systems empirically; on the other hand, Aspalter (2019, 2021) distinguished them according to the level of analysis (i.e., the real typical approach focused on details, while the ideal typical approach emphasised the big picture).

5.1.3 Ideal Type and Real Type in Healthcare System Typologies

In the field of healthcare system typologies, there was little discussion on the difference between ideal types and real types. Following Weber, Burau and Blank (2006) regarded the concept of healthcare states as ideal types, which aimed at simplifying the various forms of governance of healthcare. Therefore, its usefulness would not be influenced by the situation that no real healthcare system fitted these ideal typical healthcare states (pp. 70-71).

Wendt and his colleagues (2009) pointed out the differences between the two

approaches. For Wendt and his colleagues (2009), the ideal typical approach was similar to the construction of conceptual frameworks for classification. Ideal types could be used as frameworks to group healthcare systems (i.e., real types). It could also be used to identify similarities and differences among various healthcare systems and to analyse changes and reforms in healthcare systems. Furthermore, institutional effects on different healthcare systems could be examined in a detailed way (Wendt, 2020). Although Wendt did not explain the differences between ideal typical and real typical approaches in healthcare system typologies in detail, it seemed that constructing theoretical frameworks for classification was an ideal typical approach, while classifying the real healthcare system empirically was a real typical approach.

In the review of limitations of healthcare system typologies, Freeman and Frisina (2010) noted that Weber's concept of ideal type was practical and analytic. Ideal type in Weber's sense was not normative but "was intended to explicate both social structures and patterns of meaningful social action and, more specifically, the relationship between the two" (Freeman & Frisina, 2010, p. 166). Hence, the ideal type was not only institutional but also a culture formation, implying that our world was shaped by our understandings. Policymakers were concerned with a specific type of healthcare system that they aimed to establish, especially in Southern Europe in the 1980s and Eastern Europe in the 1990s (p. 174).

5.1.4 Clarifying the Confusion between the Two Approaches

From what has been mentioned above, most researchers highlighted the ideal typical aspect of welfare regime analyses. A few analysts compared ideal types and real types in the context of welfare regime typologies and healthcare system typologies. Nonetheless, as Höppner (2025) noted, the use of ideal types and real types remains ambiguous. Taking existing discussions into account, Table 5.1 summarises the features of ideal typical and real typical approaches in the welfare modelling business.

Table 5.1: Ideal Typical and Real Typical Approaches in the Welfare/Healthcare Modelling Business		
	Ideal types	Real types
Foundations	Theoretical	Empirical
Definitions	A type with features abstracted from cases	A type including cases
Focus	Common features (Characteristics shared by cases)	Classification (Similarities and differences between cases)
Types	Pure (not existent)	Real (existent)
Exemplification	Cluster centre	Cluster and its members
How to evaluate the goodness of fit	Compare a given case to the theoretical case	Compare a given case to other cases in the same cluster
Hybrids	Cases that do not share enough similarities with any theoretical case	Cases that do not share enough similarities with other cases in any given group

One of the most common characteristics of an ideal type mentioned by scholars was that there was no need to find a corresponding real case to the theoretically constructed ideal type. Following Aspalter (2019, 2022), Wendt et al. (2009), and Wendt (2020), from the literature mentioned in previous chapters, ideal typical methods in classification were used to construct theoretical frameworks as yardsticks. The focus of ideal typical approaches was to identify common features that could be abstracted from a group of cases. In contrast, most current literature classifying various welfare states and healthcare systems applied a real typical approach. The foundations for these classifications were empirical (van Kersbergen & Vis, 2015). Real typical approaches focused on cases that existed in reality and classified them based on their similarities and differences. In addition to typology, research that compared social security systems in different countries was an example of the real typical approach (Aspalter, 2019).

Following Table 5.1, most existing literature involved real types and ideal types, as it was natural to consider the commonalities of a specific group (i.e., ideal typical) after

classifying welfare systems and healthcare systems (i.e., real typical). Most scholars agreed that Esping-Andersen's (1990) typology was ideal typical (see Arcanjo, 2006; Arts & Gelissen, 2002; Aspalter, 2022; Wendt et al., 2009). Nonetheless, there were also real typical elements in the three worlds, since attempts have been made to classify welfare states in reality (van Kersbergen and Vis, 2015). This led to different interpretations of whether Esping-Andersen's (1990, 1999) welfare regimes were ideal types or real types. On the one hand, these categories of welfare regimes (i.e., liberal, conservative, and social democratic) could be used as ideal types when referring to a type of theoretical welfare state. For example, an ideal type of liberal welfare regime was characterised by a strong role of the market and the prevalence of means-tested social security programmes. In reality, a purely liberal welfare regime did not exist (i.e., ideal). On the other hand, these welfare regimes could also be used as real types when referring to a group of welfare states sharing similar institutional arrangements. For instance, liberal welfare regimes could refer to a group of Anglo-Saxon welfare states with relatively low levels of de commodification. Another example of the ideal typical welfare regime analysis was Wood and Gough (2006), in which welfare states around the world could be divided into three ideal types (i.e., welfare state regime, informal security regime, and insecurity regime). Aspalter (2022) also identified his own creation of ten worlds of welfare regimes as ideal types (cf. Aspalter, 2023). In healthcare system typologies, for instance, the early typology proposed by the OECD (1987) and the four types of healthcare state developed by Moran (2000) are ideal typical (Burau & Blank, 2006).

According to Aspalter (2022), the lesson we should learn from distinguishing between ideal typical and real typical approaches was that it was essential “*to keep a Chinese Wall between them*. Each side could acknowledge the existence of, and learn from, the other - but one could not compare one's findings on a one-to-one basis with the findings of the other” (p. 80). In other words, the result generated by real typical classification could not be used to

support or falsify an ideal typical construction. In addition, Aspalter (2022) revealed that ideal types and real types were two different methods based on different methodologies. It was helpful and useful to distinguish between the two different methodological approaches for classification. Hence, their results could not be interpreted interchangeably. For example, a classification placing Japan with Germany, Austria, Belgium, etc., and grouping them together was constructing a real type of conservative welfare regime. In contrast, an ideal type of conservative welfare regime referred to a theoretical welfare state. Therefore, whether a real typical classification categorised Japan with Germany, Austria, and Belgium would not significantly impact the construction of the ideal type of conservative welfare regimes.

In the context of classifying the Japanese welfare state and healthcare system, two issues remained largely untouched when discussing the difference between ideal types and real types. The first concern was the problem of fit (i.e., how to evaluate the goodness of fit). The problem of fit tended to be an ideal typical question instead of a real typical issue in the literature (e.g., van Kersbergen & Vis, 2015, p. 117). In an ideal typical analysis, examining the goodness of fit involved investigating whether a particular case (i.e., Japan) fitted the ideal type. This was achieved by comparing the Japanese welfare state or healthcare system with the theoretical types (i.e., conservative welfare regime or Bismarckian healthcare system, cf. Chapters 2 & 4). For example, Ferragina and Seeleib-Kaiser (2011) noted that some countries whose welfare arrangements were very similar to ideal types could be regarded as prototypes (p. 585). Furthermore, they also reviewed existing classifications and attempted to identify the goodness of fit for different welfare states. However, based on Table 5.1, it was also meaningful to consider the goodness of fit in a real typical analysis. Examining the goodness of fit could reveal how well a given case fits a specific category in a classification. This could be achieved via using fuzzy logic in the classification (see Section 7.3 for relevant discussion). Relating to the goodness of fit, the second concern was hybrids. Both Arts and

Gelissen (2002) and Ferragina and Seeleib-Kaiser (2011) used the term hybrid to refer to those welfare states that were classified less consistently across typologies. In addition, Arts and Gelissen (2002) also highlighted the problem of hybrids such as the Netherlands and Switzerland. Japan was usually considered a hybrid of liberal and conservative welfare regimes (see e.g., Esping-Andersen, 1997). A hybrid could be interpreted differently in ideal typical and real typical approaches. In terms of ideal typical analysis, a hybrid case meant that it did not fit any ideal type. For instance, in the ideal typical analysis conducted by Ferragina and Seeleib-Kaiser (2011), the Netherlands and Switzerland were hybrids because both countries “are not classified in the same regime type in more than 50% of the studies” (p. 591). In the real typical analysis, hybrid cases could be regarded as outliers that cannot be classified with other cases in any clusters.

5.2 Elective Affinities between Welfare Regime and Healthcare System

As reviewed in Chapters 2 and 3, welfare regime analyses (both Esping-Andersen’s framework and intellectual efforts to expand it to include East Asian welfare regimes) did not pay too much attention to services and healthcare since welfare regime analyses were largely based on cash benefits such as pensions and unemployment benefits (Bambra, 2005a). Healthcare was regarded as an important component of the welfare state. Two main pillars of public social expenditure (20.1% of GDP) were pension (7.7% of GDP) and healthcare (5.8% of GDP) across OECD countries in 2019, while cash benefits for the working-age population and other services except for health only took 3.6% and 2.3% of GDP, respectively (OECD, 2023a). Before the outbreak of COVID-19, the average spending on health was about 8.8% of the GDP in OECD countries (OECD, 2021). Chapter 4 addresses the healthcare system typologies. Although some authors have noticed the relationship between healthcare system typologies and broader welfare regime debates, there have only been a few attempts to connect these two policy sectors. The typologies of welfare states and healthcare systems

were largely independent before the end of the twentieth century. Particularly, earlier versions of typology usually did not refer to each other (see Chapters 2 and 4 for relevant discussion).

Section 5.2 aims to connect the typologies for welfare states and healthcare systems by applying the concept of elective affinity. Section 5.2.1 provides an overview of elective affinity and its relevance to the (in)consistency between different social policy sectors within a country. Section 5.2.2 reviews how welfare regime literature incorporates healthcare systems. As a supplement addressing Esping-Andersen's neglect of services in the three worlds framework, Section 5.2.3 examines the world of services literature. Section 5.2.4 discusses the role of welfare regimes in healthcare system typologies. Section 5.2.5 concerns Kasza's (2006) argument on the inconsistency between different welfare policy sectors. Section 5.2.6 summarises the relevant discussion on elective affinities and attempts to expand the concept of elective affinities to demonstrate the relationship between income maintenance and healthcare policies.

5.2.1 Elective Affinities and (In)Consistency between Social Policy Sectors

In order to link welfare regimes and healthcare system typologies, elective affinity is an important concept that can be applied. The term "elective affinity" was suggested by Schröder (2009). According to Crouch (2001), elective affinity was a term originating from chemistry in the 18th century, and it was defined as mutual attraction between two objects sharing strong similarities. In sociology, Max Weber used this term to refer to social institutions with strong similarities (Crouch, 2001, p. 123). Nonetheless, Weber did not define this term clearly, and the meaning of the term remained controversial, resulting in various interpretations of Weber's means of connecting interests and ideas (cf. Howe, 1978; McKinnon, 2010; Thomas, 1985). For Schröder (2009), elective affinity implied the correspondence between VoC (i.e., production systems) and welfare regimes.

Elective affinity was also relevant to the (in)consistency between different social

policy sectors. Welfare regime literature usually assumed that there were certain levels of “elective affinity” between different social policy sectors within a country. In other words, for welfare regime analysts, it was assumed that the development of welfare policies (e.g., pension, healthcare, and family policies) consistently followed a similar logic. This term could also be used to refer to the correspondence between healthcare system typologies and welfare regimes. For example, a conservative welfare regime was paired with a conservative healthcare system following the same conservative logic. In addition, the prevalence of the same logic could be found in the countries within the same groups (external consistency). In other words, for instance, those being classified as conservative welfare regimes (e.g., Germany, France, and Austria) have followed the conservative logic and hence developed similar patterns of social policies.

5.2.2 Healthcare Systems in Welfare Regime Literature

Although healthcare is the second largest welfare policy sector, both Esping-Andersen’s welfare regime typology and the advocates of the East Asian welfare theorists mainly focused on income maintenance programmes such as pensions and unemployment benefits, but did not address the healthcare system sufficiently.

Esping-Andersen (1990) did mention healthcare when discussing the stratification index. Private expenditure on health was one of the criteria measuring the stratification in the welfare state (p. 73). In another chapter, Esping-Andersen referred to health in explaining the employment structure in Sweden. In Esping-Andersen’s (1997) explanation of the Japanese welfare state, healthcare was referred to demonstrate that Japan was not different from Western industrialised countries. For example, similar to the US, corporate welfare also included health (p. 181). As in many European countries, Japan has achieved universal coverage in pension and healthcare, but it was based on social insurance (p. 183). It seemed that Esping-Andersen recognised the healthcare system in his new approach in 1999. He

noticed that the idea of the welfare regime was less obvious in healthcare because some liberal welfare regimes, such as the UK and Canada, had a national health service system. Some conservative welfare regimes had a larger private sector due to the healthcare provided by non-profit organisations (Esping-Andersen, 1999, p. 76). For Esping-Andersen (1999), healthcare was seen as a social service, which mainly experienced growth in the public sector with a few exceptions (e.g., the US) (p. 105). Nevertheless, Esping-Andersen (1999) did not address the elective affinity between income maintenance programmes and the healthcare system. Instead, it seemed that he assumed the existence of elective affinities between different social policy sectors.

Earlier classifications of East Asian welfare regimes sometimes included common features within East Asian healthcare systems, which were usually used as evidence for the existence of the East Asian welfare regime. For the culturalists, there were few systematic discussions on healthcare systems. Sometimes they referred to the development of healthcare systems in East Asia, but there was almost no explanation about the relationships between culture (i.e., Confucianism) and the healthcare system. Compared to culturalists, productivism focused more on the healthcare system. For example, both Holliday (2000) and Kwon (1997) addressed healthcare systems in East Asia. However, although the former focused on the expansion of rights in healthcare, and the latter focused on the regulative role of the state, both lack a systematic assessment of healthcare systems.

Aspalter (2006, 2012) tried to include the healthcare system in the East Asian welfare model. When discussing the East Asian welfare model, Aspalter (2006) emphasised that one feature shared by East Asian welfare systems was that social rights were first confined to productive sectors such as healthcare, education, and housing. The investment in education and healthcare also provided legitimacy for the governments (p. 290). In his analysis of individual East Asian welfare systems, the development of healthcare systems was also

included. Furthermore, Aspalter (2012) argued that East Asian healthcare systems combined effectiveness and efficiency (see also Section 4.4). Compared to European countries, East Asian healthcare systems have achieved relatively good outcomes with relatively low health expenditures. On the one hand, governments played a strong role in managing the healthcare system, and simultaneously, the state was very sensitive to the cost-containment of the healthcare system. On the other hand, governments also permitted private provision for public services. These features corresponded to the ideal typical East Asian pro-welfare conservative welfare regime (pp. 186-187). However, Aspalter's (2006, 2012) accounts of the East Asian healthcare system seemed unconvinced. The results of cluster analyses conducted by some authors did not support the existence of the East Asian healthcare model (see Section 4.4). The empirical data in Aspalter (2012) did show that East Asian healthcare systems were successful in terms of efficiency and performance, but the link between the good performance of the healthcare system and the overall logic East Asian welfare model was unclear. Confucianism and productivism (or developmentalism) did not entail a healthcare system with good performance. The strong role of the state in the healthcare mix, with relatively low financial input, seemed to be a plausible argument for the East Asian healthcare model. However, in Western countries with national health service systems, the role of the state was stronger than in those countries with social health insurance systems. The inclusion of the private sector and cost containment were common issues in major healthcare systems in the world, rather than being unique in East Asia. Whether the combination of low input and strong state intervention required more comparative analysis.

Last but not least, many authors mentioned that facing the pressure brought by demographic changes, the Japanese healthcare system had two trends in the post-positivist era: the retrenchment in healthcare coexisted with expansion in long-term care (see e.g., Peng, 2000). Yang (2016) and Yang and Kühner (2020) have included healthcare in their qualitative

comparative analysis of East Asian welfare systems. Nonetheless, few researchers highlighted changes in healthcare systems in the post-productivist era. One exception was Hwang (2022). After examining cash transfers in East Asia, he identified several features shared by healthcare systems, such as the prevalence of out-of-pocket payment, high private share of health revenue except in Japan, and liberal practice of medicine with strong private healthcare providers (Hwang, 2022, p. 80). However, he denied that there was a single East Asian healthcare model, although these healthcare systems served the needs of the economy. Nevertheless, Hwang (2022) did not address the healthcare system typology literature in his detailed examination of East Asian welfare systems. In general, the criticism of Esping-Andersen's ignorance of the services could be applied to the discussion on East Asian welfare regimes.

5.2.3 Worlds of Services

Scholars noticed differences between service provision and income transfer even before Esping-Andersen (1990). Kohl (1981) distinguished two patterns of redistribution: the Continental European model focused on income and cash transfers, while the Scandinavian model preferred the provision of public services (pp. 313-314). Since Esping-Andersen (1990) did not consider service provision in his welfare regime typology, some analysts compared the "transfer state" and "service state" in order to overcome Esping-Andersen's neglect of services. Kautto (2002) measured investment in social services as the percentage of GDP and as the percentage of social expenditure (i.e., "service efforts" and "service emphasis") in European countries. The result of Kautto's (2002) cluster analysis found a distinct Nordic service state model, while there were few differences in other European countries. However, if considering the transfer efforts, three clusters could be identified: the service approach group included Nordic countries, France with the UK and Germany joining at the end of the 1990s; the transfer approach group consisted of Italy, Netherlands, Belgium, and Austria;

while Greece, Spain, Portugal, and Ireland were classified into a third group with limited transfer and service effects (p. 62). Different from Esping-Andersen (1990), the UK, Germany, and France were classified into the same group with Scandinavian countries, while Continental and southern European countries were divided. Another classification involving both transfer and service was Jensen (2008), who argued that within the service sector, health care and social care should be considered separately (pp. 151-152). Jensen (2008) conducted a hierarchical cluster analysis on transfer, service (i.e., health care plus social care), health care, and social care indicators. Their results identified three or four clusters when transfer and service were considered as a whole. However, when the service sector was broken into health care and social care, the picture was different: healthcare was more uniform and no cluster could be identified within eighteen industrialised countries, but three or four clusters could be found in regard to social care. Jensen (2008) argued that Esping-Andersen's framework was valid because the fourth cluster was less theoretically important (p. 156). Jensen (2008) also stated that decommodification and defamilialisation corresponded to transfer and social care, respectively (p. 158). Unlike the previous classifications for worlds of services, Stoy (2014) focused on the service side instead of combining both the transfer and service sectors in one typology. Stoy (2014) argued that defamilialisation was not an appropriate criterion to measure services because it only captured social services rather than the whole service sector (p. 346). Using quantity, types, providers, and payers of services as theoretical criteria, which were operationalised as employment in social care, cluster analysis and subsequent multivariate analysis of variance were applied. The result corresponded to Esping-Andersen's (1990) three worlds of cash transfers with an additional cluster called rudimentary, including mainly Southern and Eastern European countries. Two exceptions in Stoy (2014) deserved to be mentioned: Finland was classified into the liberal cluster, and the US was grouped into the conservative cluster. Unfortunately, there was no explanation for

these exceptions.

Although none of these authors explicitly used the term elective affinity, their studies contributed to the discussion since they aimed to explore the relationships between cash transfer and service provision in welfare states. It seemed that on the one hand, all three researchers mentioned above supported Esping-Andersen's (1990) three worlds to some extent rather than Kasza's (2006) argument on inconsistency (see Section 5.2.5). On the other hand, this did not mean the three worlds framework could be applied to the service perfectly (e.g., countries were classified differently in spite of the same number of clusters; fewer cross-national differences in healthcare). Nevertheless, the service literature adopted quantitative cluster analysis to examine Esping-Andersen's welfare regime typology, which paid less attention to East Asian cases where familialism prevailed. Healthcare was included but often analysed with other service provision (e.g., social care).

5.2.4 Welfare Regimes in Healthcare System Typologies

As mentioned in Chapter 4, there were a few analysts of healthcare system typologies engaging with the welfare regime literature. Moran (1999, 2000) might be the first author who attempted to connect two separate typologies. Moran (1999) proposed the term "health care state", which included interaction between governing states and institutions (p. 5). In the later publication, he reiterated the two-way influence between governing and institutions. Furthermore, he added that "health-care institutions are influenced by, and of course influence, the wider welfare state; but they are also shaped by dynamics of their own—some of which are internal to, and some of which are external to, the health-care system" (Moran, 2000, p. 139). One of the contributions of the concept "health care state" was that it understands the healthcare system in a larger context of the welfare state and at the same time. It also recognised the importance of the internal dynamics within the healthcare system. Nonetheless, there was less discussion about how the health care state and the welfare state

interact with each other.

Bambra (2005a, 2005b) and Reibling (2010) connected welfare regime and healthcare system typologies by applying Esping-Andersen's (1990) decommodification to analyse healthcare systems (see Section 4.2.2 for relevant discussion). Instead of focusing on the extent a person's health status depends on the market, Bambra (2005a, 2005b) defined health decommodification as "the extent to which an individual's access to health care is dependent upon their market position and the extent to which a country's provision of health is independent from the market" (Bambra, 2005a, p. 33), while Reibling (2010) argued that decommodification could be understood in terms of access instead of the public/private mix in healthcare advocated by Bambra (2005a, 2006b). She constructed access as an analogy to Esping-Andersen's (1990) decommodification for healthcare system typologies. She used the argument made by Esping-Andersen (1990) that "a programme can be seen to harbour greater decommodification potential if access is easy" (p. 47). However, the analogy of Reibling (2010) only partially reflected the core of decommodification. Firstly, decommodification required more than access. Esping-Andersen's operationalisation of decommodification had two aspects: easy access and satisfactory standards regardless of labour market status (Esping-Andersen, 1990, p. 74). Among the four indicators proposed by Reibling (2010), only cost-sharing best corresponded to the second aspect of decommodification, because a healthcare system had stronger decommodified effects if a patient paid less when visiting hospitals. Other indicators focused more on access. Secondly, the connection between benefit levels and the number of doctors was not clear. It could be argued that people had more access if a healthcare system with a higher number of doctors, but more doctors did not entail a high degree of decommodification if visiting doctors was expensive and out-of-pocket payment for the service was high. Thirdly, the coverage of the healthcare system as a measurement for universality required more examination. If most of the population were

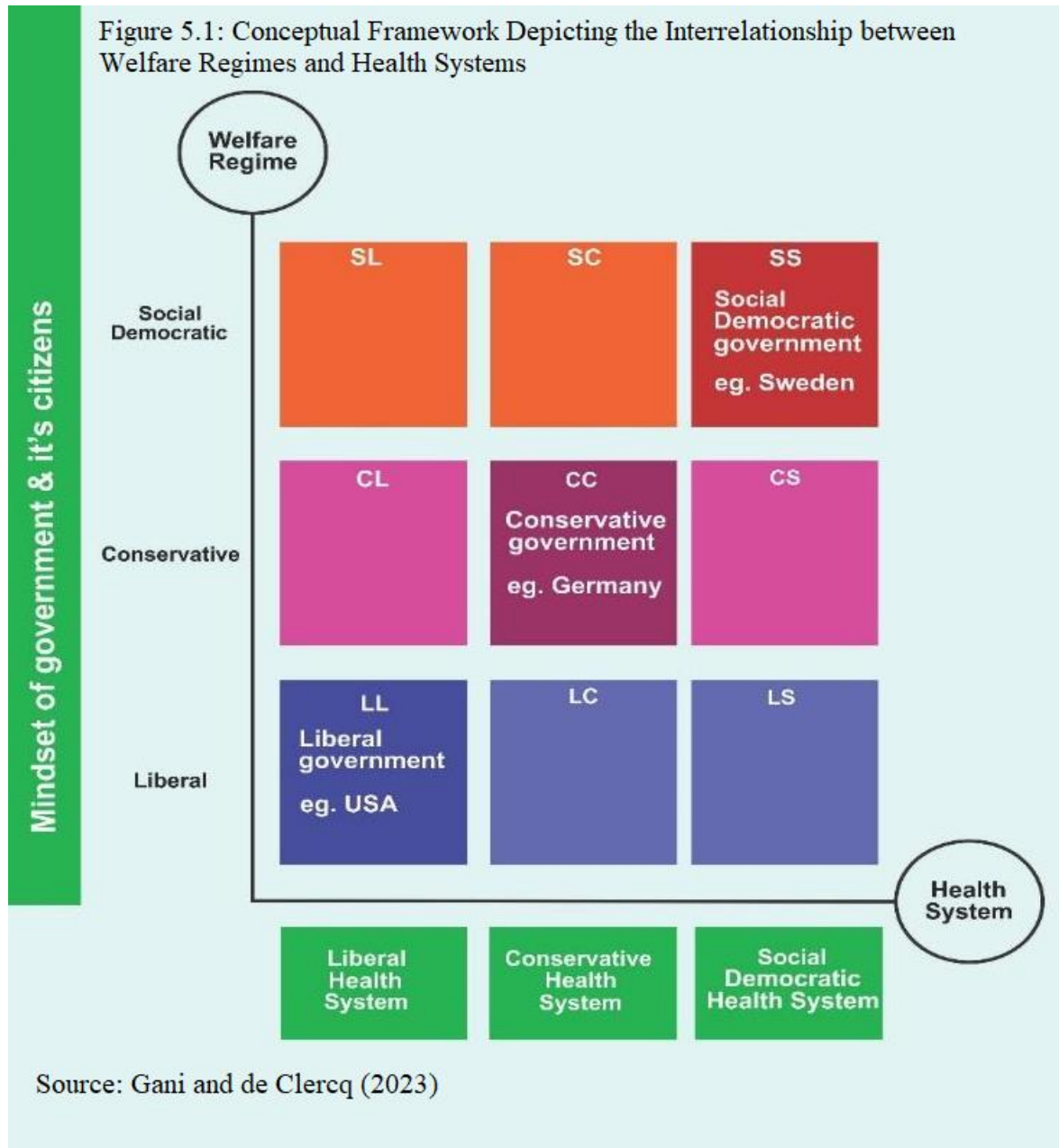
covered by privately provided healthcare services without any cost-sharing, the healthcare system could not be perceived as de-commodified, because citizens needed to rely on the market in terms of earning money to pay for healthcare services.

The latest attempt to bridge welfare regime typologies and healthcare system typologies could be found in Gani and de Clercq (2023). Compared to previous authors, Gani and de Clercq (2023) explicitly put the welfare regime and healthcare system into one framework (see Figure 5.1). The ideology behind the government was on the welfare regime side, and the healthcare system applied by the government was on the horizontal axis. The vertical axis denoting the welfare regime included liberal, conservative, and social democratic, which were suggested by Esping-Andersen (1990). According to this framework, there were in total nine possible combinations of welfare regimes and healthcare systems. As Gani and de Clercq (2023) have highlighted in Figure 5.1, Sweden, Germany, and the US were archetypes in which welfare regimes and healthcare systems shared the same ideology. Nonetheless, there were some limitations in the framework proposed by Gani and de Clercq (2023). Unlike in the welfare regime analyses, the characteristics of liberal, conservative, and social democratic healthcare systems were not clear. Few scholars in comparative health policy adopted the same labels as the welfare state to classify healthcare systems (see Chapter 4). Gani and de Clercq (2023) defined a social democratic healthcare system as “the state would be concerned with providing for all the needs of its citizens and it would go beyond provision. There would be engagement with the populace at all levels to ensure that their needs have been considered” (p. 78). In addition, they argued that in Block SS in Figure 5.1, the state prioritised the principle of equity and provided good and universal healthcare for its citizens. For Block CC, the principle of equity was less important, and the state provided healthcare in a paternal and autocratic manner, while the state provided minimum benefits, and the market played a dominant role in Block LL. This interpretation of the social

democratic, conservative, and liberal healthcare system was ambiguous. They described conservative states as “the state would provide for the needs of its citizens as it feels best, taking cognisance of the limitations imposed by financing” (p. 78). It could be argued that the conservative welfare regime was accompanied by paternalism, but financial austerity was faced by all types of welfare states and healthcare systems (Pierson, 1998), instead of being a unique phenomenon in conservative welfare regimes. Another argument was that a social democratic state would “love and care for its citizens”, while there was “little or no consultation with the populace” in liberal forms of government (Gani & de Clercq, 2023, p. 78). All countries in Esping-Andersen’s welfare regime typology were advanced democracies. Hence, it was problematic to argue that liberal welfare regimes consulted less with their citizens without any reference to empirical research.

More importantly, there were no clear, measurable, and empirical criteria to distinguish the three types of healthcare systems. It seemed that the only criterion was the coverage in Gain and de Clercq (2023) (i.e., social democratic healthcare systems tended to provide universal healthcare). However, in fact, all advanced industrialised countries have provided universal coverage of healthcare with the exception of the US. The term “free market dictate” required more examination, since even in the US, the public expenditure on healthcare has occupied half of the total public expenditure. The lack of well-defined criteria caused some confusion in classifying countries. Gain and de Clercq (2023) mentioned that South Africa was a hybrid of the liberal and social democratic welfare regimes, but they put South Africa into Block SL because the ideology of welfare politics was moving forward to social democracy, while the government did not devote to funding a universal healthcare system via tax (pp. 79-80). There was no further explanation on why they put South Africa into Block SL rather than Block LL. In addition, according to advocates of a global welfare regime (e.g., Wood & Gough, 2006), welfare systems in less developed or developing

countries were classified into different categories from industrialised countries. It was questionable whether South Africa could be put into the same framework as other advanced capitalist economies.



5.2.5 Inconsistency

Section 1.1.1 mentions Esping-Andersen's (1990) definition of the welfare regime. The term was used in a broad sense, as it aimed to capture the relationships between different actors (i.e., the state, the market, and the family) in shaping welfare policies and welfare

provision. It seemed that for Esping-Andersen (1990, 1999), the concept of the welfare regime was holistic and could be applied to capture the logic of the welfare state as a whole. However, some researchers have challenged the idea of the welfare regime due to its internal inconsistency. As Kennedy et al. (2015) noted, the UK was often used as an example to criticise Esping-Andersen's (1990, 1999) neglect of service provision. The UK was classified as a liberal welfare regime, but the British welfare state was accompanied by the national health service providing its citizens with free access to healthcare, while universalism was regarded as one of the characteristics of the social democratic welfare regime.

The literature reviewed above in Sections 5.2.2, 5.2.3, and 5.2.4 tended to favour the existence of elective affinity and consistency between welfare states and healthcare systems to some extent. However, authors such as Kasza (2002, 2006) rejected this assumption prevalent in existing welfare regime approaches. Kasza (2002, 2006) argued against the usefulness of welfare regimes. It was assumed that multiple policy sectors were included in one welfare regime, and a consistent rationale was followed through the development of different welfare programmes. He rejected these assumptions within the welfare regime. He contended that the concept of the welfare regime itself was inconsistent. To support his argument, Kasza (2006) examined several indicators of healthcare systems. 14 OECD countries were selected. He found that the health expenditure in fourteen OECD countries did not match their welfare regime types (e.g., the US was the top spender regardless of being a liberal welfare regime) (p. 143). In addition, there was no significant difference in terms of health outcomes (p. 144). Kasza (2006) also found that welfare regimes were unable to capture the differences even in income maintenance policies. For example, types of mandatory pension schemes, generosity of public assistance to the elderly, and the percentage of contributions to welfare programmes did not adhere to welfare regimes (pp. 144-146). The only pattern identified was that Scandinavian states shared similarities in active labour market

policies (p. 146).

This inconsistency of different welfare policies was attributed to the complexity of the political logic behind policymaking. First, the histories of various policy sectors were different because policymakers did not necessarily change all welfare policies in a parallel way. Second, there was a variety of actors in different policy sectors in both government and civil society. Some of the actors might have an impact on specific policy sectors but not others. Third, different policymaking processes could change the direction of policies and generate variations in policy outcomes. Lastly, policy learning and policy diffusion also impacted the making of welfare policy. These foreign influences were not confined to specific regime groups. For instance, a conservative welfare regime could learn practice in a liberal welfare regime. The application of foreign models often differed from local policies, which was another source of inconsistency within the welfare state (pp. 150-153). Although Kasza (2002, 2006) did not explicitly contribute to combining two types of theories, his challenge of using welfare regimes highlighted the importance of investigating various policy sectors within the welfare state.

According to Kennedy et al. (2015), the inconsistency between different policy sectors could be explained by different cultural and institutional factors. For instance, they argued that “unlike poverty, illness is perceived less as a person’s own fault, but rather as an unpredictable event” (p. 7). This was supported by welfare attitude studies, which showed wider support for healthcare than other welfare programmes in European countries. The idea that ill people were seen as highly deserving led to high levels of solidarity and public support for healthcare. Furthermore, the underlying logic of Esping-Andersen’s welfare regime was power resources, which meant that the driving force of income maintenance programmes was the conflict between capital and labour, but in the field of healthcare, the interactions between payers, patients, and professionals were more significant. In addition,

income maintenance programmes were influenced by external circumstances (e.g., economic crisis). The healthcare system was not only subjected to these exogenous factors that could impact the demand (e.g., demographic changes and improved expectations of the population) but also shaped by the supply side, particularly the public trust and professional lobbies of medical technology and government's ability to manage technologies (Kennedy et al., 2015, pp. 7-9).

Despite these differences between the healthcare system and other policy sectors in the welfare state, some analyses revealed that the welfare regime framework remained partially valid in explaining healthcare systems (e.g., Bambra, 2005b). Other scholars put their emphasis on the cross-national differences in welfare policy. For instance, Bazant and Schubert (2009) took a radical position and argued that it was impossible to modify any existing classification or to propose a new cluster to capture the diversity of European welfare states (p. 533). Based on the indicators they chose (i.e., spending, funding, actor, and guiding principles), they stated that “we can definitely not speak of clusters or regimes” in spite of some similarities that could be identified (p. 533). In addition to the cross-national diversities, the expansion of the European Union increased the difficulties in classifying the new members within the existing framework.

In short, the literature mentioned above posed a challenge to the concept of the welfare regime. On the one hand, it was argued that the welfare regime was not internally consistent, which meant that there was no unified and holistic logic (e.g., liberal, conservative, or social democratic) that could be applied to the welfare state as a whole. Therefore, the usefulness of the welfare regime was limited, and different policy sectors should be studied separately. On the other hand, welfare regimes were also not externally consistent. Welfare states shared similarities, but the patterns of these similarities did not follow the regime approach. Using welfare regimes to capture cross-national variations oversimplified the

reality.

5.2.6 Summary

Section 5.2 reviews the concept of elective affinity and connections between welfare regime typologies and healthcare system typologies. For welfare regime analysts, the healthcare system was a part of the welfare state, and it was assumed that a healthcare system followed a similar ideology to its welfare state. This assumption was challenged by Kasza (2002, 2006). For scholars studying healthcare system typologies, the healthcare system was relatively independent of the welfare state (see Chapter 4). Although some scholars noted connections between these two, most of them did not go further than pointing out the relationships (Moran, 1999) and interpreting concepts in welfare regimes theories from the perspective of healthcare systems (Bambra, 2005a, 2005b; Reibling, 2010).

Similar to the relationship between production regimes (i.e., VoC, see Section 2.2.3 for relevant discussion) and welfare regimes, a certain level of elective affinity was expected between welfare regimes and healthcare systems (see Table 5.2). A liberal welfare regime was accompanied by a liberal healthcare system (or in other words, a liberal welfare regime consisted of a liberal healthcare system). As Gain and de Clercq (2023) noticed, the market played a major role in healthcare. Reliance on the market could lead to lower levels of decommodification (Bambra, 2005a, 2005b; Esping-Andersen, 1990). A conservative welfare regime was parallel to the Bismarckian healthcare system, where programmes were established based on occupations or status via social insurance or national insurance (Esping-Andersen, 1990; Lee et al., 2008). A social democratic welfare regime was expected to be accompanied by the Beveridgean healthcare system. The key idea was universalism, exemplified by healthcare provision through the national healthcare service. In addition, for the East Asian welfare regime (or productive welfare regime) emphasising the subordination of social policy, a similar form of healthcare system model was expected, although this was

challenged by scholars (see Chapters 3 and 4 for relevant discussion).

Table 5.2: Elective Affinity between Welfare Regime and Healthcare System

Welfare regime	Healthcare system	Characteristics
Liberal	Private insurance/pluralist model	Significant role of the market Low levels of decommodification
Conservative	Social insurance/national insurance Bismarckian model	Occupation-based programmes Stratification
Social democratic	national health service Beveridgean model	Universalism
Productive (East Asian)	East Asian healthcare model	Subordination of social policy

However, Table 5.3 reveals that the reality is more complex. On the one hand, some countries manifested the idea of elective affinity between welfare regimes and healthcare systems (e.g., the US, Germany, and Sweden) (Gain & de Clercq, 2023). The income maintenance policy and healthcare system in Continental European countries and Scandinavian countries were generally consistent. On the other hand, some countries did not follow similar patterns. Among the developed economies, one of the classical examples was the UK (Kennedy et al., 2015). Many Southern European countries (e.g., Italy) embraced the national health service model for healthcare rather than the social insurance principles that could be witnessed in their income maintenance policies. In East Asia, Hong Kong was often seen as a member of the East Asian welfare regime, but its healthcare system mirrored the national health service in the UK due to colonialism (Lam, 2018).

Table 5.3: Examples of Elective Affinity

Welfare regime Healthcare system	Liberal	Conservative	Social democratic	Productive
Liberal (Private or mixed)	USA			
Conservative (Bismarckian)	JPN?	DEU JPN?		JPN?
Social democratic (Beveridgean)	GBR	Southern European (e.g., ITA)	Nordic (e.g., SWE)	HKG
Productive				East Asia?

Note: ? denotes controversy

5.3 Implications

Chapter 5 reviews two important theoretical issues: the differences between ideal types and real types in the welfare/healthcare modelling business and elective affinities between welfare regimes and healthcare systems. As shown in Section 5.1, ideal types and real types served as the bases for all typological studies. Ideal typical research focused on abstracting features from reality (i.e., constructing ideal types) and then applying these ideal types to describe patterns, explore possible variables, or explain certain phenomena (see Section 1.2). In contrast, real typical research emphasised classifying the existing cases and assigning them into a category, which could simplify reality and facilitate further comparative research to describe, explore, and explain the similarities and differences between cases. Following the research objective to provide an up-to-date classification, this thesis mainly follows the real typical approach in classifying the Japanese welfare state and healthcare system. This is achieved by quantitative cluster analyses aiming at classifying Japan with other welfare/healthcare systems.

Elective affinity is the other significant theoretical base for this thesis. The elective affinity was originally used to describe the correspondence between production regimes and welfare regimes. Section 5.2 reviews relevant literature on welfare regimes and healthcare system typologies and reveals the possibility of expanding the elective affinity to describe the relationship between income maintenance policy and healthcare policy within the context of the welfare/healthcare modelling business. This expansion provided a theoretical base for examining Kasza's (2006) argument for the inconsistency between different social policy sectors in Japan, which was another aim of this thesis. In addition, the elective affinity was particularly important regarding classifying the controversial Japanese case. As previously reviewed in Chapters 2 and 3, the classification of the Japanese welfare state was controversial. In the realm of healthcare system typology, Japan was usually regarded as a Bismarckian healthcare system incorporating social insurance (see Chapter 4). Therefore, Japan could be located in four different blocks in Table 5.3. In order to identify the classifications of Japan and whether the elective affinity existed, Chapter 6 develops a framework to facilitate the analysis in this thesis.

Chapter 6 A Unified Framework

Since this thesis not only classifies the Japanese welfare system and healthcare system but also compares the results of the two classifications, it is necessary to develop a unified framework to facilitate the comparison. In this framework, case selection and criteria (or variables) selection are two issues that need to be addressed. If the classifications for welfare systems and healthcare systems follow different case selection strategies, the comparison is not meaningful. Similarly, higher levels of comparability of two classifications can be achieved if the concepts or variables chosen classify welfare regimes and healthcare systems remain consistent. Section 6.1 reviews the case selection strategies in the welfare/healthcare modelling business, and Section 6.2 deals with the concepts or variables that can be used to classify welfare systems and healthcare systems. Combining the existing literature, Section 6.3 develops a framework for classifications in this thesis.

6.1 Case Selection

In various attempts to categorise welfare states and healthcare systems, to some extent, a large number of different typologies could be attributed to different case selection strategies adopted by researchers. Although case selection was widely discussed in politics and broader social science research (e.g., Gerring, 2008, 2017; Keman & Pennings, 2017; Seawright & Gerring, 2008; Yin, 2014), case selection issues largely remained untouched in cross-national comparative analysis, especially in welfare regime and healthcare system typology studies. Ebbinghaus (2012) and Kim (2015) systematically noted the case selection issue in the context of welfare regime research. Ebbinghaus (2012) found that some countries, such as the UK, Germany, and Sweden, were always included in various welfare regime studies, while some countries in Southern Europe, Eastern Europe, and East Asia were less attractive to scholars.

As Chapters 2-4 have shown, analysts could choose various case selection strategies

when engaging in the welfare regime and healthcare system typology. This section reviews some strategies often used in welfare regime and healthcare system typology research: medium-N and large-N (Section 6.1.1), small-N case studies (Section 6.1.2), and single case studies (N = 1) (Section 6.1.3). In addition to the number of cases selected, Section 6.1.4 discusses the scope of case selection. Section 6.1.5 summarises the case selection strategies.

6.1.1 Medium-N and Large-N Studies

No previous research has clearly confined the boundary between medium-N and large-N studies within the context of welfare regimes and healthcare system typologies. Esping-Andersen's (1990) selection of eighteen OECD countries was an example of medium-N (Ebbinghaus, 2012). Based on the typologies reviewed in previous chapters, some features of medium-N and large-N studies could be identified: they shared similar aims of classifying welfare systems or healthcare systems. Therefore, quantitative methods such as cluster analysis were often utilised. Due to a large number of cases involved, national contexts in medium-N and large-N studies were less significant than in small-N and single case studies. There was little room left to explain to what extent a specific country fell into a given category after conducting quantitative analysis or constructing ideal types. Sometimes, authors focused on one typical case for one category. They might cover other cases (e.g., hybrid), but usually in a very brief manner.

Scholars replicating Esping-Andersen's classification or using different frameworks to classify welfare systems adopted the medium-N or large-N strategy (e.g., Abu Sharkh & Gough, 2010; Scruggs & Allan, 2006, 2008; see also Section 2.3). Most recent healthcare typologies have adopted this strategy (e.g., Reibling et al., 2019; Wendt, 2014; see also Section 4.2). Nevertheless, medium-N and large-N studies had their limitations. Ebbinghaus (2005) noted that the selection of cases was based on pragmatic reasons (e.g., data availability or similar level of development), which resulted in non-random sampling in

cross-national analysis, and hence influenced generalisation. Another significant issue was the heterogeneity of different countries (Ebbinghaus, 2005, pp. 136-138). Many quantitative analysis techniques (e.g., linear regression and k-means cluster analysis) assumed the homogeneity of data.

6.1.2 Small-N Studies

Another widely adopted case selection strategy in typologies was Small-N. Small-N comparative studies were often accompanied by qualitative methods. Almost all researchers of the East Asian welfare regimes conducted small-N comparative studies (see Section 3.1). Researchers usually investigated all the selected cases similarly. One criticism of the small-N case study was the deliberate selection, which might lead to bias in the result (Geddes, 1990).

Japan was the only non-Western country included in Esping-Andersen's regime theory but was given little attention. Other East Asian welfare systems were absent. Although the analysts of the East Asian welfare regimes criticised Esping-Andersen's misclassification of Japan and ignorance of East Asian cases, they rarely provided justification for their case selection. The equivocal logic of case selection in the research of East Asian welfare regimes might be replication: cases were selected because they are similar (see Yin, 2014, p. 57). However, the boundary of "similar" was not clearly defined. The neglect of case selection posed challenges to the robustness of the East Asian welfare model. As demonstrated in Chapter 3, within the literature of East Asian welfare regimes, Japan and the four Asian Tigers were regarded as central members, but sometimes mainland China and Southeast Asian countries were included. It should be noted that geographical location did not entail similar patterns of welfare policies and healthcare policies. As Esping-Andersen (1990) indicated, welfare states in Europe were divergent, and there was no homogenous welfare model in Europe. The choice of cases deserved more attention, particularly in the post-productivist era, because the divergence in different cases was observed: for example, South

Korea and Taiwan had experienced democratisation, while Hong Kong and Singapore remained relatively stable. In addition, Hong Kong and Singapore were relatively smaller than their counterparts in East Asia in terms of size and population. Few analysts of the East Asian welfare regimes have explained why they chose certain welfare systems and how they defined East Asia.

Similar patterns could be identified in healthcare system typologies, especially the earlier healthcare typologies usually neglected the methodology and case selection. They often chose the case by “eyeballing” or “world scanning” without justification (e.g., Roemer, 1960). A more recent example was Gain and de Clercq (2023), who tried to put South Africa into their framework, which combined welfare states and healthcare systems. However, there was little justification for whether South Africa could fit into their framework, which was mainly based on welfare systems and healthcare systems in industrialised countries. Moran (1999) was probably the only author who tried to justify his choice of the US, Germany, and the UK when he suggested that these three countries represented three different types of health care states. He argued that the justification for these three countries representing three variants was not sufficient because it only considered consumption. Instead, he suggested that the significance of these health care states “lies in the particularly crucial place they occupy in a global state system” (Moran, 1999, p. 18): the US was the largest capitalist economy and healthcare system; Germany was the largest in Europe; whilst the UK had undergone a series of cultural and institutional changes. Nevertheless, the choice of Moran (1999) was inevitably Western centralism, since Japan was also an important health state in the global state system.

6.1.3 Single Case Studies and The Importance of Japan

It should be noted that typology research was inherently comparative because one could not classify a welfare state or a healthcare system by only examining itself without comparing it with others. Therefore, researchers adopting a single case study strategy usually

incorporated comparison into their studies (e.g., Estévez-Abe, 2008; Kasza, 2006; Miyamoto, 2003; Tanaka, 2019; Takegawa, 2005; see also Sections 3.2 and 3.3). Comparisons were made in relatively unsystematic and inconsistent ways (e.g., for one criterion, they compared some countries, while they compared different countries for another criterion). Similar to small-N research in typologies, there was little justification for why they selected and compared certain countries. Case selection was a notable issue in a single case study because the result was largely dependent on researchers' choices. If two groups of scholars wanted to examine the robustness of welfare regime typologies, they probably reached different answers when one chose a problematic case (e.g., Japan) and the others selected an archetypal country (e.g., Sweden).

A common way for scholars studying Japan to justify their choice of Japan was by appealing to the knowledge gap. For example, Kasza (2006) wrote that “neither government agencies nor academicians have produced many in-depth comparative studies of Japanese welfare policy” (p. 2). The existing knowledge gap was the starting point of research, but the statement that there was little research on the Japanese welfare state or its healthcare system itself could not sufficiently justify the choice of Japan. This was because some countries (e.g., North Korea) have even less research. Therefore, in addition to the knowledge gap, a more robust justification is needed to start with theories and characteristics of the case.

If we focused on Japan, we could find that many welfare state typologies included Japan (see Powell, Kim, & Kim, 2020). The rationale for choosing Japan as a single case was simple: Japan was a critical case in the welfare regime analyses (see Yin, 2014, p. 51). On the one hand, although Esping-Andersen (1990, 1999) included Japan, he did not pay sufficient attention to non-Western cases. On the other hand, Japan was seen as a central case in analyses of East Asian welfare regimes (see Chapter 3). Japan was the only case included in these two groups of literature. Although a single case study ($N = 1$) was often criticised for its

incapacity to reach a general theory, it could provide in-depth analysis and contribute to the knowledge (Ebbinghaus, 2005, p. 141). A single case study could be applied to examine the problematic case in the typology (see e.g., Goodin & Smitsman, 2000).

6.1.4 The Scope of Case Selection

In addition to the number of cases, another important issue is the scope of case selection. One criticism of Esping-Andersen's (1990) welfare regime typology was that his case selection strategy narrowly focused on eighteen OECD countries (see Section 2.2.3). In addition, Esping-Andersen did not justify his selection of 18 countries, although there were 24 members in the OECD before the publication of the three worlds in the 1980s. Turkey, Luxembourg, Iceland, and Southern European countries (i.e., Spain, Portugal, and Greece) were missing from Esping-Andersen's (1990) case selection. The selection of different cases often led to different conclusions. For example, sometimes Southeast Asian countries were examined by East Asian welfare regime analysts (see Chapter 3 for relevant discussion). Comparing Southeast Asian welfare states with their East Asian counterparts inevitably increased the diversity and undermined the robustness of the argument for the East Asian welfare model (see Section 3.1). Hence, it was important to review the scope of cases in comparative and typology studies.

Kim (2015) summarised five main approaches to case selection in welfare regime analyses. The first approach was to follow Esping-Andersen's (1990) selection of 18 industrialised countries in order to test the robustness of his framework (e.g., Bamba, 2006). The second approach was to select wider OECD countries. Some researchers questioned the representativeness of the eighteen countries in Esping-Andersen's (1990) framework. Therefore, they chose cases from wider OECD countries or regions (e.g., Japan, South Korea, Southern European, Central and Eastern European), which led to revision or a fourth cluster of welfare states (see e.g., Ferrera, 1996; Hudson & Kühner, 2009). A third approach went

beyond the OECD. Other scholars aimed at examining the welfare regime outside the OECD countries and regions, and they chose countries outside Europe and America, such as East Asia (see Chapter 3), Southeast Asia, and Latin America. The fourth approach put its emphasis on developing non-OECD countries, while the broadest fifth approach attempted to capture all nations. Some analysts (e.g., Wood & Gough, 2006; Hudson & Kühner, 2011) attempted to develop global welfare regimes including both industrialised and developing countries.

This thesis divides the scope of the case selection into roughly two categories: regional and cross-regional studies. Regional studies selected cases based on a specific geographical location (e.g., East Asia, Latin America, or Central and Eastern Europe). In terms of the number of cases, regional studies were usually accompanied by small-N case studies, which allowed researchers to examine and compare selected cases in more detail. In contrast, cross-regional analyses went beyond a specific geographic location and included cases from different parts of the world. Within cross-regional studies, three approaches could be identified. The first approach was to follow Esping-Andersen's (1990) eighteen OECD countries. However, researchers needed to be cautious when following Esping-Andersen's (1990) case selection strategies. The second approach was to choose OECD or EU countries. These countries shared relatively high levels of similarities for comparison (e.g., economic development and political institutions) and, more practically, data availability for OECD/EU members (Ebbinghaus, 2012). Nonetheless, the selection based on OECD and EU could be biased by "historical contingency" (i.e., observable real-world cases were influenced by the history of national states' formation) and "path dependency" (i.e., changes and variations in the OECD/EU dataset) (Ebbinghaus, 2005, 2012). The third approach was to select cases globally. There was no regional or organisational boundary for selecting the cases. As a result, this approach usually ended with a large-N study.

6.1.5 Summary

Table 6.1 summarises various approaches to case selection in the welfare/healthcare model business. For the medium-N and large-N studies applying quantitative methods, individual national contexts were less notable than other case selection strategies. Their selection of research objects was usually decided in advance, but this did not mean it was free from bias (Ebbinghaus, 2005). Small-N analysis was commonly found in regional studies. All chosen cases were often given similar attention. Small-N studies could be perceived as an expansion of a single case study. Therefore, case selection was also significant. For a single case study focusing on Japan, scholars tended to compare Japan and other countries, but Japan was seen as a central case, accompanied by detailed and in-depth qualitative analysis, while other cases received less attention. Since there was only one case, scholars needed to be careful when selecting cases and criteria, which were relevant to the robustness of their conclusion.

Number of N	Features	Scopes	Methods	Justification	Potential bias	Examples
Large-N Medium-N	Classifying countries into different groups but limited explanation on each case	Mainly cross-regional	Mainly quantitative	Pre-justified (e.g., date availability)	Heterogeneity Not random Historical contingency Path dependence	Esping-Andersen (1990)
Small-N	Focus on multiple cases (e.g., Japan + Asian tigers)	Mainly regional (can be cross-regional)	Qualitative case studies	Similarities	Selection based on geography	Holliday (2000)
Single case (N = 1)	Focus on one case (e.g., Japan) from a comparative perspective	One case	Qualitative case study	Theoretically important & authors' interest	Neither directly comparative nor generalisable	Kasza (2006) Estévez-Abe (2008)

6.2 Criteria Selection

In addition to case selection, another important element for typology studies was the choice of criteria or variables. The variety of typologies could be attributed to various criteria chosen by scholars. The criteria selection could be divided into two steps. The first step was to select the policy sectors. Then, the second step concerned the relevant concepts within the chosen policy sectors and operationalisation of these concepts. This section briefly discusses the choice of policy sectors (Section 6.2.1), and it shifts the focus to potential concepts and

variables in both welfare regime typologies (Section 6.2.2) and healthcare system typologies (Section 6.2.3).

6.2.1 Selection of Policy Sectors

Table 6.2 illustrates the selection of policy sectors in the literature. As many critics noted, Esping-Andersen's welfare regime typology mainly concentrated on income maintenance policies (see Section 2.2). These criticisms highlighted the importance of choosing policy areas. Although the choice of policy sectors was dependent on analysts' definitions of the welfare state, it was almost impossible to include all welfare policies. Welfare regime analyses represented by Esping-Andersen (1990) often emphasised cash transfers and income maintenance, such as old-age, unemployment, and sickness benefits. Facing the criticism raised by feminist scholars, welfare regime analyses also took family policies into consideration (see Section 2.2.4). In existing welfare regime research, the choice of policy sectors could range from a single policy area (e.g., pension regime, healthcare system typologies) to multiple policy sectors. For instance, Yang (2016) examined six types of welfare policies: education, healthcare, family, old-age income protection, housing, and passive labour market policies. However, in spite of the fact that almost all scholars justified their choice before their analysis, there were a limited number of scholars who demonstrated why certain policy sectors were omitted. For healthcare system typologies, the selection of policy area was not as prominent as in the welfare regime debate. Nonetheless, for example, there were some analysts attempting to establish long-term care typologies (see e.g., Ariaans et al., 2001; Fischer, 2001), but it seemed that comparative healthcare system researchers did not explicitly mention their scope of classification (i.e., health or healthcare system, see Chapter 4 for relevant discussion). Last but not least, it should be noted that selecting multiple policy sectors for analysis assumed the consistency (i.e., elective affinity) between

these policy areas (see Section 5.2 for relevant discussion). Hence, researchers should be cautious when analysing the welfare state as a broad concept including various policy sectors.

Table 6.2: Selection of Policy Sector

Dimension	Policy sectors	Examples
Multiple policy sectors (depend on the definition of the welfare state)	Income maintenance	Esping-Andersen (1990)
	Services	Stoy (2014)
	Cash benefits + services (+others)	Yang (2016) Kasza (2006)
Single policy sector	Healthcare (Healthcare system typology)	see Chapter 4
	Pension (Pension regime)	Soede & Vrooman (2008)

6.2.2 Selection of Concepts in Welfare Regime Analysis

After confining policy sectors, typologists needed to address the concepts or variables for the analysis, which was the other aspect of criteria selection. The selection of relevant concepts was one of the most significant bases for typology. Esping-Andersen's (1990) analysis was based on decommodification, stratification, and the welfare mix. There were other measurements to classify welfare states, such as social expenditure (Wilensky, 1975). Although in fact, scholars have applied more complicated and more detailed criteria, in the current welfare regime debate, many scholars have acknowledged the shortage of social expenditure approaches. Most scholars included expenditure but also examined other indicators (see e.g., Yorük et al., 2022). Hence, a more comprehensive framework was needed to capture the criteria selection.

Bonoli (1997) proposed a two-dimensional framework to classify welfare states. The first dimension was the quantity of welfare provision, which was measured by social expenditure. The second dimension was the form of welfare provision (i.e., Bismarckian

versus Beveridgean). The share of social expenditure financed by contributions was used to measure the division between Bismarckian and Beveridgean. Based on these criteria, Bonoli (1997) reached a 2×2 matrix (i.e., four types of welfare state) (p. 361). In contrast to Esping-Andersen (1990), the focal point of the two-dimensional approach was the input instead of the performance. On the one hand, as Esping-Andersen (1990) noted, the input did not necessarily reflect the exact output of a welfare state. One example was the inconsistency within the Beveridgean model. According to Bonoli (1997), liberal welfare regimes and social democratic welfare regimes in Esping-Andersen (1990) were classified into the Beveridgean model, but these two groups of countries were very different in terms of welfare performance. On the other hand, this two-dimensional framework seemed to be oversimplified. Firstly, Bonoli (1997) argued that the Bismarckian-Beveridgean continuum was a French tradition in the 1990s (p. 356), but he did not notice that this division has been applied to classify healthcare systems. The Bismarckian and Beveridgean dichotomy could not be simply equal to the contribution because it included more elements, such as coverage, ownership, and regulation. Secondly, stratification in Esping-Andersen (1990) was able to capture the core of the Bismarckian-Beveridgean division, which was whether the welfare provision was based on merit or citizenship. This was relevant to financing the welfare state if we only considered the input side.

Korpi and Palme (1998) suggested that welfare state typologies for different purposes could choose criteria from cause, institution, and outcome (p. 665). Similar to Esping-Andersen (1990), Korpi and Palme (1998) interpreted institutions from the perspective of power resources (i.e., institutions reflected the conflict of different interest groups) (p. 666). In terms of operationalisation, Korpi and Palme (1998) used the degree of universalism, benefit level principle, and form of governing social insurance to measure institutions of welfare states (pp. 666-667). Although Korpi and Palme (1998) only focused on the

institutional aspect and did not provide further explanation on other aspects, these concepts were helpful in selecting criteria for classifying the welfare states.

Compared to previous analyses, Yörük et al. (2019) systematically discussed the variable selection in the welfare modelling business instead of proposing their own measurement. They distinguished four types of variables. The first type was welfare policy variables, which indicated the welfare effort invested by the government. Format, benefit level, and eligibility were included in this category. The second type was developmental outcome variables. This type of variable was used to measure the outcome of the welfare state, especially those related to economic and human development. The third type was contextual variables capturing the social-economic background of the welfare state, whereas the fourth type was political variables such as the democracy index and the percentage of parliament seats owned by leftist parties (pp. 628-629). After conducting an analysis of variables selected by welfare regime literature, they found that the welfare policy variables are underused (p. 642). They also insightfully pointed out that the criteria selection should be based on theory rather than data availability (p. 643).

Following Yörük et al. (2019), Table 6.3 summarises major concepts in various welfare regime typologies with several changes. Both political variables and contextual variables mentioned by Yörük et al. (2019) are largely used in identifying the cause of welfare development instead of classifying welfare states based on their characteristics. Therefore, in Table 6.3, both political and contextual variables are grouped into the cause/context. Culture is added because some authors emphasised the role of Confucianism in the development of East Asian welfare systems (see Chapter 3). Policy/institution variables correspond to welfare variables in Yörük et al. (2019). The difference between policy/institution and performance/outcome variables is that the former emphasises welfare provision *de jure* (e.g., what and how much benefits are provided according to current

welfare policies), while the latter focuses on welfare *de facto* and measures the outcome of the welfare policies in reality. The expenditure approach used by Wilensky (1975) and the concepts chosen by Esping-Andersen (1990, 1999) can be perceived as examples of policy/institution. In contrast, concepts such as redistributive effects and human development can be used to capture the performance of the welfare state.

Table 6.3: Major Concepts in Welfare Regime Typologies

Cause/Context	Policy/Institution	Performance/Outcome
Political	Expenditure	Redistributive effects
	Decommodification	
Social-economic & Demographic	Stratification	Human development
	Welfare mix	
Cultural	Defamilialisation	

6.3.3 Selection of Concepts in Healthcare System Typologies

In healthcare system typologies, due to the lack of a dominant framework, the choice of concepts was diverse in the literature. Nevertheless, as Table 6.4 shows, similar to welfare regime studies, concepts used to classify healthcare systems could be roughly divided into three types: the first type addressed the context of healthcare systems; the second type emphasised healthcare policy and institutions in healthcare systems, while the third type concentrated on the outcome or performance of healthcare systems.

Some healthcare system typologies before 2000 considered contextual concepts such as politics, socio-economic indicators, technology, and culture, but these early typologies mainly adopted eyeballing qualitative analysis instead of robust quantitative analysis (see Section 4.2.1). In recent classifications of healthcare systems, contextual concepts were rarely

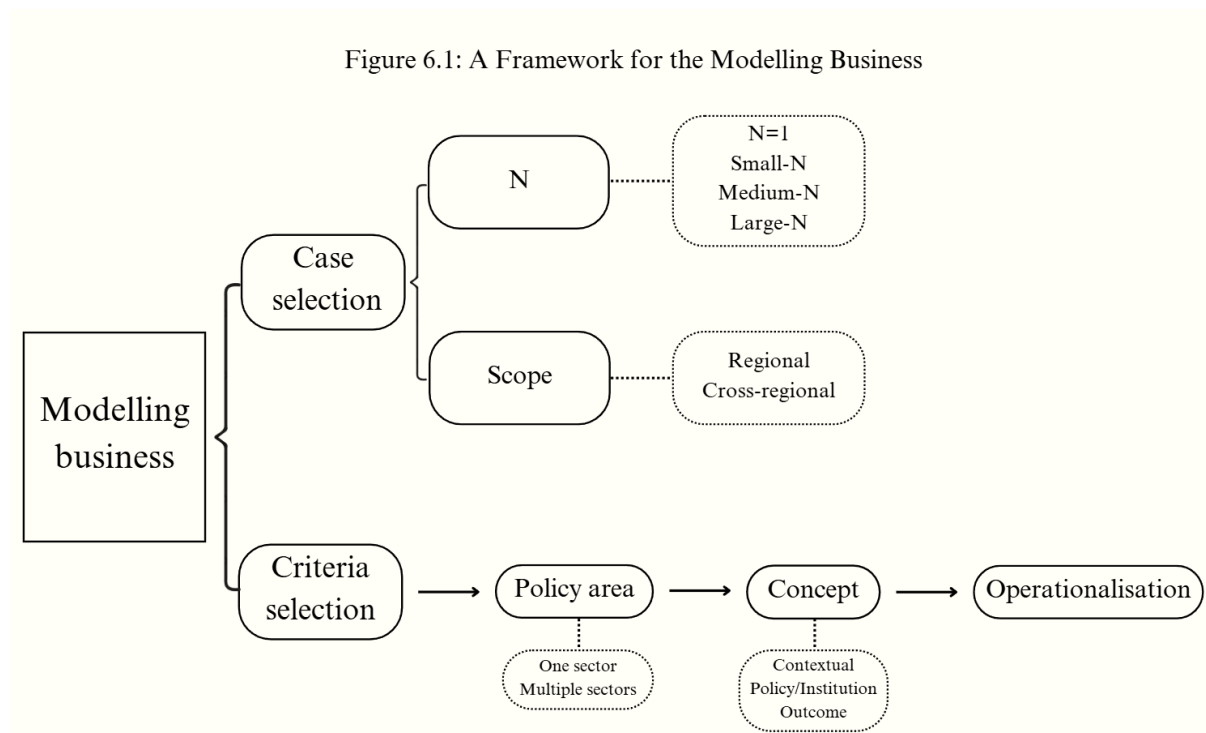
included. Their focuses were policy and institutions of healthcare systems, as almost all healthcare system typologies reviewed in Chapter 4 included policy/institution concepts. Despite the variety of concepts in healthcare system typologies, a representative framework was suggested by Wendt et al. (2009), who focused on the actors (i.e., state, private, and society) in financing, provision, and regulation. Financing, provision, and regulation could capture most concepts and indicators in other healthcare system typologies (see de Carvalho et al., 2020). The systematic review conducted by de Carvalho et al. (2020) showed that most scholars classified healthcare systems based on financing (29 out of 41), provision (29 out of 41), and regulation (28 out of 41). They also tended to combine more than one concept (p. 289). Interestingly, Wendt and colleagues' (2009) idea of investigating the role of governmental, private, and societal actors could be seen as the healthcare mix, which was similar to the welfare mix (i.e., state, market, and family) in the welfare state literature (see e.g., Powell, 2019b). Although many concepts could be used to measure health/healthcare outcomes, such as health inequality, responsiveness, and efficiency (see Evans & Murray, 2003), healthcare system typologists mainly used population health indicators (e.g., life expectancy, mortality rate) as indicators in their typologies. For instance, a few typologies took performance/outcome indicators into account (e.g., Moolla et al., 2021; Reibling et al., 2019; S. Yu, 2014).

Table 6.4: Major Concepts in Healthcare System Typologies

Cause/Context	Policy/Institution	Performance/Outcome
Political (Health politics)	Financing	Population health
Social-economic & Demographic	Provision	
	Regulation	Health inequality
Cultural	Healthcare mix	

6.3 A Unified Framework

Figure 6.1 summarises the two main issues in classifying welfare states and healthcare systems: case selection and criteria selection. Both have a significant influence on the result of the typology. The selection of cases can vary from a single case study to a large-N quantitative analysis. Cases can be chosen based on a single region or different regions. However, the justification for choosing cases deserves more examination in the current welfare modelling business. Concerning the criteria, policy areas, concepts, and operationalisation of concepts are three important aspects that scholars need to consider.



The previous section discussed the criteria and concepts used in welfare regime typologies and healthcare system typologies. Table 6.5 is a unified framework of criteria combining Table 6.3 and Table 6.4. Both income maintenance and healthcare share similar contextual factors. Cause/contextual factors are defined as the socio-economic, demographic, political, and cultural contexts of the welfare system and the healthcare system. Examples of operationalisation of political context/cause criteria are the percentage of parliament seats occupied by leftist parties, the density of labour unions, and levels of democracy for politics;

GDP and the percentage of aging people can be considered as the operationalisation of socio-economic and demographic contexts; whilst cultural indicators are more often used in qualitative analysis but relatively rare in quantitative analysis.

Table 6.5: A Unified Framework of Concepts

Cause/Context	Policy/Institution	Performance/Outcome
Political	Financial input	
Socio-economic & Demographic	Generosity	Welfare system & Healthcare system
	Integration	Performance/Outcome
Cultural	Welfare mix/ Healthcare mix	

Policy/institution indicators can measure the institutional characteristics of the welfare system and the healthcare system. Based on Table 6.3 and Table 6.4, four main types of policy/institution concepts (i.e., financial input, generosity, integration, and welfare/healthcare mix) can be identified. In addition to policy/institution, performance/outcome is another important dimension in the welfare/healthcare modelling business. Table 6.6 illustrates how concepts in the unified framework correspond to the concepts used in welfare regime literature and healthcare system typologies. In order to establish a basis for comparing the welfare regimes and healthcare system typologies, the rest of this section explains how concepts in different frameworks correspond to the concepts in the unified framework.

	Context	Policy/Institution			Performance/Outcome
Welfare regime	Political Socio-economic Demographic Cultural	Expenditure	De-commodification	Corporatism in Stratification	Welfare mix Redistribution Poverty
Healthcare		Finance	Affordability Provision Access Regulation	Corporatist healthcare state Integration/Separation	Healthcare mix Healthcare system performance Population health
Unified		Financial input	Generosity	Integration/Segmentation	Welfare/Healthcare mix Welfare/Health Performance/Outcome

6.3.1 Financial Input

The first important concept used in the welfare/healthcare modelling business is the financial input. The financial input can be used to measure the financial efforts invested in income maintenance or healthcare by the state. It corresponds to the social expenditure approach in the welfare regime literature (see Table 6.3) and the financing dimension in healthcare system typologies (see Table 6.4). Expenditure figures are widely applied in welfare regime analysis and healthcare system typologies, but it should be noted that using spending data has its limitations. Esping-Andersen (1990) pointed out that social expenditure was not sufficient to capture welfare efforts (cf. Chapter 2 for relevant discussion). In addition, De Daken and Kittel (2007) found that data from international organisations (e.g., OECD) had several problems: the data were conceptually ambivalent and inconsistent; missing values existed in many indicators; the consistency between different datasets was questionable; the measurement and concept could change over time, even within datasets (pp. 99-100).

Despite these limitations, there are three reasons for incorporating financial input into this unified framework. Firstly, disaggregated social expenditure is a possible response to Esping-Andersen's (1990) critique of the use of aggregated expenditure. Disaggregated expenditure figures can reflect "what welfare states do" and generate meaningful questions about patterns and causes of specific types of spending activities (Castles, 2009). The patterns of social expenditure can also be used to understand the implications of welfare states (Obinger, 2021). Similarly, healthcare expenditure is also an important institutional characteristic of a healthcare system. Secondly, although Esping-Andersen did not include social expenditure in his classification, expenditure figures are largely applied as indicators in existing typologies (e.g., Bonoli, 1997; Goodin, 2001; Jensen, 2008; Powell & Barrientos, 2004; see Chapters 2 & 4 for more details). Thirdly, as Table 6.4 reveals, financing the

healthcare system is an important indicator of healthcare system typologies. In order to be consistent, social or welfare expenditure needs to be considered when classifying welfare states. It should be noted that, as Siegel (2007) argued, the expenditure approach can still generate insightful perspectives for examining welfare state dynamics, but “spending only” hardly reflects the landscape of the welfare state. Modern welfare states involve diverse institutions and configurations. Hence, “it is not reasonable to draw too many generalisations from a rather restricted set of one-dimensional measures of welfare state size” (Siegel, 2007, p. 67).

6.3.2 Generosity

Generosity is one of the most important concepts in the welfare/modelling business. Ferre (2023) proposed three dimensions to measure different welfare policies: inclusion (i.e., coverage), generosity (i.e., the levels of benefits), and equity (i.e., whether benefits are distributed equally). Regarding cash benefits, generosity was defined as the quantity, while for the service, generosity was the extent and quality of the service (p. 104). Although Ferrera (2023) only focused on classifying Latin America, these three dimensions could be used to classify all welfare states and healthcare systems. Nevertheless, inclusion and generosity can be combined into one dimension because income maintenance benefits and healthcare provisions can be regarded as generous if they have higher coverage rates. In the unified framework, generosity is defined as coverage, eligibility, and the level of benefits. Since there is no corresponding concept for the level of benefits in healthcare, generosity is defined as affordability, provision, and access regulation.

In terms of cash benefits, the concept of generosity corresponds to Esping-Andersen’s (1990) decommodification (see Table 6.3). Decommodification measures to what extent a person can live without relying on the labour market (see Chapter 2 for more details). Welfare schemes with higher levels of decommodification are more generous. In addition, the

operationalisation of the generosity of welfare policy is similar to decommodification.

According to Scruggs and Tafoya (2022), the generosity of a welfare policy was measured by replacement rate, duration, condition, and coverage (pp. 793-794). Esping-Andersen (1990) applied similar indicators to construct his decommodification index.

The reason for using generosity instead of decommodification in the unified framework is to avoid the normative assumption and theoretical problems behind decommodification. Based on the interpretation of Polanyi and the Marxist tradition (see Section 2.2.1 for more details), decommodification assumes that a welfare system is better if it can decommodify labour. The social democratic welfare regime possessing the highest levels of decommodification is perceived as “good”. On the contrary, the liberal welfare regime with the lowest levels of decommodification is “bad”. The conservative welfare regime is neither “good” nor “bad”. Instead, it is “ugly” because the provision of modest levels of decommodification adheres to wrong principles (i.e., based on status) (Manow, 2004). Furthermore, decommodification in healthcare system typologies can be mainly captured by public/private healthcare mix indicators, such as private expenditure and private hospital beds (Bambra, 2005a). Using decommodification in the unified framework will cause confusion in the measurements of cash benefits and healthcare services.

In the realm of healthcare, there is no match for the level of benefits, as the provision of healthcare is in the form of services rather than cash benefits. Toth (2019) used generosity and prevalence to measure the coverage of healthcare insurance in Europe. For Toth (2019), generosity was defined as what is covered, while prevalence was defined as who is covered. Nevertheless, the coverage rate can be perceived as an indicator of generosity. A generous healthcare system is accompanied by the wide coverage of the population. In the unified framework, the generosity of a healthcare system is defined as three aspects: affordability, provision, and access regulation. Affordability is a core dimension for measuring the

generosity of a healthcare system. It relates to service charges when accessing healthcare services (i.e., the co-payment and out-of-pocket payment of patients who access healthcare services). The healthcare services are free of charge at the point of use in an ideal-typical healthcare system with the highest levels of generosity. When other conditions remain the same, higher levels of service charges or co-payments represent lower levels of generosity. Similar to pension and other income maintenance policies, the contribution rate to health insurance is another dimension to measure the generosity of healthcare systems.

Nonetheless, only service charges or co-payments are insufficient to measure the generosity of a healthcare system. Even though accessing healthcare services is free, if services are not available to most populations in a given healthcare system, this healthcare system cannot be perceived as generous. To measure the generosity of a healthcare system, provision (i.e., service availability) needs to be incorporated. Higher levels of service availability and coverage denote higher levels of generosity. It should be noted that the provision here is narrower than the provision defined by previous scholars who measured the provision dimension of healthcare by ownership, profit orientation, human resources, facilities, etc (Böhm et al., 2013; de Carvalho et al., 2020; Wendt et al., 2009). Within these indicators, staffing levels and hospital facilities are more appropriate for measuring the service availability of the healthcare system. Whilst other indicators, such as ownership, will be discussed within the healthcare mix (see Section 6.3.4).

A third dimension of the generosity of a healthcare system is access regulation (i.e., gatekeeping mechanism or patients' freedom to choose service providers). A healthcare system still cannot be perceived as generous if there is strong access regulation. Although healthcare services are widely available and free of charge, a healthcare system is not generous if patients are unable to access or can only access limited services due to the strong effects of access regulation. To measure the generosity of a healthcare system, only access

regulation is applied, while the regulation dimension is more complex in previous healthcare system typologies. According to Wendt et al. (2009), the regulation focused on the role of actors in the triangle relationship between patients, financial agencies, and providers. More specifically, the regulation includes three aspects: between patients and financial agencies (i.e., coverage, mode of financing); between patients and providers (i.e., patients' choice of providers and the range of services included); between financial agencies and providers (i.e., the remuneration and providers' access to financial agencies). Within these dimensions, access regulation (i.e., gatekeeping) is the most relevant to the generosity of a healthcare system.

6.3.3 Integration

To reflect the institutional characteristics of welfare systems and healthcare systems, the concept of integration/segmentation is introduced to classify welfare systems and healthcare systems. The integration/segmentation measures to what extent a welfare system or healthcare system is unified. In an integrated system, income maintenance or healthcare services are provided through a unified and universal system, while a segmented system is characterised by diversified schemes. A possible approach to operationalise integration and segmentation is the number of welfare or healthcare schemes existing in a specific welfare system or healthcare system. The concept of integration/segmentation is rooted in the division between the Beveridgean model and the Bismarckian model in the literature. The differences between the two models are relevant to measuring whether the provision of cash benefits and healthcare services is integrated or segmented. The use of the division between two models can be found in both welfare regime literature and healthcare system typology literature (see Chapters 2 & 4), and it should be noted that the terms "Beveridgean" and "Bismarckian" can be used differently in different typologies. Nonetheless, an important feature that distinguishes between the two models is integration and segmentation. In both

welfare regime literature and healthcare system typologies, the Beveridge model is accompanied by a universal and integrated provision of cash benefits and healthcare services (i.e., a general plan for the whole population), while the Bismarckian model is characterised by segmentation and corporatism in welfare provision (i.e., income-related social insurance) (Bonoli, 1997). In line with the division between the two traditions in social policy, in addition to generosity, integration or segmentation of welfare systems and healthcare systems will also be considered.

In terms of cash benefits, on the one hand, the concept of segmentation overlaps with corporatism used by Esping-Andersen (1990) to measure the social stratification of welfare states. As Chapter 2 reviewed, different welfare regimes had different stratification effects. Corporatism was a characteristic of conservative welfare regimes. It was defined as “the segmentation of public pension programmes based upon major occupational categories” (Scruggs & Allan, 2008, p. 646). In contrast, the integration model is accompanied by universal and unified schemes, which are features of social democratic welfare regimes. Both corporatism and segmentation can be used to measure how cash benefits are distributed among different groups of people, but the idea of corporatism is based on occupation, while integration focuses on the institutional features of the welfare system. This means that all pension schemes will be taken into consideration, even though they are not divided according to occupations. It should be noted that stratification implies inequality, which is considered as a performance/outcome instead of an institutional feature in this thesis (see below).

Regarding healthcare systems, Moran (1999, 2000) mentioned the concept of the corporatist healthcare state, in which the role of the state was marginal. In corporatist healthcare states (such as Germany), public law institutions played a dominant role in the consumption, provision, and technology. Unfortunately, since Moran (1999, 2000) analysed three healthcare states qualitatively, the operationalisation of corporatism in the healthcare

system remained unclear. In line with corporatism in the welfare system, corporatism in a healthcare state can be captured by the number of healthcare insurance schemes based on occupation.

It should be noted that a few scholars used integration as the standard for classification. For instance, Toth (2016) considered integration and separation as modes of provision. In an integrated healthcare system, providers of healthcare services and insurers are identical, while in a separate healthcare system, insurers do not directly provide healthcare services. Furthermore, Toth (2020) suggested five dimensions of integration: insurers and providers; primary care and secondary care; gatekeeping; freedom of choice; solo or group practice of general practice. Toth's (2016, 2020) concept of integration/separation considered the relationships between patients, insurers, and providers. However, it should be noted that the integration/segmentation in the unified framework is different from the integration/separation mentioned by Toth (2016, 2020): the integration/segmentation only considers the structure of insurers (i.e., mainly about how many insurers exist in a healthcare system). There are two reasons for using integration/segmentation rather than the broader integration/separation. Firstly, the consistency for measuring welfare states and healthcare systems is important in the unified framework. Unlike healthcare, it is rare that the provider and the insurer of cash benefits are different. Therefore, there is no corresponding variable or concept that can be used in cash benefits if we use integration/separation, while the narrower integration/segmentation is suitable. Secondly, some indicators (e.g., gatekeeping mechanisms and patients' freedom of choice) in integration/separation have been covered by the measurement of the generosity of a healthcare system (see above). Hence, integration/segmentation that can be used to measure the structure of financial schemes (i.e., income maintenance programmes or healthcare) is applied in the unified framework.

6.3.4 The Welfare/Healthcare Mix

Another important dimension to classifying welfare states and healthcare systems is the actors in welfare/healthcare provision. The welfare mix (i.e., welfare triangle or welfare diamond) is widely used in analysing welfare states (see e.g., Abrahamson, 2011; Powell & Barrientos, 2004). There are several frameworks to capture the welfare mix. The first one is the public/private mix, which is used by Esping-Andersen (1990) in his welfare regime typology. Later, Esping-Andersen (1999) added family as a third dimension. A welfare triangle consisting of the state, the market, and the family could be identified. Some scholars added community as a fourth aspect to form a welfare diamond (see e.g., Ochiai, 2009). According to Powell (2019b), there were four components in the mixed economy of welfare: state, market, voluntary, and informal (pp. 9-10). The role of the state in welfare and healthcare provision could be measured by financial input and generosity. In the unified framework, the public/private mix rather than the welfare triangle or the welfare diamond is used. It should be noted that although the private sector includes all non-public elements of welfare provision, which means that the voluntary and informal sectors are included, the major focus of the private side of the welfare mix is the market. Considering the role of family and community seems to be redundant to the aim of this thesis.

Firstly, non-governmental and non-market organisations mainly provide services to their beneficiaries (Macmillan & Rees, 2019, p. 93). Similarly, the informal provision of welfare is regarded as the provision of informal care based on close relationships (Powell, 2019a, p. 114). Neither voluntary nor informal is prominent as the state and market in terms of income maintenance cash benefits. Secondly, it is argued that the family has played an important role in providing welfare, especially in East Asia (see Chapter 3). Nonetheless, when Esping-Andersen (1999) constructed the defamilialisation index, he mainly focused on the role of the family in providing care, such as the state's commitments to servicing and

subsidising. The concept of defamilialisation largely falls into the realm of family policy rather than income maintenance and healthcare. Thirdly, regarding healthcare, none of the existing healthcare system typologies has explicitly incorporated the role of voluntary and informal sectors. The reason might be that the provision of most healthcare services requires expert knowledge and medical facilities, which are usually not possessed by actors in the informal sectors. The role of the informal sector (e.g., family and community) is more significant in offering care. As mentioned above, long-term care (LTC) is excluded from the quantitative analysis in this thesis. Given that there is no corresponding concept for defamilialisation in healthcare, defamilialisation is excluded. Furthermore, as Powell (2019a) pointed out, the informal sector tends to be invisible and very difficult to identify and quantify. In practical terms, accurately measuring the informal provision of welfare is not feasible for quantitative cross-national analysis involving a relatively large number of cases.

6.3.5 Performance/outcome

Another important aspect of comparative research on welfare states and healthcare systems is their performance or outcome. Most classifications of welfare states and healthcare systems include the performance/outcome indicators, but it is relatively difficult to identify a unified indicator to measure the performance/outcome for the provision of cash benefits and healthcare, as measurements of welfare state and healthcare system performance are largely different.

The human development index (HDI) developed by the United Nations (UN) (2025) is a possible option for measuring the overall outcome for both cash benefits and healthcare. However, the HDI might be more useful when measuring the welfare outcome of developing countries because all developed economies have similar levels of the human development index. More importantly, the HDI is operationalised by life expectancy, expected years of schooling, and gross national income (GNI). Life expectancy is often used to measure the

outcome of healthcare systems, but expected years of schooling and GNI are less relevant to the welfare state and healthcare system. Although in the unified framework, the performance/outcome is measured by the well-being of the population, due to the absence of unified indicators, the outcome of welfare systems and healthcare systems will be operationalised by different indicators (see Chapter 8 for more details).

Many welfare schemes aim at reducing inequality and poverty as commitments to establish social rights of citizenship (cf. Saunders, 2021). The macroeconomic outcomes of the welfare state are considered by scholars (cf. Mares & Pierson, 2021). Influenced by feminism, gendered outcomes of the welfare state have attracted intellectual interest (cf. Hook & Ruppner, 2021). It seems that macroeconomic indicators such as employment and economic growth can be impacted by socio-economic factors other than the welfare state, especially when the welfare state is considered in the narrow sense as income maintenance measures. Regarding the gendered effects of the welfare state, the gendered outcomes of welfare states are closely related to family policy and defamilialisation. As mentioned above, family policy sectors and defamilialisation are excluded from this thesis. Therefore, inequality and poverty are chosen to measure the performance/outcome of welfare states when conducting the cluster analysis.

In terms of the outcome and performance of the healthcare system. Before examining potential measurements, it is necessary to distinguish between the performance of the healthcare system and the outcome of the health system (see Section 4.1). Following Powell and Exworthy (2011), healthcare concerns institutional features and structure, while health is defined broadly as the population's health, which not only includes the healthcare system and healthcare services but also considers different actors' influence on health. Hence, the performance of the healthcare system is confined to healthcare institutions, structures, and processes. In contrast, the outcome of the health system consists of a wider range of

indicators. In existing healthcare system typologies, scholars either incorporated health outcomes (such as life expectancy and mortality rate) in classification or excluded the performance/outcome dimension (see Chapter 4).

6.4 Case Selection and Criteria Selection in This Thesis

Following Figure 6.1, this section demonstrates case selection and criteria selection strategies in this thesis. In general, this thesis adapts $N = 1$ (i.e., Japan-focused) as its overall case selection strategy. For quantitative analysis, medium- N is chosen to provide an up-to-date classification of the Japanese welfare state and healthcare system. Regarding the scope of case selection, this thesis selects cases from different regions. This case follows the choice of Esping-Andersen (1990) and incorporates East Asian welfare systems into the analysis. The rationale for choosing OECD 18 plus four Asian tigers derives from previous literature (see Chapters 2 & 3). On the one hand, this thesis extensively engages with Esping-Andersen's (1990) welfare regime typology and builds upon the framework established by the three worlds welfare regime. Therefore, in order to classify Japan within the framework, it is important to be consistent in terms of case selection. On the other hand, as Chapter 3 reveals, Japan is one of the East Asian welfare regimes. Taking the contributions from the discussion on East Asian welfare regimes into consideration, the welfare systems in South Korea, Taiwan, Singapore, and Hong Kong are included. It should be noted that this thesis acknowledges the limitations of selecting eighteen OECD welfare states (see Section 6.1), but increasing the number of cases will result in higher levels of complexity (e.g., more worlds of welfare capitalism) and losing the focus on the case of Japan.

In line with previous literature, for classifying welfare states, this thesis only focuses on cash benefits such as old-age pension and unemployment benefits, whilst for classifying the healthcare system, healthcare is the only policy sector included. Given that one aim of this thesis is to examine the consistency between different welfare policies, it is more

appropriate to select policy sectors in a narrower way because it is difficult to evaluate the consistency if including multiple policy sectors (e.g., healthcare, family policy, housing, education). Furthermore, the inclusion of multiple policy sectors assumes that there is consistency between them, which is questionable. Regarding the classification of healthcare systems, LTC is excluded, since LTC indicators are not incorporated in healthcare system typologies (see Chapter 4), and LTC has its own classification (see e.g., Ariaans et al., 2021; Fischer et al., 2021). It should be noted that the exclusion of other policy areas in this thesis does not mean that these policy sectors are not important.

Regarding the concepts used in the analysis, this thesis does not take contextual criteria into classification because classifications in this thesis are descriptive and mainly focus on institutional features and performance/outcomes. The concepts selected in the analysis follow the unified framework as shown in Table 6.5. The operationalisation of these concepts is demonstrated in Chapter 8.

Chapter 7 Methodology

Chapters 2-4 review various welfare regime typologies and healthcare system typologies. Chapter 5 examines the theoretical basis for welfare/healthcare modelling business by reviewing ideal typical and real typical approaches. Chapter 5 also compares both streams of typologies and identifies that more research needs to be conducted to fill the gap between the two areas, especially for the case of Japan. Although most welfare regime typologies and healthcare system typologies were covered in previous chapters, the methodological issues behind these typologies were rarely discussed in the literature. Chapter 6 addresses the case selection and variable selection to develop the unified framework for classification. This chapter is devoted to the methodology of this thesis. Similar to other social science studies, Section 7.1 briefly addresses the philosophical assumptions in welfare state typology and healthcare system typology, and then Section 7.2 outlines the research questions and develop relevant hypotheses for this thesis. Section 7.3 reviews methods in previous literature and then justify the methods that will be used in this thesis.

7.1 Research Philosophy

Regarding research philosophy, textbooks in social sciences and politics tended to distinguish between positivism and interpretivism (see e.g., Bryman, 2016; Grix, 2019; Marsh et al., 2018). However, welfare regime scholars and healthcare system typologists rarely stated their philosophical positions explicitly (e.g., ontological and epistemological assumptions behind their typologies). Although scholars of welfare regime typologies and healthcare system typologies might have other philosophical positions than positivism and interpretivism, if we applied the positivism-interpretivism continuum, most welfare regime typologies and healthcare system typologies fell into the positivism side. This was because the aim of typologies was to simplify the empirical world (van Kersbergen, 2019, pp. 120-121). The process of constructing typologies was similar to generalisation, which

corresponded to positivism (Neuman, 2014, p. 97). Typologists could also be critical realists (i.e., a middle ground between positivism and interpretivism) if researchers perceived ideal types as a tool to explain reality without considering it a complete or perfect reflection of the empirical world (Stapley et al., 2022, p. 2). In addition, as Section 7.3 shows, methods used by scholars to classify welfare states and healthcare systems are largely positivist.

7.2 Knowledge Gaps and Research Questions

As outlined in Chapter 1, Chapters 2-4 are literature reviews to address the first research objective to examine existing welfare regime typologies and healthcare system typologies. To address the second research objective (i.e., classifying Japan), this section develops empirical research questions (RQ) based on existing literature and theoretical bases reviewed above. RQ1 focuses on classifying the Japanese welfare state; RQ2 shifts to classifying the Japanese healthcare system. Finally, based on the classification of RQ1 and RQ2, RQ3 examines the consistency between the Japanese welfare state and the healthcare system.

7.2.1 Classifying the Japanese Welfare State

RQ1 addresses the long-lasting debate on the classification of the Japanese welfare state. Although a great number of researchers have engaged in this problem (see Chapters 2 & 3), there were several reasons for readdressing the classification of the Japanese welfare state. Firstly, the classification of the Japanese welfare state remained controversial. On the one hand, following Esping-Andersen's (1990) framework (see Chapter 2), Japan was grouped with other liberal welfare regimes or conservative welfare regimes in research focusing on classifying advanced welfare states. It was sometimes treated as a hybrid. Despite the large number of existing classifications and categories, there was no consensus on the category that the Japanese welfare state belongs to (cf., Powell, Kim, and Kim, 2020). In addition, most scholars developed their own classifications based on different criteria and policy sectors,

which increased the difficulties of reaching a consensus on how to classify the Japanese welfare state. On the other hand, as reviewed in Chapter 3, scholars attempting to expand welfare regime analysis to East Asia tended to consider that Japan shared some similarities with other East Asian welfare systems in terms of culture, politics, and socio-economy. Nevertheless, the existence of the East Asian welfare model was questioned by scholars, especially in the post-productivist era. Furthermore, beyond Esping-Andersen's welfare regime and the East Asian welfare model, some analysts interpreted the Japanese welfare state in various ways (e.g., emphasising functional equivalents). These alternative explanations sometimes reached the conclusion that Japan was similar to other advanced welfare states, while Japan-based scholars usually highlighted the uniqueness. In short, although a large number of researchers have classified the Japanese welfare state, there was little consensus on the result of the classification.

Secondly, recent research aiming at classifying the Japanese welfare state remained largely qualitative (see e.g., Hong, 2022; Nam, 2020; Shizume et al, 2021). Quantitative analysis, such as cluster analysis, has been absent in recent years. As reviewed in Chapter 2, one of the recent academic articles using robust quantitative methods is Danforth (2014). The data used in this research is from 1950 to 2000. Another recent quantitative research conducted by Yorük et al. (2022) made use of the original dataset, including the statistics from 1985 to 2015. As post-productivist studies have revealed (see Chapter 3), East Asian welfare systems experienced a series of reforms, which might change the logic of welfare state development. It should be noted that the use of qualitative case studies limited the ability to systematically compare the Japanese welfare state with other advanced welfare states in the West. This was important because Japan was not the only country that had experienced welfare reforms in recent decades. In order to capture the latest development systematically and comprehensively, robust quantitative research, including medium-N or

large-N, was needed.

Thirdly, it was helpful to examine the fitness of Japan to existing welfare regimes (i.e., conservative, liberal, or productive), since Japan was a critical case in the different welfare regime typologies (i.e., included by both Esping-Andersen and East Asian welfare regime research). Although many researchers devoted themselves to classifying welfare states using quantitative methods, most of them, especially followers of Esping-Andersen (1990, 1999), tended to focus on the comprehensive picture with less attention given to the case of Japan (see e.g., Castles & Obinger, 2008; Scruggs & Allan, 2006). In other words, their aims were classifying welfare states (i.e., the forest) but not classifying the Japanese welfare state (i.e. the tree). A few scholars have examined the classification of welfare states from the perspective of goodness of fit, such as Ferragina and Seeleib-Kaiser (2011), but Japan was excluded from their research. Other scholars also examined the membership by qualitative comparative analysis (QCA) or fuzzy-set ideal type analysis (FsITA) (e.g., Hudson & Kühner, 2009, 2011; Yang, 2016), but their framework was productive-protective instead of Esping-Andersen's three worlds framework.

Therefore, although the debate about classifying the Japanese welfare state has lasted for decades, it is still worth examining the classification issue. The research question addressing the issue of real-typical classification of welfare states will be:

RQ1: To what extent can the Japanese welfare state be classified with other advanced welfare states based on the latest data?

Based on the categories suggested by Esping-Andersen's (1990, 1999) welfare regime typology, three hypotheses can be developed (see also Powell, Kim, & Kim, 2020):

H1-1: The Japanese welfare state can be grouped with social democratic welfare regimes (e.g., Sweden).

H1-2: The Japanese welfare state can be grouped with conservative welfare regimes

(e.g., Germany).

H1-3: The Japanese welfare state can be grouped with liberal welfare regimes (e.g., the USA).

Following the discussion of East Asian welfare regimes, a fourth hypothesis can be developed:

H1-4: The Japanese welfare state can be grouped with East Asian welfare systems (e.g., South Korea).

Furthermore, it is possible that the Japanese welfare state is unique, which leads to another hypothesis:

H1-5: The Japanese welfare state remains an outlier (i.e., the Japanese welfare state does not belong to any category in existing welfare regime typologies).

As shown in Chapter 2, the majority of researchers supported either H1-2 or H1-3 (e.g., Esping-Andersen, 1990, 1999). Analysts of East Asian welfare regimes were likely to support H1-4 (e.g., Holliday, 2000), while a few scholars specialising in Japan were in favour of H1-5 (e.g., Takegawa, 2005, 2009). In contrast, H1-1 received little support from existing research. The systematic review of Powell, Kim, and Kim (2020) found that no writer classified Japan as a social democratic welfare state. In addition to these five hypotheses, it was also possible that Japan was classified as a hybrid case, which was also supported by some scholars (cf. Powell, Kim, & Kim, 2020). Since this thesis will examine the fitness of the classification, the hybrid case will be interpreted as a similar level of the membership degree for multiple categories.

7.2.2 Classifying the Japanese Healthcare System

Some commentators have pointed out that Esping-Andersen (1990) narrowly focused on cash and neglected the service in welfare provision (see e.g., Jensen, 2008; Kautto, 2002). RQ2 only considers the benefits aspects of welfare states (i.e., mainly pension and

unemployment) and does not cover other policy sectors. In order to include the service sector into account, healthcare, as one of the most important types of service in a welfare state, will be considered in the next research question. It should be noted that the service provided by a welfare state does not include the healthcare system only. Other policy sectors, such as the LTC system, are important policy aspects in the service sectors. Nonetheless, this thesis concentrates on the healthcare system, as it is not feasible to cover all aspects.

The main reason for addressing the classification of the Japanese healthcare system was that, unlike the frequent and prolonged debate about the Japanese welfare state, little attention has been given to the Japanese healthcare system. On the one hand, comparative healthcare system analysts also developed various real typical typologies. Japan was sometimes included in these typologies (see Chapter 4). Although a dominant framework did not exist in the field, scholars usually classify Japan with other Bismarckian healthcare systems, based on the ideal types proposed by OECD (1987). Nevertheless, similar to most welfare regime scholars, comparative healthcare system analysts mainly focused on classifying healthcare systems (i.e., the forest) but pay less attention to a specific case (i.e., the tree). Small-N and single case studies addressing the classification of the Japanese healthcare system were largely absent. On the other hand, East Asian welfare scholars did investigate the Japanese healthcare system (see Chapter 3), but their examination served their arguments on the East Asian welfare regimes (either denying or supporting) since their main focus was the welfare state as a whole instead of the healthcare system itself. In addition, neither of these scholars has examined the goodness of fit of the Japanese healthcare system.

Another reason for investing intellectual efforts in classifying healthcare systems was that there was an implicit controversy between East Asian welfare regime researchers and the developers of major healthcare system typologies. Despite the fact that only Japan and sometimes South Korea were included, comparative analyses of the healthcare system in

advanced economies showed that Japan was very similar to its European counterparts, instead of an outlier, which did not support the existence of an East Asian welfare model or an East Asian healthcare system model. This controversy might be attributed to the selection of criteria. The framework measuring finance, provision, and regulation provided a good starting point for healthcare system typologies (see Wendt, 2009, 2014; Wendt et al., 2009). As Table 6.4 showed, these indicators described the institution of a healthcare system. These institutional indicators were largely applied to classify healthcare systems. However, this framework did not capture the performance of a healthcare system. Some analysts argued that one characteristic of East Asian healthcare systems was their outstanding outcome with relatively low levels of cost (see e.g., Aspalter, 2012). In addition, investment in healthcare was considered a common characteristic shared by East Asian welfare systems (Aspalter, 2006, p. 290), but cluster analysis including both East Asian and Western healthcare systems did not support Aspalter's (2006, 2012) argument (see Section 4.4). Therefore, a robust quantitative analysis that included East Asian healthcare systems and was able to measure both healthcare system outcomes and institutional features was needed.

In order to fill the knowledge gap, RQ2 addressing the classification of the Japanese healthcare system is suggested:

RQ2: To what extent can the Japanese healthcare system be classified with other advanced healthcare systems based on the latest data?

In spite of the absence of a dominant framework in healthcare system typologies, similar to the welfare state classification, some hypotheses on the classification of the Japanese healthcare system can be developed:

If we follow most healthcare system typology literature and use the terms from OECD (1987) typology, we can develop the following hypotheses:

H2-1: The Japanese healthcare system can be grouped with other Beveridgean

healthcare systems (e.g., the UK).

H2-2: The Japanese healthcare system can be grouped with other Bismarckian healthcare systems (e.g., Germany).

H2-3: The Japanese healthcare system can be grouped with other private or mixed or pluralist healthcare systems (e.g., the USA).

In contrast, if we follow the advocates of the East Asian welfare regime, we can reach another hypothesis:

H2-4: The Japanese healthcare system can be grouped with other East Asian healthcare systems (e.g., South Korea).

In addition, it is also possible that the Japanese healthcare system is unique:

H2-5: The Japanese healthcare system remains an outlier and cannot be classified with other healthcare systems.

According to Chapter 4, most comparative healthcare system analysts supported H2-2 (e.g., OECD, 1987), whilst there was little support for H2-1 and H2-3 from the literature. Similarly, the advocates of the East Asian welfare regime endorsed H2-4 (e.g., Aspalter, 2012), and the scholars arguing for a unique Japanese welfare state favoured H2-5.

7.2.3 Elective Affinity

The two RQs above aim to solve the puzzle for the classification of the Japanese welfare state and healthcare system. Since RQ1 and RQ2 are narrowly focusing on income maintenance and healthcare respectively, the connection between the two classifications requires further investigation.

As Section 5.2 found, although welfare regime researchers and comparative healthcare system analysts contributed to their own fields, less attention has been paid to examining the elective affinity between welfare policy and healthcare policy. Scholars used different terms for their classifications, but if using Esping-Andersen's (1990) and OECD's

(1987) terms, it was assumed that a conservative welfare regime accompanied a Bismarckian healthcare system, while a social democratic welfare regime was associated with a Beveridgean healthcare system. Liberal welfare regimes might develop private insurance or mixed/plural healthcare systems (e.g., the US).

The main justification for examining the consistency between welfare regimes and the healthcare system was derived from the absence of literature. Only a few scholars attempted to bridge welfare regimes and healthcare systems. As shown in Section 5.2, the world of service literature (e.g., Jensen, 2008; Kautto, 2002) pointed out Esping-Andersen's (1990) ignorance of service. Although the healthcare system was included in their analysis, their analysis focused on the broader service sector, including healthcare and social care. Among the comparative healthcare system literature, comparative healthcare systems analysts such as Bamba (2005b) and Reibling (2010) developed their healthcare decommodification index to classify healthcare systems, but there was an absence of systematic comparison between welfare state typologies and healthcare system typologies. In other words, they mainly focused on healthcare systems and did not link their results to welfare regimes. Furthermore, the case of Japan was largely neglected, as most scholars have emphasised the classification of multiple healthcare systems, while less attention was given to examining the consistency between the healthcare system and the welfare state in the critical case.

Investigating the consistency between the Japanese welfare state and the healthcare system can contribute to the current academic debate in two aspects: first, it could test Kasza's (2002, 2006) argument on the internal inconsistency between different policy sectors in a welfare state concerning the case of Japan (see Section 5.2.5); second, it also could expand the elective affinities literature which originally only focused on the relation between production systems and welfare states.

Based on the results of RQ1 and RQ2, another research question concerning the

elective affinity between the Japanese welfare state (which is narrowly confined to income maintenance and cash benefits here) and the healthcare system could be developed:

RQ3: Is there an elective affinity between the welfare state and the healthcare system in Japan?

A few hypotheses can be developed based on the results of RQ1 and RQ2. In the first situation, the welfare regime and healthcare system are relatively consistent. Based on existing literature, the most likely scenario is a conservative welfare regime and a Bismarckian healthcare system (Esping-Andersen, 1990, 1999; OECD, 1987).

H3-1: There is an elective affinity. Japan is a conservative welfare regime accompanied by a Bismarckian healthcare system.

It is also possible that both the welfare system and healthcare system in Japan fit the East Asian welfare regime, as many advocates of the East Asian welfare regime predict (Aspalter, 2006, 2012; Holliday, 2000).

H3-2: There is an elective affinity. Japan is a member of the East Asian welfare model and the East Asian healthcare model.

If Japan is unique (Takegawa, 2005, 2009), then a third hypothesis will be:

H3-3: There is an elective affinity. The welfare system and healthcare system in Japan are unique, as neither can be classified with others.

In the second situation, there is no elective affinity between the Japanese welfare regime and its healthcare system (Lee et al., 2008; OECD, 1987; Powell, Kim, & Kim, 2020).

H3-4: Elective affinity does not exist. Japan is a liberal welfare regime accompanied by a Bismarckian healthcare system.

H3-5: Elective affinity does not exist. The welfare state in Japan is similar to other East Asian welfare systems, but its healthcare system is not.

However, it should be noted that these hypotheses do not rule out all the possibilities.

Following the discussion in Section 5.2, Table 7.1 develops different combinations between the welfare state and the healthcare system in Japan based on existing literature. Unlike hypotheses for RQ1 and RQ2, no hypothesis is generated for RQ3 if there is limited support for relevant combinations of welfare systems and healthcare systems from existing research.

Welfare state \ Healthcare system	Liberal	Conservative	Social democratic	East Asian	Unique
Private/mixed/pluralist	EA				
Bismarckian	H3-4	EA, H3-1		H3-5	
Beveridgean			EA		
East Asian				EA, H3-2	
Unique					EA, H3-3

Note: EA denotes elective affinity.

To facilitate the comparison of the results of RQ1 and RQ2, it is necessary to be consistent between the two RQs. This is achieved via the unified framework mentioned in Chapter 6. RQ1 and RQ2 adopt the same case selection (see Section 6.4). Regarding the choice of variables classifying healthcare systems, it should be noted that although existing healthcare system typologies did involve outcome indicators such as life expectancy, these indicators fell in the larger context of health instead of the healthcare system, as these criteria can be affected by other factors (e.g., eating habits). The performance indicators that are confined to the performance of a healthcare system are the optimal variables for the analysis. For example, the waiting time for accessing healthcare can be counted as a performance indicator of a healthcare system.

7.3 Method

Although there was a huge amount of literature discussing welfare regime typologies and healthcare system typologies, most literature has not systematically addressed methodological issues and the methods they applied in the analysis. There was a tendency to omit methods, especially in qualitative studies. Nevertheless, a few scholars did engage in

explaining methods applied in the welfare regime analyses (e.g., Aspalter, 2023; Barrientos, 2015; Hudson & Kühner, 2010; Shalev, 2007; Yang, 2016). According to Hudson and Kühner (2010), four quantitative methods are widely applied to classify welfare states: z-score standardisation or normalisation, cluster analysis, factor analysis, and FsITA. This section discusses methods that are applied to answer the research questions mentioned above. As this thesis aims to classify the Japanese welfare state and the healthcare system with other developed economies, cluster analysis is applied. Particularly, soft cluster analysis is used to examine the fitness of the Japanese case. Section 7.3.1 focuses on introducing these two types of cluster analysis and how they can be utilised to address the RQs mentioned in Section 7.2. In order to justify the choice of cluster analysis, Section 7.3.2 reviews the aims, advantages, and limitations of the methods used in previous research.

7.3.1 Cluster Analysis

This thesis aims to classify a medium or large number of welfare states or healthcare systems with a special focus on Japan. Therefore, cluster analysis was chosen to answer the research questions in this thesis. The reason was that cluster analysis is a robust quantitative method that could be used in classification. It was also the mainstream quantitative method in welfare regime typologies and healthcare system typologies. Cluster analysis was a numerical technique to generate classifications and typologies. The goal of cluster analysis was to identify patterns of data and facilitate new research questions and hypotheses. It could also simplify the data for communication or further analysis (Hennig, 2016, pp. 705-706). Answering the research questions in this thesis (particularly RQ1 and RQ2) requires examination of features of welfare states (mainly the pension and unemployment policy) and healthcare systems in Japan and other advanced economies. Cluster analysis was suitable for this task, as it can analyse various cases systematically.

There were various forms of cluster analysis. Two types of cluster analysis were

widely applied in welfare regime typologies and healthcare system typologies: the K-means cluster analysis (e.g., Jensen, 2008; Reibling et al., 2019) and hierarchical cluster analysis (e.g., Obinger & Wagschal, 2001; Powell & Barrientos, 2004; Wendt, 2014). The K-means cluster analysis was a type of non-hierarchical cluster analysis (i.e., flat cluster analysis), which only contains one level in the analysis. The K-means algorithm was defined by the number of categories. The logic of the K-means cluster was based on the minimum distance to geometric centres. Any given set of observations could be regarded as a set of space points that can be unidimensional or multidimensional. K-means (i.e., the number of clusters has been decided) refers to the number of these geometric centres. The aim of the K-means cluster analysis was to identify the minimum sum of the distance from all space points to geometric centres (Mirkin, 2016).

Most researchers using cluster analysis to classify welfare regimes or healthcare systems preferred hierarchical cluster analyses. Compared to non-hierarchical cluster analyses, hierarchical cluster analyses could generate sub-groups or super-groups by adding different levels of clusters (Hennig & Meila, 2016, p. 3). Hierarchical cluster analyses were usually accompanied by dendrograms as tools for visualisation (p. 5). It could be further divided into agglomerative or divisive methods (Everitt et al., 2011, p. 71). An agglomerative hierarchical cluster analysis started with the same number of clusters as the objects. The two most similar clusters merged into a new cluster until a single cluster included all objects. Divisive methods were the reverse of agglomerative methods, with a single category including all objects at the first level. Almost all typologies in welfare states and healthcare systems applied agglomerative methods instead of divisive methods for hierarchical cluster analysis (e.g., Obinger & Wagschal, 2001; Powell & Barrientos, 2004; Wendt, 2014).

It was important to note that both K-means cluster analysis and hierarchical cluster analysis, which were widely applied in existing welfare state and healthcare system

typologies, were hard cluster analyses (i.e., crisp cluster analysis). However, in order to examine the fitness of the Japanese case, soft cluster analysis (i.e., fuzzy cluster analysis) was more suitable. This was because the membership of a certain object was determined by its degree of fitness in soft cluster analyses, while hard cluster analyses referred to cluster analyses in which each member could only belong to one group. In a soft cluster analysis, a member could belong to multiple groups. Soft cluster analyses were usually interpreted as the probability of a given object in a certain group (Hennig & Meila, 2016, p. 3). As D'Urso (2016) noted, "the pivotal justification lies in the recognition of the vague nature of the cluster assignment task" (p. 548). In other words, in addition to identifying the best cluster, fuzzy cluster analysis could generate the second-best cluster (Everitt et al., 2011, p. 242). In the realm of welfare regime studies and healthcare system typologies, hard cluster analyses are widely adopted (e.g., Jensen, 2008; Reibling et al., 2019), while no researcher has applied soft cluster analyses. The use of soft cluster analyses in this thesis could also contribute to the field in terms of measuring the fitness of a particular case.

Compared to hard cluster analyses that only assign each data point to a category, the fuzzy logic incorporated in the fuzzy cluster analysis was particularly helpful in terms of investigating the goodness of fit of the Japanese welfare state. Previous literature was unable to reach a consensus on the classification of the Japanese welfare state, and Japan was sometimes regarded as a hybrid (see Powell, Kim, & Kim, 2020; Chapters 2 & 3). Hence, it was important to examine how hybrid the Japanese welfare state was. In non-fuzzy cluster analysis, a hybrid case with 99% membership degree of the conservative welfare regime and 1% membership degree of the liberal welfare regime and another hybrid case with 51% membership degree of the conservative welfare regime and 49% membership degree of the liberal welfare regime were classified as conservative. However, for a controversial case such as Japan, it is problematic to neglect this nuance. Therefore, it was also important to highlight

the membership degree and the second-best cluster.

To answer the research questions, this thesis combines both hierarchical cluster analyses and non-hierarchical cluster analyses. For the non-hierarchical cluster analysis, following the rationale of fuzzy cluster analysis mentioned above, a soft cluster analysis is used instead of the widely used K-means cluster analysis (see Section 9.1 for the algorithm of these techniques). The hierarchical cluster is visualised via dendrograms. Following the hierarchical cluster, a fuzzy cluster analysis is run to examine the classification and fitness of the case of Japan. Although the number of categories for welfare states and healthcare systems can be generated from previous studies, it is helpful to run a hierarchical cluster analysis. Hair et al. (2019) suggested the feasibility of combining non-hierarchical cluster analyses and hierarchical cluster analyses: a hierarchical cluster analysis could be performed first to decide the number of clusters and to eliminate outliers. After that, a non-hierarchical cluster analysis could be conducted to generate the final outcome (Hair et al., 2019, p. 220). The combination of two types of cluster analyses was not rare in welfare state and healthcare system typologies (e.g., Powell & Barrientos, 2004; Wendt, 2014). In addition to determining the number of clusters for the following fuzzy cluster analysis, the dendrogram generated by hierarchical cluster analysis was particularly helpful in identifying what other welfare states and healthcare systems are similar to Japan.

As a heuristic quantitative method for discovering patterns of data, cluster analysis was “the most effective and widely used technique to identify welfare regimes” (Powell & Barrientos, 2004, p. 91). It was also “robust, meaningful, and simple” (Gough, 2001, p. 169). Both non-hierarchical cluster analyses and hierarchical cluster analyses had their advantages and disadvantages. According to Hair et al. (2019), hierarchical cluster analyses were capable of generating simple and comprehensive cluster solutions for researchers. They could be used to analyse both categorical and numerical data, and hence they were applicable to various

types of research questions. The measurement of similarity also facilitated the effectiveness of hierarchical cluster analyses. Nonetheless, one of the limitations of hierarchical cluster analyses was that the combination is permanent, which meant that early combinations of clusters existed during the whole process (Everitt et al., 2011, p. 71). This feature might cause inaccurate and artificial cluster outputs. In addition, the results of hierarchical cluster analyses were largely influenced by outliers. For non-hierarchical cluster analyses, the influence of outliers and irrelevant variables was less significant, but the reliance on random seed points was considered inferior to hierarchical cluster analyses (Hair et al., 2019, pp. 219-220). Combining both hierarchical and non-hierarchical can reduce the influence brought by these limitations to some extent. A robustness test is conducted to increase the validity of cluster analysis.

In addition, as Hudson and Kühner (2010) noted, one of the major limitations of cluster analysis was its reliance on average and allowance for compensation effects, which resulted in the failure to capture the inconsistency between various policy areas. Significant scores in some policy areas might be overlooked, as cluster analysis only focused on the mean (pp. 174-175). The criticism of Hudson and Kühner (2010) was insightful, especially when multiple policy sectors were examined. For example, it was inappropriate to categorise a welfare state with strong education but weak healthcare and pension and another welfare state with average levels in all welfare policy sectors. Nevertheless, in this thesis, RQ1 focuses on income maintenance welfare programmes, and RQ2 concentrates on healthcare. It can be argued that there is a compensation effect in unemployment and pension, but both sectors are provided by the state in the form of cash benefits. The compensation effect will be minimal, as only two similar policy sectors are included in the analysis. RQ2 only aims at classifying healthcare systems, and therefore, no compensation effect between policy sectors will appear.

7.3.2 A Review of Other Methods for Classification

In addition to demonstrating the methods that are applied in this thesis, it is also important to note other methods in the current literature of the welfare/healthcare modelling business. This sub-section provides a review of quantitative and qualitative methods that can be used to classify welfare states and healthcare systems. This review can serve the aim of reinforcing the justification of the choice of method to address research questions in the thesis. It should be noted that there were some other quantitative methods for multivariate data analysis. These methods had the potential to be tools for classification. For example, multidimensional scaling shared a similar aim to factor analysis (FA) and principal component analysis (PCA) (i.e., data reduction, cf. Rencher & Christensen, 2012). Logistic regression could be used to classify (cf. Hair et al., 2019). Nonetheless, this section does not discuss multidimensional scaling and logistic regression, as none of these methods has been used in previous welfare regime typologies and healthcare system typologies.

Qualitative case studies. Qualitative case studies were largely adopted to provide detailed explanations of welfare systems in East Asia and the Japanese welfare state (e.g., Abrahamson, 2017; Aspalter, 2001, 2006; Holliday, 2000; Kwon, 1997). However, scholars using qualitative studies usually did not explain the methodology. Therefore, it was relatively difficult to identify a systemic and comprehensive framework for using qualitative research in welfare regime research. In the realm of healthcare system typologies, little qualitative research addressing the Japanese case in healthcare system typology could be found. As Table 5.3 shows, qualitative methods were usually accompanied by small-N studies and N = 1 studies. According to Yin (2018), a case study could be used to examine a phenomenon in depth, especially when the context was important. In a case study, there were many variables more than mere data points, and the source of evidence is multiple (pp. 15-16). Exworthy and Powell (2011) defined case studies in a more minimalist way: a case study included various

research designs and data sources and could provide “thick” descriptions (p. 5). In welfare regime analysis, especially the research of the East Asian welfare model as well as the Japanese welfare state, case studies often appeared as a format for reviewing single or multiple welfare systems. The unit of analysis was usually macro and institutional.

Regarding the classification of the Japanese welfare state, there was a special type of qualitative study: N = 1 case study or Japan-focused case study, which was largely adopted by Japanese scholars (e.g., Miyamoto, 2003; Peng, 2000; Shinkawa, 2013; Takegawa, 2005; Tanaka, 2019). N = 1 case study was characterised by the in-depth analysis of one case, but the classification of a welfare system was comparative in essence. This meant that the N = 1 case study not only included one case (i.e., Japan), but also made comparisons when necessary (see Section 6.1.3). For instance, both Kasza (2006) and Estévez-Abe (2008) provided historical and comparative analyses of the Japanese welfare state and compared Japan with other welfare states at the same time. However, it should be noted that although case studies have generated insightful analyses of the East Asian welfare systems, as Yang (2016) criticised, these case studies lacked a comparative framework and ended up with “introductions to East Asian social policies” (p. 88).

Index and Standardisation. Standardisation or normalisation was a technique in statistics. Normalisation referred to the process of converting the original data to standardised scores (Dodge, 2003). In the realm of welfare regime typologies, Esping-Andersen (1990) adopted the technique of standardisation and constructed his decommodification and stratification index to measure welfare states. However, he only mentioned that his classification was based on one standard deviation from the mean and adjustments were made for extreme outliers, but there was no further explanation on his process of standardisation and index construction (see Esping-Andersen, 1990, p. 54). A group of scholars who aimed to test the empirical robustness of Esping-Andersen’s (1990) framework applied the same

method (Scruggs & Allan, 2006, 2008). Scruggs and Allan (2006) disagreed with Esping-Andersen's use of standard deviations from the mean and suggested using z-score (pp. 59-60), which could be calculated by difference from the variable mean divided by the standard deviation, but in order to keep consistency, they continued to use Esping-Andersen's approach to standardise and reached a conclusion that the "three worlds" typology lacked empirical support. In healthcare system typologies, Bambra (2005b) applied Esping-Andersen's (1990) standardisation (i.e., one standard deviation from the mean) to develop the healthcare decommodification index.

The core of standardisation and index construction was to transfer original data (e.g., social expenditure, replacement rate) into standardised data that can be compared and classified. Scholars usually examined various criteria when classifying welfare states and healthcare systems, but it was difficult to consider data from different indicators without the process of standardisation. For example, it was hard to compare generosity if the pension in one country had a higher replacement rate with a longer contribution period, while in the other country, the pension had a lower replacement rate with a shorter contribution period. Standardisation and index construction could help convert all this raw data into a comparable format.

However, in spite of the simplicity of normalisation and index construction, this method was criticised by analysts for its over-reliance on average, which could simplify and eliminate features of the original data (Bambra, 2006; Hudson and Kühner, 2010; Kangas, 1994). The simplification of data and one standard deviation could result in problematic classification of cases near cut-off points (e.g., the UK) (Bambra, 2006). In addition, it seemed that there were arbitrary elements in the process of index construction. The selection of variables and construction of the index might depend on prior assumptions (Barrientos, 2015, p. 263). For example, Esping-Andersen valued the importance of the replacement rate

and doubled its weight in standardisation, as he argued that the replacement rate was important. Nonetheless, there was no justification for this adjustment, and it was doubtful whether multiplying two could accurately reflect the importance of the replacement rate. The design of the stratification index also showed a similar problem: for instance, when constructing the score of universalism, Esping-Andersen (1990) scored 0 for a coverage rate less than 60%, 2 for a 60-80% coverage rate, and 4 for a coverage rate more than 80%. However, the rationale for setting 60% and 80% as cut-off points was unclear.

Multiple Regression. It was worth noticing that multiple regression was largely adopted in welfare regime analysis (e.g., Kangas, 1994). Multiple regression could be used to examine the relationship between one dependent variable and various independent variables. It could also be used to predict the dependent variable with known independent variables (Hair et al., 2019, p. 265). Esping-Andersen (1990) also ran a multiple regression to establish the connections between welfare regimes and political processes. However, the limitations of multiple regression were acknowledged by most scholars. It was suggested that comparative welfare state analysis needed to use other methods, such as qualitative analysis (Barrientos, 2015; Shalev, 2007).

Discriminant Analysis (DA). Another quantitative method in Bambra (2007c) was DA. DA was based on the same statistical logic as multivariate analysis of variance (MANOVA). Bambra (2007c) has applied MANOVA to examine the robustness of previous welfare state typologies. MANOVA was an extension of analysis of variance (ANOVA): the goal of ANOVA was to test whether means for different groups are different when there was only one independent variable, while MANOVA could test mean differences with multiple independent variables (Tabachnick & Fidell, 2014, p. 285). The dependent variables for MANOVA were numeric, and the independent variables were categorical (Hair et al., 2019, p. 371). In the context of welfare regime research, ANOVA could test whether welfare regimes

(i.e., categorical independent variables) were different in terms of a specific dependent variable in a given typology. As an extended version of ANOVA, MANOVA was able to test whether different welfare regimes were really different in terms of a set of dependent variables in a typology. In other words, MANOVA enabled researchers to evaluate the robustness of typologies (Bambra, 2007c, pp. 9-10). In addition to Bambra (2007c), Karim et al. (2010) also used ANOVA to test whether welfare regimes showed significant differences in health outcomes.

MANOVA focused on group differences, while DA emphasised the prediction of group membership (Tabachnick & Fidell, 2014, p. 285). If means among groups were significantly different in terms of multiple dependent variables, which could be tested by MANOVA, DA could be applied to test the membership of a combination of variables (p. 419). According to Hair et al. (2019), DA could be applied to various situations where the research objects could be divided into different groups based on a categorical dependent variable (p. 27). DA could achieve two objectives: identifying the number and combination of independent variables that distinguished between two groups; providing cut-off scores to classify an object into one of the pre-defined groups. For Bambra (2007c), DA was used to identify which dimension (i.e., how much or how) was more significant when classifying welfare states. The application of DA focused on the first objective, while the prediction of group membership was not an agenda for Bambra (2007c).

Factorial Analysis and Principal Component Analysis. FA and PCA were two quantitative methods used in a few welfare regime typologies. Both methods shared a similar aim of data reduction (Rencher & Christensen, 2012, p. 436). The choice of FA or PCA depended on the research aim and variance in the variables: PCA took total variance including the unique and error variance into account, while FA only “considers the common and shared variance, assuming that both the unique and error variance are not of interest in

defining the structure of the variable” (Hair et al., 2019, p. 139). Shalev (2007) and Vrooman (2013) were two researchers who used FA and PCA to simplify data in welfare regime analysis. They attempted to simplify various variables into fewer factors and then classify countries based on simplified data. In addition, Hudson & Kühner (2010) pointed out that factor analysis not only relied on average and therefore allowed for compensation effects but also faced difficulties in interpretation compared to QCA when using their productive-protective framework to classify welfare states.

QCA and FsITA. Developed by Ragin (1987), QCA was a technique aiming at identifying causal relationships based on set theory. Set-theoretic approaches assign membership scores to original data and organise them based on sufficient and necessary conditions (Schneider & Wagemann, 2012, p. 6). QCA had two major variations: in Crisp QCA, membership scores could only be set to either 0 or 1, while in Fuzzy-set QCA (FsQCA), a case was allowed to be a partial member of a set (p. 13). Based on the principles of FsQCA, FsITA “are best understood as differing configurations of multiple, conceptually rooted, dimensions” (Hudson & Kühner, 2009, p. 36).

Hudson and Kühner (2009) were probably the first group of scholars to bring FsQCA into welfare regime typologies. They developed productive-protective fuzzy-set ideal types for investment in education and training, employment protection, and income protection. Then, membership scores of 23 OECD countries were assigned in order to classify welfare states. Following this framework, there was a small group of scholars using FsQCA or FsITA to analyse welfare states (Hudson and Kühner, 2011; Yang, 2016; Yang & Kühner, 2020). According to Kvist (1999), using fuzzy-set to examine the correspondence of a case to ideal types consisted of four steps: the first step was identifying the aspects of ideal-types based on existing knowledge; the second step was assigning the membership scores; the third step was using the set theory to calculate the membership; the last step was evaluating cases and their

conformity to ideal types (p. 234).

Compared to cluster analysis, the major advantage of FsITA was that it did not rely on the mean. It could reflect various aspects of a welfare state. Strong membership in one aspect did not compensate for its weak membership in other aspects (Hudson and Kühner, 2010; Yang, 2016). Therefore, FsITA was particularly useful when we needed to classify welfare states with multiple policy sectors. For example, Yang (2016) classified East Asian welfare systems with the use of indicators from six policy areas. In addition, FsITA permitted researchers to compare qualitative concepts in a quantitative way. It also provided an alternative way to measure East Asian welfare systems where data availability limited systematic quantitative research (Yang, 2016).

7.3.3 Summary

As reviewed in Section 7.3.1, two types of cluster analysis, combining both hierarchical cluster analysis and fuzzy cluster analysis, are selected to address the RQs in this thesis. The review of other methods in Section 7.3.2 shows that cluster analysis is more suitable for addressing the RQs. Compared to qualitative case studies, cluster analysis is able to classify the Japanese welfare state with other OECD and East Asia welfare regimes in a robust and systematic way. Multiple regression and MANOVA do not directly aim at classifying research objects. Hence, these two quantitative methods are not suitable for RQ1 and RQ2. Standardisation can be used to standardise data and prepare for further analysis, but the standardisation process has some problems: the process of scoring might be subjective; over-reliance on average and oversimplification of the data. Compared to standardisation and index construction, cluster analysis is a more robust choice for RQ1 and RQ2. Although the main function of FA is data reduction, it can be used to classify objectives as well. However, unlike cluster analysis classifies items based on their distance, the basis of FA classification is their correlation (i.e., cases with similar trends will be classified as one group) (Hair et al.,

2019, pp. 133-134). For RQ1 and RQ2, the overall similarity or difference is more important than the correlation between variables. Therefore, FA is less appropriate. DA is another potential method that can identify membership. However, as a variable-oriented approach, it is necessary to satisfy a number of assumptions before applying DA. These assumptions include multivariate normality, the absence of outliers, homogeneity of variance-covariance matrices, linearity, and absence of multicollinearity and singularity (Tabachnick & Fidell, 2014, pp. 304-306). These assumptions might not be satisfied in cross-national datasets.

QCA (or FsITA) can also be applied to classify welfare states and healthcare systems, but QCA heavily relies on Boolean algebra (i.e., the truth value and logical operators). The dependence on simple logical relations is insufficient to capture the complex social world (Clarke, 2020). For instance, Yang and Kühner (2020) argued that a strong education system is defined by a high level of spending, free compulsory primary and secondary education, and universal coverage. Following this definition, the protective membership score for the education system will be determined by the lowest score among these three aspects. Although this operation can avoid compensation effects, assigning the lowest score among all criteria to capture the performance of the education system seems to oversimplify the reality. In addition, although the process of determining membership scores largely depends on researchers' knowledge, it still remains subjective.

7.4 Methodology for This Thesis

This chapter reviews relevant research philosophy in the welfare/healthcare modelling business, highlights the research gaps and research questions for this thesis, and examines potential methods to answer the research questions. Following most typologies, this thesis adopts positivism as its research philosophy and views the welfare regime and healthcare system typologies as generalisations and reflections of the welfare states and healthcare systems in the real world. In line with positivism, this thesis follows a deductive logic. The

literature review in Chapters 2-4 is used to develop research questions and to generate hypotheses (see Section 7.2). After investigating existing methods that could be potentially used for classification (see Section 7.3), cluster analysis was chosen as the best tool to answer the research questions. This chapter provides a solid methodological basis for the following chapters operationalising the indicators and conducting the empirical analysis.

Chapter 8 Operationalisation and Data Construction

Chapter 7 reviews relevant methodological issues in the welfare modelling business and identifies research questions for this thesis. Before conducting the cluster analysis, it is necessary to discuss the operationalisation of the concept and to demonstrate the process of constructing the dataset. Hence, Section 8.1 operationalises the data following the framework identified in Section 6.3 and elaborates on the relevant data sources. Sections 8.2 and 8.3 process the data for welfare system indicators and healthcare system indicators, respectively.

8.1 Operationalisation and Data Source

The first task of this section is to operationalise the concept in the unified framework (see Section 6.3 and Table 6.5). As mentioned in Section 6.4, contextual/causal concepts are excluded. Hence, this section only explains the operationalisation of policy/institution and performance/outcome concepts for welfare systems (Section 8.1.1) and healthcare systems (Section 8.1.2). Then, it reviews available datasets for RQ1 and RQ2 (Section 8.1.3).

8.1.1 Operationalisation for Welfare System Indicators

Financial input. As reviewed earlier, Esping-Andersen (1990) selected pension, sickness, and unemployment insurance schemes to construct the decommodification index. Although Esping-Andersen (1990) argued against the use of expenditure, following his choice of income maintenance programmes, the optimal measurements for the three programmes were public spending on old-age, sick pay, and unemployment. Social assistance was not taken into account in Esping-Andersen's (1990) decommodification index, but social assistance remained an integral part of income maintenance schemes provided by the welfare state.

The OECD dataset has segregated social expenditure data for nine social policy areas (i.e., the OECD (2023d) social expenditure database (SOCX), see Section 8.1.3 for more details): old age, survivors, incapacity-related benefits, health, family, active labour market

policies, unemployment, housing, and other social policy. The relevant policy areas for RQ1 are old age, incapacity-related benefits (sickness pay is a part of incapacity-related benefits), and unemployment. It should be noted that although there is no spending figure solely for social assistance in the OECD dataset, social assistance is incorporated in “other social policy areas”. The old age sector includes the spending of pensions, early retirement pensions, supplements for dependents, and services provided to the elderly. The incapacity-related benefit sector consists of payments relating to disability and sickness. The unemployment sector comprises all cash provisions to the unemployed. Data for individual sectors in OECD countries are available in the OECD (2023c). The data for Taiwan follows ILO’s (International Labour Organisation) definition, which divides social expenditure into ten categories: old age, survivors, sickness and health, maternity, family and children, unemployment, employment injury and occupational disease, housing, and other income support and assistance. For OECD countries and Taiwan, the public spending on income maintenance will be calculated by adding up the public expenditure on old age, incapacity-related benefits, unemployment, and social assistance. In line with Esping-Andersen’s (1990) focus on cash spending, cash benefits instead of total expenditures are used. This is because the total expenditure on these policy sectors not only includes spending in cash but also spending in kind. Unfortunately, due to the absence of corresponding measurements in Hong Kong and Singapore, spending on relevant schemes will be used (see Section 8.2 for processing original data).

Generosity. As illustrated above, the generosity of a welfare system corresponds to Esping-Andersen’s (1990) decommodification, and most measures of generosity remain the same as Esping-Andersen’s (1990). It should be noted that social assistance is not included in Esping-Andersen (1990), but social assistance is regarded as a component of cash benefits here. Based on Table 8.1, ideally, the coverage, eligibility (measured by contribution rate and

qualification period), and level of benefits (measured by replacement rate and benefit duration) for each cash benefits programme (i.e., pension, sickness/disability/incapacity, unemployment, and social assistance) should be used to measure the generosity.

Table 8.1: Generosity of the Welfare State (narrowly defined as cash benefits)	
Generosity	Coverage
	Eligibility (contribution rate/qualification period)
	Benefit level (replacement rate/duration)
Cash benefits	Pension/Old age
	Sickness/Disability/Incapacity
	Unemployment
	Social assistance

Using the old age pension as an example for illustration, the generosity of a pension system is measured by its replacement rate, coverage rate, the number of years of contribution required to claim the pension benefits (i.e., qualification period), and the percentage of individual contribution. These four indicators are used by Esping-Andersen (1990) to calculate the decommodification index. In addition to these indicators, the duration of a pension is added, which is calculated by the average life expectancy minus the age when a person is eligible to receive the pension. The reason for including this indicator is that the duration of receiving pensions directly relates to the generosity of the pension system. If a person can receive pensions for a longer time (either by an earlier retirement age or higher levels of life expectancy), the pension system is considered more generous.

It is common that there are multiple pillars in pension systems in advanced economies. Therefore, confining the scope is essential before conducting the analysis. The World Bank (2008) and the OECD (2023c) developed frameworks for national pension systems. The framework suggested by the World Bank (2008) consisted of five pillars: the non-

contributory zero pillar offered basic social protection to the low-income; the mandatory contributory first pillar provided some income replacement to address the risks; the mandatory contributory second pillar mainly referred to the individual account with a set of options for investment and withdrawal; the voluntary third pillar was mainly private and could take many forms such as individual savings and employer-sponsored schemes; the non-financial fourth pillar was defined as informal support and service provision for the elderly. The OECD (2023c) divided pension systems into three tiers. The first tier played a role as the safety net, in which earnings were not relevant to income. The second tier was mandatory earnings-related pensions. It could be private or public. The third tier was voluntary private pension schemes. The focus of this thesis is the basic public pension and mandatory pension (i.e., zero pillar, first pillar, and second pillar in the World Bank (2008) framework or first tier and second tier in the OECD (2023c) framework). Both the basic pension and mandatory pension can reflect the effort of a state investing in providing old-age pensions and directly relate to the generosity of a welfare system. Excluding other pension schemes does not mean that they are less important. Some indicators will be included to measure the public/private mix of the welfare system.

Table 8.1 shows an ideal framework for measuring generosity. Nevertheless, due to the data availability, it is not always possible to measure full sets of indicators (see Section 8.2 for more details about data construction). For pension, coverage rate, benefits levels (including replacement rate and duration), and contribution rates are available in datasets, but consistent data for the qualification periods are absent for Singapore and Hong Kong. Furthermore, although scholars have developed datasets and classifications of social assistance programmes in OECD countries (e.g., Gough, 2001; Gough et al., 1997; van Vliet & Wang, 2019), no dataset includes the criteria mentioned above for social assistance programmes for OECD and East Asian welfare systems in recent years. When calculating the

decommodification index, Esping-Andersen (1990) considered both pension, unemployment, and sickness benefits, but in Hong Kong, unemployment and sickness benefits are provided in the form of social assistance, while in Singapore, unemployment is covered by the Workfare Income Support Scheme, which provides subsidised employment training. This increased the difficulty of creating a unified dataset. To address the data availability and the variety of social security structures in different countries, social assistance is not taken into the data analysis for RQ1.

Integration. The concept of integration partially corresponds to Esping-Andersen's (1990) stratification, but integration focuses on institutions rather than outcomes. Nevertheless, it is worth examining Esping-Andersen's (1990) indicators for stratification. For indicators of liberalism, healthcare expenditure will be measured in the classification of healthcare systems, and no comparable data is available for private pensions in Hong Kong, Singapore, and Taiwan. Regarding socialism and universalism, the coverage rate of pension schemes is included in the generosity indicators. The indicators for corporatism can be used to measure segmentation. Due to the availability of data, it is not feasible to measure corporatism by the expenditure on civil servants' pensions. Although the ideal measurement will be the number of pension schemes based on occupation, taking the data availability into account, the integration of the welfare systems will be only measured by whether there are universal (integrated) and occupational (segmented) pension schemes.

The welfare mix. In the analysis, welfare mix indicators only focus on the roles of the state and the market (i.e., using the public-private mix instead of the welfare triangle or the welfare diamond to measure welfare mix). The reason for excluding the role of family and informal sectors is to keep consistent with the measurement of healthcare systems. A possible measurement of the public-private mix is the coverage of public and private pension schemes. Possible indicators to measure the public-private mix of old-age social security can

be the replacement rate of public pensions, assets of private pensions, private expenditure on pensions, and coverage of private pension plans (De Deken, 2013). Although relevant datasets are constructed by scholars (see e.g., De Deken, 2013; Marcinkiewicz, 2018), most data available are only for OECD and European countries, whilst limited data exist for private pensions in East Asia. Yeh and his colleagues (2020) attempted to calculate the coverage rate and private pension assets for six East Asian territories. Nevertheless, the data included in Yeh and his colleagues' (2020) comparative analysis varied from 2009 to 2015, which are relatively outdated and therefore do not fit the purpose of this thesis. Although data can be found for major mandatory private pension schemes in Singapore (i.e., CPF) and Hong Kong (i.e., the Mandatory Provident Fund) to calculate the coverage and assets, there is no official data documenting the status of private voluntary pensions in East Asia. When measuring the generosity of the income maintenance schemes, coverage of different types of schemes is included (see above). Non-contributory schemes usually correspond to basic or minimal public schemes, which function as the safety net, while voluntary-contributory schemes are mainly private. Therefore, the coverage of multiple schemes can be a partial and second optimal measurement of the welfare mix.

Performance/outcome of the welfare system. In addition to the institutional variables, the performance/outcome of the welfare systems can be measured by inequality and poverty. There is existing research investigating the relationship between welfare regimes and inequality. For example, Goodin et al. (1999) analysed the inequality and poverty in the USA (representing liberal welfare regimes), Germany (representing conservative welfare regimes), and the Netherlands (representing social democratic welfare regimes). Researchers also conducted research including a larger number of cases (e.g., Chauvel and Bar-Haim, 2016; Pechmann, 2011). Following Danforth (2014) who incorporated income inequality and poverty as indicators for classifying welfare states, in this thesis, the performance/outcome of

the welfare systems is operationalised by two indicators: the Gini coefficient and the poverty rate.

The Gini coefficient is widely used to measure the inequality of income. It can also be used to measure the redistributive effect of a welfare system. Ideally, the redistributive efforts of welfare systems are measured by the differences between gross income Gini-coefficient (i.e., before tax and transfer) and disposable income Gini-coefficient (i.e., after tax and transfer). Due to the absence of the latest data on Hong Kong and Taiwan, only the Gini coefficient based on disposable income is used in the analysis.

Another measurement will be used in the poverty rate. However, the definition of poverty and measurements of poverty are very diverse (see e.g., Wijekoon et al., 2021), which increases the difficulty of reaching comparable data for OECD countries and East Asian economies. Poverty can be perceived from the monetary perspective, which simply means an individual does not have enough money. The criteria for whether an individual has “enough money” could be a minimum standard in basic needs (e.g., food, shelter, clothing) (Ng, 2020). Following the monetary definition of poverty, two types of poverty - absolute poverty and relative poverty are commonly used in databases. The international extreme poverty line (\$1.9 per day) set by the World Bank in 2015 is one of the measurements for absolute poverty, while the OECD prefers the use of relative poverty. Both absolute poverty and relative poverty can be used to measure the performance/outcome of the welfare system. The reason for using relative poverty by the OECD is that it has relatively up-to-date and comprehensive data (more details see Section 8.3).

Table 8.2 summarises the data sources for all welfare state indicators.

Table 8.2: Indicators and Data for RQ1				
Indicator	Data for OECD countries	Data for HKG	Data for SGP	Data for TWN
Institution: Financial input				
Public spending in income maintenance (in cash), % of GDP	SOCX	c	Theseira (2021)	c
Institution: Generosity				
Legal coverage rate (pension), %	ILO (2024)			
Replacement rate (pension), %	OECD (2023c)	OECD (2022)	OECD (2022)	Lin et al. (2021)
Duration (pension), year	CWEP	c		
Qualification period (pension), year	Consistent data not available			
Individual contribution rate (pension), %	CWEP	ISSA (n.d.)		
Legal coverage rate (unemployment), %	ILO (2024)			
Replacement rate (unemployment), %	mainly CWEP	c	ISSA (n.d.)	
Duration (unemployment), week		ISSA (n.d.)		
Qualification period (week)/waiting day (day) (unemployment)				
Contribution rate (unemployment), %				
Legal coverage rate (sickness), %	ILO (2024)			
Replacement rate (sickness), %	mainly CWEP	ISSA (n.d.)		
Duration (sickness), week				
Qualification period (week)/waiting day (day) (sickness)				
Contribution rate (sickness), %				
Institution: Integration				
Existence of occupational pension schemes	ISSA (n.d.)			
Existence of universal pension schemes				
Institution: Welfare mix				
Private pension coverage rate, %	As measured in legal coverage (second optimal measurement)			
Performance/Outcome				
Poverty rate, %	LIS (2024)	Government of the Hong Kong Special Administrative Region (2020)	Ng (2020)	LIS (2024)
Gini co-efficient	OECD (2023b)	Hwang (2022)		Directorate-General of Budget, Accounting, and Statistics (2023)
Note: c denotes author's compilation				

8.1.2 Operationalisation for Healthcare System Indicators

In order to be consistent with the measurements in RQ1, the indicators used to classify healthcare systems include financial input, generosity, integration, and healthcare mix.

Financial input. The financial input of healthcare systems corresponds to the financing dimension in healthcare system typology (cf. Wendt, 2009). Three types of healthcare expenditure are commonly used: total healthcare expenditure, public healthcare expenditure, and private healthcare expenditure (see e.g., Moolla et al., 2021; Wendt, 2009, 2014). Both public and private healthcare expenditures will be included in the analysis because it is not necessary to include total healthcare expenditures if public and private healthcare expenditures are taken into account. In line with the welfare system indicators, only public healthcare expenditure will be considered here, as private healthcare expenditure

is regarded as an indicator of the healthcare mix.

Generosity. Unlike pensions, unemployment benefits, and social assistance, healthcare is provided in services instead of cash benefits. Hence, indicators such as replacement rates are not applicable to the classification of healthcare systems. For income maintenance policy, decommodification is largely similar to generosity, because a generous income maintenance policy enables an individual to rely less on the market (see the discussion below). In contrast, the realm of healthcare is more complicated. A generous healthcare system is accompanied by a relatively high level of decommodification because individuals or patients are able to rely on the public healthcare system, where costs are usually lower (see Bambra, 2005b). However, since the provider of healthcare services and the insurers can be different, a healthcare system dominated by private providers can still be regarded as generous if insurers cover most of the cost of healthcare services and patients can afford insurance at a relatively low price.

Due to the complexity of healthcare systems, different criteria are needed to measure the generosity of healthcare systems. As mentioned in Section 6.3, the generosity of a healthcare system is defined as three aspects: affordability, provision, and access regulation. Although affordability is not considered in most healthcare system typologies (see Chapter 4), it remains an important dimension in healthcare research (see e.g., Odomirok, 2019). Odomirok (2019) defined healthcare affordability as “care meets and exceeds the patient’s requirements, delivered in a timely and high-quality fashion, at an affordable price, generating revenue that funds the application of the right resources at an expense that yields profitability” (p. 15). This definition reveals that affordability is multi-dimensional and involves many actors in healthcare. Beal and Foli (2020) analysed the concept of affordability in the literature and revealed that affordability can include a wide range of costs that increase the price of healthcare services (e.g., transportation, tax, and other indirect costs).

Nonetheless, in this thesis, affordability is confined to the financial aspect (i.e., access to healthcare at an affordable price) (cf. Beal and Foli, 2020; Persad, 2023; Watkins, 2018). This is because the financial aspect of affordability closely relates to the generosity of healthcare systems (i.e., a healthcare system is more generous if it requires patients to pay less when accessing healthcare services). An example of operationalisation is the affordability index defined by the mean cost of family health insurance policies (Emanuel et al., 2017). In this thesis, affordability is measured by the cost of healthcare services and healthcare insurance that an individual needs to pay when accessing healthcare services (i.e., out-of-pocket or co-payment rate of accessing healthcare services). Nevertheless, there is a lack of consistent and comparable datasets including information about co-payment rates in OECD and East Asian healthcare systems. In addition, it is very difficult to capture the multi-dimensionality of affordability, as no systematic measurements of indirect costs exist. Hence, a second optimal criterion, the household out-of-pocket expenditure, is used to measure affordability.

Unfortunately, at the author's best knowledge, a comparable and consistent dataset including relevant information is absent regarding the contribution rate to health insurance. Furthermore, different contribution rates for different schemes or occupations, especially in those healthcare systems where social insurance predominates, also increase the difficulties in constructing comparable datasets. Considering the data availability, the household out-of-pocket expenditure remains the only measurement of affordability. It should be noted that in addition to affordability, it is also significant to consider the provision and access regulation when assessing the generosity of the healthcare system. A healthcare system cannot be regarded as generous if it has low levels of availability of healthcare services or if most healthcare services are not accessible to most of its users.

The second dimension of generosity is the provision. Provision is frequently used by healthcare system typologies (see e.g., Powell, 2024; Wendt et al., 2009; cf. Chapter 4 for

relevant discussion). In most healthcare system typologies, provision relates to ownership (i.e., who provides healthcare services). For example, in the conceptual framework constructed by Wendt and his colleagues (2009), service provision was mainly concerned with the actors providing healthcare services and their profit orientations. Regardless of these theoretical contributions, ownership and profit orientations are more relevant to the healthcare mix than generosity if the unified framework is used (see Section 6.3). This is because ownership and profit orientations are not directly related to generosity. For instance, the healthcare system dominated by private providers can still be generous if the cost is largely reimbursed via publicly funded healthcare insurance or subsidies. In the context of generosity, provision is defined as the availability of service, which includes the quantity of service provision and coverage. Service availability can be operationalised by both the density of human resources and hospital beds, such as the number of hospital beds, doctors, and nurses and the coverage of healthcare (cf. e.g., Moolla, et al. 2021). The Universal Health Coverage (UHC) index developed by the World Health Organisation (WHO) is a widely used index to measure the coverage of health. The UHC index is defined as the average coverage of basic healthcare services, including 14 different indicators such as maternal health, child health, infectious diseases, non-communicable diseases, and service capacity and access. Unfortunately, Taiwan and Hong Kong are not included in the WHO's dataset. The Ministry of Health and Welfare in Taiwan has similar statistics, but data for Hong Kong is absent.

The third aspect of measuring healthcare systems is access. Access to the healthcare system has been discussed in various literature (see e.g., Cu et al., 2021; Levesque et al., 2013). Levesque et al. (2013) identified five dimensions of access: approachability, acceptability, availability, affordability, and appropriateness. The framework suggested by Levesque et al. (2013) emphasised *de facto* access to healthcare services and factors that might influence access, while in healthcare system typologies, *de jure* access was given more

attention. In addition, in the context of this thesis, some of the dimensions have been covered by previous indicators (e.g., affordability and availability), while other dimensions are difficult to operationalise or lack systematic and comparable data. For instance, approachability relates to people's ability to identify the existence of healthcare services. There is no corresponding measurement for these indicators in major international datasets.

In the literature discussing the healthcare system typologies, access is usually narrowly conceived as gatekeeping (i.e., whether a patient can choose healthcare service providers freely) (see Chapter 4 for relevant literature). This is associated with access regulation, which is one component of the broader concept of regulation (Wendt, 2009, 2014). Regulation is a widely discussed concept in healthcare research (see e.g., Powell, 2024; Wendt et al., 2009, cf. Chapter 4). However, the concept of regulation is complex, and no consensus on the definition of regulation (Powell, 2024, p. 241). On the one hand, in the realm of healthcare system typologies, regulation mainly concerns who plays a main role in the relationships between financial agencies, potential beneficiaries, and healthcare services providers (Rothgang et al., 2005; Wendt et al., 2009). In quantitative analysis, it is often operationalised by access regulation or gatekeeping mechanisms (see e.g., Reibling et al., 2019; Wendt, 2014, cf. Chapter 4). On the other hand, the literature on regulating healthcare defines regulation differently. For example, Walshe (2003) identified four characteristics of regulation: authority, centralisation, accountability, and public interest. Regulation can be divided into deterrence and compliance. In this thesis, only access regulation instead of the broader concept of regulation, is used in measuring generosity. The reason for using access regulation as a measurement of generosity is that a healthcare system can be regarded as generous if patients have higher levels of freedom to choose providers. Access regulation or gatekeeping is not rare in existing healthcare system typologies (Reibling & Wendt, 2012; Rothgang et al., 2005; see Chapter 4 for more details), and different authors have defined

them in different ways. In this thesis, access regulation or gatekeeping is defined as whether a patient can access secondary care without restrictions.

Table 8.3: Generosity of the Healthcare System	
Dimensions	Measurements
Affordability	Co-payment rate/out of pocket payment of access medical services (Household out-of-pocket payment)
	Contribution rate of healthcare insurance (Data not available)
Provision (Availability)	Density of human resources and hospital beds
	Coverage
Access regulation	The freedom of patient to access healthcare services

Integration. Integration or segmentation of healthcare systems is another important facet of classifying and comparing healthcare systems. Toth (2018, 2020) applied the concepts of integration and segmentation to classify healthcare systems. Toth (2020) mainly emphasised organisation integration, which meant formal contractual agreements that combined various healthcare providers. Integration consisted of five dimensions: the relationship between insurers and providers; integration of primary care and secondary care; gatekeeping mechanism; patients' choice of providers; and solo or group practice. In the integrated model, patients had a limited choice of providers, and actors were affiliated with the same organisation. Whilst in the separate model, contract dominated the relationship between different actors in the healthcare system, and patients enjoyed greater freedom of choice.

In spite of the fact that only a few researchers explicitly used integration in classification (Bazzoli et al., 1999; Toth, 2018, 2020), integration was embedded in other healthcare system typologies. Some of the concepts, such as gate-keeping and patient choice, were widely used in existing typologies (see Chapter 4). In the systematic review conducted by de Carvalho et al. (2021), 4 out of 42 articles included the concept of integration. In the review, integration was classified as a sub-dimension of regulation (see the relevant

discussion for regulation above and in Chapter 4) and was defined as “mechanisms adopted to unify the system across all organisational and provision components” (de Carvalho et al., 2021, p. 292).

Furthermore, there were many discussions on the integration of healthcare systems (see e.g., Gillies et al., 1993; Huzzard et al., 2017; Tsisis et al., 2013). However, scholars have defined integration in various ways. Among these contributions, the concept of coupling provided by Trein (2018) was useful and relevant to the classification of healthcare systems. No distinctiveness and responsiveness were two aspects of coupling. Tight coupling entailed no distinctiveness and responsiveness, which meant institutional unification and coordination between different actors. Loose coupling included distinctiveness and responsiveness (i.e., the absence of a unified institution but the presence of political coordination). Decoupling contained distinctiveness but without responsiveness, while non-coupling was defined as no distinctiveness and the absence of responsiveness (Trein, 2018, p. 6). Although Trein (2018) did not apply this framework to classify healthcare systems, it was relevant to Toth’s (2016, 2020) definition of integration, considering the relationships between different actors in healthcare systems.

This thesis aligns with Toth (2016, 2020). Compared to cash benefits and income maintenance, the integration of healthcare systems involves more complex relationships. Insurers and recipients are two major actors in income maintenance policy, while in the field of healthcare, there is a triangle relationship between patients, providers, and insurers. The first aspect is the relationship between providers and insurers (Toth, 2020). In an integrated healthcare system, health insurance and the provision of healthcare services are managed by the same organisation, and vice versa in a segmented healthcare system. The integration of providers and insurers can be operationalised by a dichotomous variable. The second aspect is the relationship between patients and providers, which is measured by access regulation

(see above). The third aspect is the relationship between insurers and patients. This is similar to cash benefits and can be measured by the number of healthcare insurance schemes.

The healthcare mix. Private health expenditure as a percentage of GDP and the proportion of private hospital beds are two indicators of measuring the public/private mix in healthcare. The private expenditure and the public health expenditure mentioned above measure the financing mix, while the private hospital bed captures the mix in provision. These two indicators are in the decommodification literature. Decommodification in healthcare system typology refers to “the extent to which an individual’s access to health care is dependent upon their market position and the extent to which a country’s provision of health is independent of the market” (Bambra, 2005a, p. 33). It is measured by private expenditure, the percentage of private hospital beds, and the coverage of the healthcare system. The coverage of the healthcare system is included when measuring generosity. However, private expenditure and private hospital beds do not have a direct relationship with the generosity of the healthcare system. In the social insurance model, providers of healthcare services can be private, but these healthcare systems can be generous if the contribution rate and out-of-pocket co-payment of patients are low (i.e., insurers pay most of the fee for the healthcare service). Therefore, private expenditure and private hospital beds are more suitable for measuring the public/private mix in healthcare rather than generosity. However, considering the fact that there is no comprehensive data on the percentage of private hospital beds, the healthcare mix will be measured only by the financing mix.

Performance/outcome of the healthcare system. Various frameworks could be found in the existing literature for the performance/outcome of the healthcare system. On the one hand, most frameworks focused on measuring the broader health system instead of the narrower healthcare system which was commonly used in healthcare system typologies. The OECD (2024) suggested four dimensions for assessing health systems: individual and

population health; health system contexts, including socio-economic, demographic, and environmental conditions; healthcare service and public health intervention; health system resources, characteristics, and policies. Papanicolas and Cylus (2015) identified six important aspects to measure health system performance internationally: population health; health service outcome; patient experience and satisfaction; financial protection; equity; efficiency and productivity. Tchouaket et al. (2012) distinguished between absolute performance and relative performance. Absolute performance could be divided into resources (including human, financial, technological resources, etc.), services (containing the volume of services, the quality of services, etc.), and health components (e.g., overall health, risk, equity, and people's satisfaction). Taking the investment into account, relative performance was measured by efficiency, effectiveness, and productivity, which could be constructed by identifying the relationship between resources, services, and health.

On the other hand, in healthcare system typology literature, the performance/outcome of the healthcare system was often excluded, as most typologists concentrated on the institutional features. A few analysts including performance/outcome in their analysis, mainly focused on population health. For instance, Molla et al. (2021) used immunisation coverage rate, life expectancy, and maternal mortality rate as indicators. Reibling et al. (2019) adapted health risk factors (i.e., alcohol and smoking) and quality index operationalised by hospital admission for six specific diseases. Nevertheless, in the literature on healthcare system typologies, there was confusion between the outcomes of healthcare systems (e.g., survival rate of specific diseases) and the outcomes of the health systems (e.g., life expectancy, mortality rate).

Following most healthcare system typologies, the performance/outcome of healthcare systems will exclude financial, policy, and institutional features, as they are covered by other indicators (see above). As mentioned before, socio-economic and demographic conditions

will not be included in the quantitative analysis. The optimal indicators to measure the performance of healthcare systems should be closely related to healthcare systems and less influenced by other social conditions, such as hygienic levels and individual behaviours. However, as Molla et al. (2021) noted, it is unavoidable that most measurements of health outcomes are impacted by these broader social contexts. Considering the indicators in existing literature and data availability, most indicators used in the analysis will be health outcome indicators. Life expectancy (i.e., how long people can live on average), infant mortality rate, and maternal mortality rate will be three indicators for measuring healthcare system performance/outcome. Both life expectancy and mortality rate are available for long time periods and have been widely used in measuring healthcare system performance.

Table 8.3 summarises the indicators and data sources for RQ2.

Table 8.3: Indicators and Data for RQ2				
Indicator	Data for OECD countries	Data for HK	Data for SGP	Data for TW
Institution: Financial input				
Public health expenditure, % of GDP	SOCX	Health Bureau (2022)	WHO (2024)	Ministry of Health and Welfare (2024)
Institution: Generosity				
Total health employment	OECD (2024a)	Census and Statistics Department (2023)	OECD/WHO (2022)	Ministry of Health and Welfare (2024)
Co-payment of patients	WHO (2025)	c	WHO (2025)	c
UHC index	WHO (2024)	N/A	WHO (2024)	Ministry of Health and Welfare (2025)
The number of hospital bed	OECD (2024a)	Census and Statistics Department (2023)	OECD/WHO (2022)	Ministry of Health and Welfare (2024)
Access index	c			
Institution: Integration				
Integration of insurers and providers	c			
Integration of patients and insurers	c			
Institution: Healthcare mix				
Private health expenditure	SOCX	Health Bureau (2022)	WHO (2024)	Ministry of Health and Welfare (2024)
Performance/Outcome				
Life expectancy	OECD (2024a)	Census and Statistics Department (2023)	World Bank (n.d.)	National Statistics (n.d.)
Infant mortality rate	World Bank (n.d.)			
Maternal mortality				

Note: c denotes author's compilation

8.1.3 Data Sources

To classify welfare systems and healthcare systems and answer the research questions in this thesis, it is essential to use comparative welfare state and healthcare system datasets.

This section will review potential datasets and select relevant datasets for the analysis in the following chapters.

A dataset that has been used in the current welfare state typology is the Comparative Welfare Entitlements Project (CWEP). Developed by Scruggs (2022), CWEP contains institutional features of social security systems in 27 OECD countries and 6 non-OECD countries and regions. The CWEP includes information about pension, unemployment, and sick pay. This dataset provides data corresponding to Esping-Andersen's (1990) construction of the three worlds framework, which only considers the benefit aspect of the welfare state. An advantage of this dataset is that it includes information on Taiwan. This will be helpful when examining the East Asian welfare model. Unfortunately, although the latest version of the dataset included data from 1971 to 2019, for Taiwan and Central and Eastern European countries, the period is from 1991 to 2010. Nevertheless, the latest version of the CWEP dataset can probably provide comprehensive comparative data for answering RQ1.

In addition to CWEP data, another useful data source is various OECD databases. OECD databases contain the latest information (i.e., 2021 data) on social expenditure, social welfare, and health for OECD countries. Sometimes, a few non-OECD countries are also included in these datasets. The SOCX includes a wide range of data at programme levels. Policy sectors included in the dataset are the elderly, survivors, health, family, active labour market policies, etc. Therefore, the SOCX can be the major source for financial input indicators. Another OECD database is social and welfare statistics, including welfare outcome indicators such as better life index, income distribution, wealth distribution, and gender inequality. These welfare outcome indicators can also be incorporated into the analysis. A third dataset is the OECD (2023a) health statistics dataset, which can be the main source of data for RQ2. The OECD health statistics include not only the healthcare system indicators (e.g., finance, provision) but also outcome statistics. Since RQ2 will analyse both

institution and outcome indicators, data in OECD health statistics are particularly useful, especially health financing, health status, health utilisation, and health quality indicators. It should be noted that long-term healthcare statistics can be found in this data, but this thesis mainly focuses on healthcare systems instead of long-term healthcare systems.

Since RQ2 addresses healthcare systems, a further data source for RQ2 is the WHO health data. The WHO (2023) also has a database of health expenditures and government. Compared to OECD health statistics, the WHO data provides more information at a detailed level. The Global Health Observatory (GHO) dataset includes a number of indicators measuring different health-related issues. In the analysis for RQ2, the main source of data will be OECD health statistics. When the data is missing or indicators cannot be found in the OECD health statistics, the GHO dataset will play a supplementary role. Most healthcare system typologies used OECD and WHO as their data sources (e.g., Moolla et al., 2021; Reibling et al., 2019; Wendt, 2014; Wendt et al., 2009).

Most variables in the analysis will be continuous, but there are a few categorical variables. It will be helpful to construct indices before incorporating these variables into the analysis. The scoring process of these categorical indicators is based on reports and literature from international organisations such as the OECD and the WHO. Two biennial reports are useful in terms of providing information on the latest developments of pension policy in OECD countries: the OECD Pension at a Glance and the OECD Pension Outlook series. Hong Kong, Taiwan, and Singapore are not included in these two reports, as they are not members of the OECD. Nevertheless, the OECD Pension at a Glance Asia/Pacific can offer some supplementary information for the pension system in Hong Kong and Singapore.

Another source of data is the country profiles provided by the International Social Security Association (ISSA). The ISSA country profiles include institutional features of national social security programmes against social risks (e.g., old age, invalidity, death,

sickness, maternity or paternity, work injury or occupational disease, unemployment, child raising, and household subsistence). These country profiles provide an outline of social security programmes of over 190 countries and territories. Scheme descriptions within country profiles are collected via surveys that the ISSA sends to a network of correspondents based in social security institutions and are updated biennially based on regions. The country profiles of ISSA (n.d.) are used as a supplementary source of the data in this thesis, especially when data are missing for a few cases.

Last but not least, none of the datasets reviewed above, except the country profiles in ISSA (n.d.) include Taiwan, Hong Kong, and Singapore. Sometimes they have data for one or two cases, but the data remains at a very limited level, and it is not sufficient to use directly for comparative analysis. Therefore, the main data source for these three Asian territories is the statistics from the government.

8.2 Construction of the Data for the Welfare System Indicators

Following the operationalisation of the concepts in the last section, this section serves the aim of demonstrating the process of constructing the dataset for welfare state indicators used for RQ1.

8.1.1 Financial Input

The data on public spending on old age, incapacity-related benefits, and unemployment in cash benefits of OECD countries were retrieved from SOCX. The expenditure for old age in cash benefits of Taiwan was given in exact numbers, which was 1,068,592 million NT\$. The numbers for unemployment, disability, employment injury and occupational disease, and other income support and assistance were 12,076, 32,190, 4,839, 79,710 million NT\$ respectively (National Statistics, 2024b, Table 4). The GDP of Taiwan in 2022 was 22,679,843 million NT\$ (National Statistics, 2024a). Therefore, the percentage of expenditure on income maintenance in cash benefits was 5.3%.

According to Theseira (2022), the Singapore government spent minimally on old age benefits because the old age pension was mainly provided by the CPF, which was completely funded by contributions from employers and employees. Although the Silver Support Scheme provided cash benefits to the elderly who failed to secure their income after retirement, the spending figure of the Silver Support Scheme was combined with the Workfare Income Supplement Schemes (i.e., a scheme that provided income to the people receiving the lowest income). Two schemes accounted for 0.21% of GDP in 2019 (Theseira, 2022, p. 209).

The statistics of welfare expenditure published by the Hong Kong government did not follow the same criteria as the OECD. According to the Census and Statistics Department (2023), public expenditure on social welfare occupied 4% of GDP in 2022-2023. However, this figure included not only the spending on social security schemes, but also services for the elderly, children, and families. In order to be consistent with data in other welfare systems, only the expenditure of two income maintenance schemes (i.e., Comprehensive Social Security Assistance and Social Security Allowance) is used for calculation. Numbers for the four schemes were 23,196.1 and 43,705.6 million HK\$ respectively, and the total number was 66,901.7 million HK\$ in 2022-2023, while the GDP was 2,818,046 million HK\$ in 2022. Hence, the public expenditure on income maintenance as a share of GDP was 2.3% in 2022.

Table 8.5 includes the latest statistics for public expenditure on public income maintenance programmes (in cash) as the percentage of GDP in selected OECD and East Asian welfare systems.

Table 8.5: Public Expenditure on Income Maintenance (in cash) in OECD 17 and East Asia, % of GDP		
Country/Region	Year	Public expenditure on income maintenance programmes (%)
OECD 17		
AUS	2019	7.4
AUT	2019	14.2
BEL	2019	13.7
CAN	2020	9.0
DNK	2019	11.7
FIN	2019	15.0
FRA	2020	18.7
DEU	2019	10.9
IRL	2019	5.0
ITA	2019	16.8
NLD	2019	9.0
NZL	2021	8.8
NOR	2019	11.4
SWE	2019	9.0
CHE	2019	9.1
GBR	2020	8.2
USA	2020	9.0
East Asia		
JPN	2020	9.7
KOR	2020	6.0
TWN	2022	5.3
SGP	2019	0.2
HKG	2022	2.3
<p>Note: The public expenditure on income maintenance (in cash) is calculated by summing the public expenditure on old age, incapacity-related benefits, unemployment, and social assistance.</p> <p>Sources: author's calculation based on SOCX (OECD, 2023d) for OECD countries, National Statistics (2024a, 2024b) for TWN, Theseira (2022) for SGP, and Census and Statistics Department (2023) for HKG (see Table 8.2 and text for more details).</p>		

8.2.2 Generosity

As mentioned earlier, generosity was measured by benefit levels, coverage, and eligibility. The benefit level could be mainly captured by replacement and the expected duration of benefits.

The gross replacement rate of a pension was defined as the pension benefit after retirement compared with the income received when working. The gross replacement rate shown here was based on a male wage-earner who earns an average wage. The gross replacement rates of mandatory pension schemes in 19 OECD countries (2022 or latest available) could be found in OECD (2023c), while the data for Hong Kong and Singapore

were taken from OECD (2022). The figure for Taiwan in 2018 was gained from Lin et al. (2021). The expected duration of pension benefits in most OECD countries was obtained from the CWEP dataset. The data reflected the situation in 2018. The expected duration of benefits was based on the statutory retirement age and life expectancy at age 65. The figures for OECD countries were available in CWEP. Numbers for other cases were calculated based on the information in ISSA (n.d.). The life expectancy at age 65 was not available. Instead, life expectancy at birth could be found in the UN (n.d.). For Taiwan, the eligible age for claiming the benefits of the Labour Insurance Programme was 63 in 2022. The life expectancy was 81.3 in 2022. Therefore, the expected duration of receiving pension benefits was 18 years. Regarding Hong Kong, the eligible age for pension was 65, and the life expectancy was 84.3 in 2022. The expected duration was 19. The age requirement for pension in Singapore was 65, and the life expectancy was 84.1. The duration was 19.

Table 8.6 summarises the contribution rate and expected duration of pension in selected OECD and East Asian welfare systems in 2019 or the year when the latest data were available.

Country/Region	Gross replacement rate (%)	Duration (yrs)
OECD 17		
AUS	26.0	21
AUT	74.1	23
BEL	43.5	20
CAN	36.8	21
DNK	73.1	19
FIN	58.4	20
FRA	57.6	26
DEU	43.9	20
IRL	26.2	19
ITA	76.1	20
NLD	74.7	19
NZL	39.7	21
NOR	44.5	19
SWE	62.3	20
CHE	39.9	22
GBR	41.9	21
USA	39.1	18
East Asia		
JPN	32.4	27
KOR	31.2	24
TWN	58.0	18
SGP	57.0	19
HKG	38.1	19

Note: Gross replacement rate is based on a male wage-earner who earns an average wage. Duration is based on the statutory retirement age and life expectancy at age 65.
Sources: Lin et al. (2021); OECD (2022, 2023c); Scruggs (2022); and author's calculation.

Another important dimension to measure generosity was the contribution. An income maintenance scheme was more generous if the recipients could contribute smaller amounts and for shorter periods to gain the standard level of pension benefits. Data for most OECD countries (2019 or latest available) could be found in CWEP, with the exception of the UK and Denmark. Alternative figures in 2022 from OECD (2023c) were used for these two countries, where the contribution also financed other social security schemes. Similarly, the contribution to CPF in Singapore was used to fund other social protection schemes. The contribution rates in 2022 for Singapore, Hong Kong, and Taiwan were retrieved from ISSA (n.d.). Unfortunately, consistent measurements of contribution periods did not exist for all the cases included in this thesis. Although CWEP provided the statistics for OECD countries, it was relatively difficult to calculate the contribution period of pensions in Hong Kong, Taiwan,

and Singapore. The complexity of the pension structures also increased the difficulties in generating a consistent calculation: Singapore has two CPF accounts for pension, and a person can withdraw a part of the funding for education or housing. Hence, only the contribution rate was used in the analysis.

Table 8.7 includes the data for the pension contribution rate of the mandatory pension scheme in selected OECD and East Asian welfare systems in 2019 or the year when the latest data were available. As Table 8.7 shows, there were several less satisfactory data points included in the analysis. The contributions to the mandatory pension in Denmark, the United Kingdom, and Singapore also financed other social security schemes, which might have an impact on the analysis (see Section 11.3 for more discussion on the limitations of this research). The rationale for adapting these less optimal data came from the perspective of recipients. For example, in the UK, the national insurance contribution financed basic state pension, maternity allowance, bereavement support payment, etc. If a recipient in the UK only wanted to be eligible for the basic pension benefits (e.g., assume this person was not going to marry and have a baby), he or she still had to contribute 12% of his or her salary. Another less ideal data was the contribution rate in Hong Kong, where only “less than 5%” was available. 5% was used in the following analysis for Hong Kong, as both the fixed contribution rate and the alternative average contribution rate were absent.

Table 8.7: Contribution Rates of Pensions in OECD 17 and East Asia, 2019 or Latest Available	
OECD 17	
Country/Region	Contribution rate of the mandatory pension scheme (%)
AUS	0
AUT	10
BEL	8
CAN	5
DNK	4*
FIN	6
FRA	7
DEU	9
IRL	4
ITA	9
NLD	0
NZL	0
NOR	8
SWE	7
CHE	5
GBR	12*
USA	8
East Asia	
JPN	9
KOR	5.0
TWN	5.7
SGP	20*
HKG	>5
Sources: ISSA (n.d.); Scruggs (2022).	
*Contribution also finances other social security schemes.	

The coverage rate of an income maintenance scheme was measured by its legal coverage rate. The data of all countries/territories are retrieved from the ILO (2024). Table 8.7 shows the legal coverage rate of mandatory-contributory (m-c), voluntary-contributory (v-c), and non-contributory (non-c) old-age, sickness, and unemployment social protection

schemes in selected OECD and East Asian welfare systems in 2020 or the year when the latest data were available.

Country/Region	Old age			Unemployment			Sickness		
	m-c	v-c	non-c	m-c	v-c	non-c	m-c	v-c	non-c
OECD 17									
AUS	62.1	10.2	100.0	0.0	0.0	100.0	51.9	0.0	0.0
AUT	57.8	0.0	0.0	50.9	6.9	0.0	57.8	0.0	0.0
BEL	50.6	0.0	0.0	43.5	0.0	0.0	50.6	0.0	0.0
CAN	61.5	37.8	100.0	61.5	0.0	0.0	52.1	9.4	0.0
DNK	57.5	0.0	100.0	0.0	59.2	0.0	59.2	0.0	0.0
FIN	55.2	0.0	100.0	55.2	0.0	100.0	100.0	0.0	0.0
FRA	50.5	15.9	100.0	44.6	0.0	100.0	44.6	0.0	0.0
DEU	100.0	0.0	18.6	53.2	5.8	18.6	80.0	20.0	0.0
IRL	50.2	0.0	100.0	50.2	0.0	100.0	50.2	0.0	0.0
ITA	34.4	20.5	100.0	34.4	0.0	0.0	34.4	0.0	0.0
NLD	100.0	0.0	0.0	51.4	0.0	0.0	61.6	0.0	0.0
NZL	0.0	0.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0
NOR	100.0	0.0	0.0	61.7	0.0	0.0	61.7	0.0	0.0
SWE	60.4	0.0	100.0	60.4	0.0	0.0	64.6	0.0	0.0
CHE	68.3	9.5	0.0	55.6	0.0	0.0	55.6	9.5	0.0
GBR	60.4	22.5	100.0	51.3	0.0	100.0	51.3	0.0	0.0
USA	59.8	0.0	14.4	56.0	0.0	0.0	25.6	0.0	0.0
East Asia									
JPN	54.2	32.0	0.0	54.2	6.2	0.0	54.2	6.2	0.0
KOR	60.4	0.0	16.6	45.3	15.0	0.0	0.0	0.0	0.0
TWN	100.0	0.0	100.0	45.2	0.0	0.0	45.2	13.7	0.0
SGP	67.6	0.0	0.0	0.0	0.0	0.0	58.2	0.0	0.0
HKG	57.9	0.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0

Source: ILO (2024)

Data on the benefit levels and eligibility criteria for sickness and unemployment were available in the CWEP dataset. The measurements for benefit levels of both income maintenance schemes were duration (i.e., weeks of benefits entitlement) and replacement rate. Similar to the measurements for pension schemes, the measurements for eligibility were the contribution rate and qualification period (i.e., weeks of contribution needed to be eligible for receiving benefits). The qualification period and benefit duration were based on a person who was 40 years old and had contributed for 20 years. In addition, the waiting days were added

as another eligibility criterion for unemployment and sickness benefits. The replacement rate was based on a person with an average wage. Table 8.9 and Table 8.10 summarise the benefit levels and eligibility criteria for unemployment benefit and sickness benefit in selected OECD and East Asian welfare systems in 2019 or the year when the latest data were available, respectively.

The data of Taiwan, Hong Kong, and Singapore were not included in the CWEP, but ISSA (n.d.) provided descriptions that could be used to generate the data. According to ISSA (n.d.), the unemployment insurance in Taiwan required a 0.2% contribution from the worker with at least one year of contribution in the last three years before unemployment. The waiting days for receiving the benefits were 14. The replacement rate was 60%, and the recipient could enjoy the benefits for 6 months. In Singapore, the Workfare Training Support Scheme offered subsidies for training for the unemployed who were qualified for the social assistance schemes. Given that the fact that an unemployment scheme was absent in Singapore, 0 was given to all the indicators. Whilst in Hong Kong, the unemployment benefits were granted through the social assistance scheme. The scheme was means-tested and based on residency rather than contribution. The recipient could receive 2,685 HK\$ per month as long as all conditions were fulfilled. According to the HK statistics produced by the Census and Statistics Department (2023), the median monthly employment earnings were 19,000 HK\$. Therefore, the replacement rate could be calculated as 14.1%.

Country/Region	Benefit		Eligibility		
	Replacement rate (%)	Duration (w)	Contribution rate (%)	Contribution period (w)	Waiting time (d)
AUS	21	999	0	0	7
AUT	55	39	3	312	0
BEL	71	999	1	78	0
CAN	62	36	2	45	14
DNK	54	104	8	52	0
FIN	58	80	2	26	5
FRA	70	104	10	104	7
DEU	60	52	1	104	0
IRL	33	39	0	260	3
ITA	63	104	0	13	8
NLD	76	65	0	1040	0
NZL	21	999	0	0	7
NOR	67	156	8 ^[1]	14	4
SWE	64	60	0 ^[1]	52	6
CHE	5	80	1	78	5
GBR	16	26	12*	50	7
USA	56	20	0 ^[1]	20	0
East Asia					
JPN	55	21	0	1040	7
KOR	58	30	1	26	7
TWN	60	24	0	52	14
SGP	0	0	0	0	0
HKG	14	999	0	0	0

Sources: Scruggs (2022) for OECD countries; ISSA (n.d.) for SGP, TWN; author's calculation based on ISSA (n.d.) and Census and Statistics Department (2023) for HKG.

*Alternative figures are from OECD (2023b). Contribution also finances other social security schemes.

[1] Alternative figures are from ISSA (n.d.). For NOR, contribution also finances other social security schemes.

Based on ISSA (n.d.), the sickness insurance was covered by the National Pension Programme and the National Labour Programme in Taiwan. The source of funding was identical for both programmes. The sickness benefits provided 50% of the average monthly covered earnings in the six months before the sickness began. There was a three-day waiting period before receiving the benefit lasting up to 1 year, if the insurers had more than one year of contribution. In Singapore, the employer was responsible for sick pay, which entitled the worker to 100% of gross wages up to 14 days a year (up to 60 days if hospitalised). The qualification criterion for the sickness benefit was working for more than 3 months, which could be considered as contributing to social insurance. Similarly, in Hong Kong, the employer was responsible for sick pay. The replacement rate was 80% of earnings with up to 120 days of benefits. The eligibility criterion was at least one month of employment.

Country/Region	Benefit levels		Eligibility		
	Replacement rate (%)	Duration (w)	Contribution rate (%)	Contribution period (w)	Waiting time (d)
AUS	22	999	0	0	7
AUT	97	62	4	780	3
BEL	82	52	1	26	0
CAN	39	15	2	15	7
DNK	54	28	0	6	0
FIN	63	50	2	0	10
FRA	64	156	0	52	3
DEU	64	78	7	0	0
IRL	33	104	0	260	6
ITA	80	26	0	0	3
NLD	71	104	0	0	2
NZL	21	999	0	0	7
NOR	100	52	0	4	0
SWE	75	999	0	0	1
CHE	88	26	0.225 ^[1]	1040	0
GBR	20	999	12*	0	7
USA ^[2]	0	0	0	0	0
East Asia					
JPN	72	78	5	0	3
KOR ^[2]	0	0	0	0	0
TWN	50	52	0	52	3
SGP	100	2	20*	12	0
HKG	80	17	4	0	0

Sources: Scruggs (2022) for OECD countries; ISSA (n.d.) for SGP, TWN, HKG.
*Data not available. Alternative figures are from OECD (2023b). Contribution also finances other social security schemes.
[1] Data not available. Alternative figures are from ISSA (n.d.).
[2] National programmes do not exist.

Similarly, there were a few countries where the contribution also financed other schemes. The rationale has been demonstrated above. It is worth noting some extreme numbers in the duration of benefits and contribution periods for unemployment benefits and sickness benefits, such as 999 weeks for the duration of the benefits. These extreme data points represent an unlimited duration of the benefits as long as the conditions are satisfied, instead of the real benefit duration. Using 999 to represent the unlimited duration is inherited from the CWEP dataset. Although this is not ideal (see Section 11.3 for relevant discussion of limitations), the reason for not adapting other treatments for extreme data points is to avoid the impact that might result from an arbitrary decision.

8.2.3 Integration and Segmentation

Table 8.11 lists the institutional setting of mandatory pension schemes in selected OECD and East Asian welfare systems based on the information on ISSA (n.d.). Three types of schemes correspond to Esping-Andersen's (1990) measurement of stratification and are

relevant for integration and segmentation: non-contributory means-tested (represent liberalism), occupational (represent corporatism), and non-contributory universal (represent social democracy). 1 denotes the existence of relevant schemes, whilst 0 represents the absence of the schemes.

OECD 17			
Country	Non-contributory means-tested	Non-contributory universal	Occupational pension
AUS	1	1	1
AUT	1	0	0
BEL	1	0	0
CAN	1	1	0
DNK	0	1	0
FIN	1	1	0
FRA	1	0	1
DEU	1	0	0
IRL	1	0	0
ITA	1	0	0
NLD	0	0	0
NZL	1	1	0
NOR	0	1	1
SWE	0	1	0
CHE	0	0	1
GBR	1	0	0
USA	1	0	0
East Asia			
Country/Region	Means-tested	Universal	Occupational
JPN	0	0	0
KOR	1	0	0
TWN	1	0	0
SGP	1	0	0
HKG	1	1	1

Note: 0 denotes that the relevant pension programmes do not exist, while 1 denotes the existence.
Source: ISSA (n.d.)

8.2.4 The Welfare Mix

As mentioned in Section 8.1.1, a consistent dataset for East Asian welfare systems to measure the financial input in the private and voluntary sector of income maintenance programmes is absent. In addition, given the diversity of pension schemes, it is difficult to measure the generosity of income maintenance programmes offered by the private sector. Hence, the legal coverage of voluntary schemes of pension, unemployment, and sickness was used as a second optimal measurement (see Table 8.7).

8.2.5 Performance/outcome

Table 8.12 includes the Gini coefficient of disposable income in selected OECD countries and East Asian welfare systems. The data for OECD countries except South Korea were retrieved from the OECD (2023b) income distribution database. The data for South Korea, Singapore, and Hong Kong were taken from a scholar's publication (Hwang, 2022, p. 41, Table 3.1). The Gini coefficient of Taiwan was obtained from the official statistical report (Directorate-General of Budget, Accounting and Statistics, 2023, p. 85, Table 46).

Table 8.12: Gini Coefficient of Disposable Income in OECD 17 and East Asia		
Country/Region	Year	Gini co-efficient
OECD 17		
AUS	2020	0.318
AUT	2021	0.281
BEL	2021	0.256
CAN	2021	0.292
DNK	2019	0.268
FIN	2021	0.273
FRA	2021	0.298
DEU	2020	0.303
IRL	2021	0.291
ITA	2021	0.330
NLD	2021	0.297
NZL	2020	0.320
NOR	2021	0.285
SWE	2020	0.286
CHE	2019	0.320
GBR	2021	0.354
USA	2022	0.395
East Asia		
JPN	2018	0.334
KOR	2018	0.345
TWN	2022	0.342
SGP	2019	0.352
HKG	2016	0.473
Sources: OECD (2023b) for OECD countries; Hwang (2022) for KOR, SGP, HKG; Directorate-General of Budget (2023) for TWN.		

As mentioned in Chapter 6, relative poverty was another measurement of the performance of cash benefits programmes. According to the OECD (2023b), the poverty rate

was defined as the percentage of the number of people whose disposable income fell below 50% of the national median disposable income. OECD (2023b) included the latest data for all OECD countries, but data for Taiwan, Singapore, and Hong Kong were not included. The figure for Singapore was retrieved from the calculation of Ng (2020). The data for Taiwan could be found in the Luxembourg Income Study (LIS) Inequality and Poverty Key Figures. For Hong Kong, the data was gained from the Government of the Hong Kong Special Administrative Region (2020). The data selected was post-intervention poverty, which considered the effects of welfare policy and corresponded to the concept of disposable income defined by the OECD. Table 8.13 summarises the percentage of relative income poverty based on 50% equivalised median household income poverty in selected OECD and East Asian welfare systems.

Table 8.13: Relative Income Poverty Based on 50% Equivalised Median Household Income Poverty in OECD 17 and East Asia, %		
OECD 17		
Country/Region	Year	Poverty rate
AUS	2020	12.6
AUT	2021	9.8
BEL	2021	7.8
CAN	2021	10.5
DNK	2019	6.5
FIN	2021	6.7
FRA	2021	8.5
DEU	2020	11.6
IRL	2021	9.7
ITA	2021	12.8
NLD	2021	8.5
NZL	2020	12.4
NOR	2021	7.9
SWE	2021	9.2
CHE	2020	9.9
GBR	2021	11.7
USA	2022	18.0
East Asia		
JPN	2018	15.7
KOR	2021	15.1
TWN	2022	10.8
SGP	2019	18.5
HKG	2020	7.9
Sources: OECD (2023b) for OECD countries; Ng (2020) for SGP; LIS (2024) for TWN; The Government of the HKSAR (2020) for HKG.		

Table 8.14 contains the descriptive statistics for all welfare system (i.e., cash benefits or income maintenance) variables. The types of variables, minimum, maximum, standard deviation, and mean, are included in the descriptive statistics.

Table 8.14: Descriptive Statistics for Cash Benefit Variables

Variable	Type	Min	Mean	S.d.	Max
Public expenditure on cash benefits (%)	numeric	0.2	9.57	4.45	18.7
Pension replacement rate (%)	numeric	26	48.84	16.02	76.1
Pension duration (yrs)	numeric	18	20.73	2.39	27
Pension contribution rate (%)	numeric	0	6.6	4.36	20
Mandatory contributory pension coverage (%)	numeric	0	62.22	22.92	100
Voluntary contributory pension coverage (%)	numeric	0	6.75	11.6	37.8
Non-contributory pension coverage (%)	numeric	0	56.8	48.72	100
Unemployment benefit replacement rate (%)	numeric	0	47.23	23.42	76
Unemployment benefit duration (w)	numeric	0	228.91	373.32	999
Unemployment benefit contribution rate (%)	numeric	0	2.05	3.47	12
Unemployment benefit contribution period (w)	numeric	0	153	297.75	1040
Unemployment benefit waiting (d)	numeric	0	4.59	4.35	14
Mandatory contributory unemployment benefits coverage (%)	numeric	0	39.75	22.94	61.7
Voluntary contributory unemployment benefits coverage (%)	numeric	0	4.23	12.83	59.2
Non-contributory unemployment benefits coverage (%)	numeric	0	32.66	47.24	100
Sickness benefit replacement rate (%)	numeric	0	57.95	30.97	100
Sickness benefit duration (w)	numeric	0	222.64	376.5	999
Sickness benefit contribution rate (%)	numeric	0	2.79	4.9	20
Sickness benefit contribution period (w)	numeric	0	102.14	270.33	1040
Sickness benefit waiting (d)	numeric	0	2.82	3.14	10
Mandatory contributory sickness benefits coverage (%)	numeric	0	57.22	23.3	100
Voluntary contributory sickness benefits coverage (%)	numeric	0	2.67	5.55	20
Non-contributory sickness benefits coverage (%)	numeric	0	0	0	0
Gini coefficient of disposable income	numeric	0.3	0.32	0.05	0.47
Relative income poverty based on 50% equivalised median household income poverty (%)	numeric	6.5	11	3.39	18.5
Existence of a non-contributory means-tested pension scheme	binary	0	0.73		1
Existence of a non-contributory universal pension	binary	0	0.36	N/A	1
Existence of an occupational pension	binary	0	0.23		1

It should be noted that extreme values exist in some indicators of generosity (e.g., a benefit duration of 999 weeks in the unemployment benefits, see Table 8.10). The extreme value inherited from the original dataset (e.g., CWEP) represents an unlimited benefit duration. This might be problematic. However, it is difficult to find a number that can exactly represent the unlimited duration of benefits (i.e., using a number other than the original dataset requires justification that is hard to achieve in this context). More importantly, the process of generating the Gower's distance involves standardisation, which can minimise the impact of the extreme value (see Section 9.1.2 for relevant algorithms).

8.3 Construction of the Data for the Healthcare System Indicators

Similar to Section 8.2, Section 8.3 demonstrates the process of data construction for healthcare system indicators used for RQ2.

8.3.1 Financial Input

The first indicator to measure the financial input is the government/compulsory health expenditure. According to OECD et al. (2017), government schemes and compulsory

contributory healthcare financing schemes include “government schemes, social health insurance, compulsory private insurance, and compulsory medical saving accounts” (p. 167). This indicator can measure the financial input and the efforts that governments have invested in healthcare. OECD et al. (2017) highlighted:

a key rationale for government intervention in health systems is to ensure access to basic health care for the whole society (or vulnerable social groups)” (p. 167). This purpose can be pursued through different coverage schemes, which implies differing levels of redistribution between social groups and individuals. Health accounts are also expected to provide information for assessing how well health systems achieve this key policy goal. Therefore, for international comparability, it is important to have a general, aggregate category that includes all financing schemes that serve this goal (p. 167).

Table 8.15 shows the health expenditure of different schemes in selected OECD and East Asian healthcare systems as a share of GDP in 2022 or the year when the latest data were available (see also Section 8.3.4). Data for 19 OECD countries were retrieved from the OECD (2023a). The data represented 2022 or the nearest year. Since the OECD (2023a) does not include data for Taiwan, Hong Kong, and Singapore, and a consistent dataset is absent, the figures for these three cases are replaced by their public health expenditure. According to the Ministry of Health and Welfare, Taiwan (2024), public health expenditure was 1,067,664 million NT\$ in 2022, and GDP was 22,679,843 million NT\$. The public expenditure as a share of GDP could be calculated based on these two figures (4.7%). According to the SINGSTAT (Singapore Department of Statistics) (2024), the government health expenditure as a percentage of GDP was 2.9% in FY2021. According to the Health Bureau, HKSAR

(2022), the public health expenditure as a percentage of GDP in 2022/2023 was 6.1%.

Table 8.15: Health Expenditure of Different Schemes in OECD 17 and East Asia, % of GDP, 2022 or Latest Available		
OECD 17		
Country/Region	Government/compulsory schemes	Voluntary health care payment schemes/ household out-of-pocket payment
AUS	8.8	2.7
AUT	7.0	2.5
BEL	8.4	2.6
CAN	8.0	3.2
DNK	8.1	1.4
FIN	8.0	2.0
FRA	10.3	1.8
DEU	10.9	1.7
IRL	4.7	1.4
ITA	6.8	2.2
NLD	8.6	1.6
NZL	9.2	2.0
NOR	6.8	1.2
SWE	9.2	1.5
CHE	7.8	3.5
GBR	9.3	2.1
USA	14.1	2.5
East Asia		
JPN	9.8	1.7
KOR	6.1	3.6
TWN	4.7	4.1
SGP	2.9	2.2
HKG	6.1	3.9

Note: The data for TWN, SGP, HKG are public health expenditure and private health expenditure, respectively (see text for more details).
Sources: OECD (2023a) for OECD countries; Ministry of Health and Welfare (2024) for TWN; SINGSTAT (2024) and WHO (2024) for SGP; Health Bureau (2022) for HKG. See text for more information.

8.3.2 Generosity

As mentioned above, the generosity of healthcare systems was measured by affordability, provision, and access regulation. Co-payment rate and contribution rate for healthcare insurance were two indicators of the generosity of the healthcare system. Table 8.16 is household out-of-pocket expenditure per capita measured by the current US dollar in selected OECD countries and East Asian healthcare systems in 2022 or the latest year when

the latest data were available. The data of OECD and East Asian healthcare systems, except for Hong Kong and Taiwan, were retrieved from the global health expenditure database developed by the WHO (2025). This indicator mainly measures how much a patient pays for medical services at the point of use. However, it should be noted that this indicator is influenced by household income. High out-of-pocket payments might be attributed to catastrophic and impoverishing household spending. Although it was possible to use indicators using the percentage of GDP, the data provided by the WHO using relative measurements among OECD countries remained largely the same, which was not ideal for further cluster analysis.

The data for Taiwan were from Pu et al. (2023), who conducted a cross-sectional household survey and estimated that the household out-of-pocket expenditure was 37,705 NT\$ after reimbursement in 2022. At the time of this study, 30 NT\$ was equal to 1 US\$. Hence, the household out-of-pocket expenditure was approximately 1,257 US\$. The number for Hong Kong is calculated using information provided by Lee et al. (2022). According to Lee et al. (2022), the household out-of-pocket payment was 53,586 million HK\$ in FY2019/2020 (p. 19). Since the number shown here is the total household out-of-pocket payment, to make it comparable, it is necessary to consider the population and the currency. The financial year starts in April. Hence, the population of mid-2019 was used to calculate (7,524,100) (Census and Statistics Department, HKSAR, 2023). 1 HK\$ was equal to 0.1276 US\$ in 2019. Based on all these figures, the household out-of-pocket expenditure in the current US\$ can be calculated as 908 (approximately).

Table 8.16: Household Out-of-pocket Expenditure in OECD 17 and East Asia, Per Capita, in Current US\$, 2022 or Latest Available	
OECD 17	
Country/Region	Household Out-of-pocket Expenditure
AUS	975
AUT	1026
BEL	1014
CAN	924
DNK	819
FIN	884
FRA	480
DEU	682
IRL	678
ITA	657
NLD	613
NZL	572
NOR	1269
SWE	785
CHE	2426
GBR	975
USA	1335
East Asia	
JPN	523
KOR	876
TWN	1257
SGP	893
HKG	908
Sources: WHO (2025) for OECD countries and SGP; Pu et al. (2023) for TWN; Census and Statistics Department (2023) for HKG.	

The provision or service availability of healthcare systems was measured by the density of human resources and hospital beds. Table 8.17 includes information on the number of doctors and hospital beds per 1000 population in selected OECD countries and East Asian

healthcare systems in 2021 or the year when the latest data were available. The data for OECD countries are retrieved from OECD (2024a), while the data for Singapore and Hong Kong were taken from OECD/WHO (2022). Statistics for Taiwan measured registered health professionals, including multiple categories (Ministry of Health and Welfare, Taiwan, 2023). To ensure comparability, only Western medicine physicians (22.79 per 10,000 population) and doctors of Chinese medicine (3.3 per 10,000 population) were counted, as they provided direct care to patients (following OECD's definition).

Table 8.17: Number of Doctors and Hospital Beds per 1000 Population in OECD 17 and East Asia, 2021 or Latest Available		
OECD 17		
Country/Region	Doctors	Hospital Beds
AUS	4.0	3.8
AUT	5.4	6.9
BEL	3.3	5.5
CAN	2.8	2.6
DNK	4.4	2.5
FIN	3.6	2.8
FRA	3.2	5.7
DEU	4.5	7.8
IRL	4.0	2.9
ITA	4.1	3.1
NLD	3.9	3.0
NZL	3.5	2.7
NOR	5.2	3.4
SWE	4.3	2.0
CHE	4.4	4.4
GBR	3.2	2.4
USA	2.7	2.8
East Asia		
JPN	2.6	12.6
KOR	2.6	12.8
TWN	2.6	7.4
SGP	2.5	2.0
HKG	2.0	4.1
Sources: OECD (2024a) for OECD countries; OECD/WHO (2022) for SGP,		

Table 8.18 is the UHC index for OECD and East Asian healthcare systems. Data were retrieved from the WHO (2024) except for Taiwan and Hong Kong. The data for Taiwan was from the Ministry of Health and Welfare (2025), while the figure for Hong Kong was not available. Imputation from other sources was not achievable, as the UHC index was a complex indicator that involved several different sub-indicators (e.g., reproductive, maternal,

newborn, and child health). Therefore, in the following analysis, the data for Hong Kong is replaced by the mean of all available data (i.e., mean imputation, see e.g., van Buuren, 2018, p. 12). Although mean imputation had limitations and does not represent the real UHC index for Hong Kong, it was acceptable as most healthcare systems included in this thesis have similar levels of UHC index (see Table 8.18).

Table 8.18: UHC Index in OECD 17 and East Asia, 2021 or Latest Available	
OECD 17	
Country/Region	UHC
AUS	87
AUT	85
BEL	86
CAN	86
DNK	82
FIN	86
FRA	85
DEU	88
IRL	83
ITA	84
NLD	85
NZL	85
NOR	87
SWE	85
CHE	86
GBR	88
USA	86
East Asia	
JPN	83
KOR	89
TWN	89
SGP	89
HKG	N/A
Sources: WHO (2024) for OECD countries and SGP; Ministry of Health	

Table 8.19 shows the access index in selected OECD countries and four East Asian healthcare systems. In Table 8.19, 1 denotes strong and compulsory gatekeeping; 2 denotes partial or financially encouraged gatekeeping; 3 represents no gatekeeping effects, and

patients have a large degree of freedom to choose healthcare providers. The major source of data was Moolla et al. (2021). South Korea, Taiwan, and Hong Kong are not included. According to Kwon et al. (2015), there was a very weak gatekeeping mechanism in South Korea. There was no gatekeeping system in Taiwan and Singapore (Tikkanen et al., 2020; Mossialos, 2016). In contrast, patients could only access specialists in public hospitals by referral in Hong Kong (He, 2019, p. 219).

OECD 17	
Country/Region	Index
AUS	2
AUT	3
BEL	2
CAN	1
DNK	1
FIN	1
FRA	2
DEU	2
IRL	2
ITA	1
NLD	1
NZL	1
NOR	1
SWE	3
CHE	2
GBR	1
USA	3
East Asia	
JPN	3
KOR	3
TWN	3
SGP	3
HKG	1

Note: 1 denotes strong and compulsory gatekeeping. 2 denotes partial or financially encouraged gatekeeping. 3 denotes no gatekeeping effects.
Sources: Moolla et al. (2021) for OECD countries; Kwon et al. (2015) for KOR; Tikkanen et al. (2020) and Mossialos (2016) for TWN, SGP; He (2019) for HKG.

8.3.3 Integration and Segmentation

Table 8.20 measures the integration index in selected OECD countries and East Asia healthcare systems. The data source for integration between insurers and providers was Toth

(2020) for OECD countries except Finland. If the providers and the insurers are integrated (i.e., the provision of healthcare services and health insurance are managed by the same organisation), the integration index is 1. Otherwise, the integration index is 0. According to Tynkkynen et al. (2023), the Finnish healthcare system experienced reform in 2023. The principal system remains publicly financed and organised, although there are private sectors and occupational healthcare with a national health insurance scheme. In Taiwan, as Lee et al. (2008) mentioned, it was a national health insurance healthcare model where the delivery of healthcare was dominated by the private sector, while financing was centrally administered (cf. Tikkanen et al., 2020). In Singapore, healthcare was mainly financed via Medisave, which was an important component of CPF, while the provision of healthcare was delivered via multiple actors (e.g., public polyclinics, private GPs, various types of hospitals) who were not directly managed by the government (Tikkanen et al., 2020). The healthcare system in Hong Kong was integrated and similar to the National Health Service in the UK. Hong Kong citizens were entitled to access public healthcare services. The provision of healthcare services (e.g., hospital and general practitioners) was managed by a corporatised organisation called Hospital Authority (cf. He, 2019).

Regarding relationships between patients and insurers, in line with cash benefits, the existence of universal healthcare insurance was used. On the one hand, the healthcare systems dominated by the national healthcare service model (i.e., universal healthcare that covers everyone based on citizenship) are coded as 1. Following Lee et al. (2008), healthcare systems with the national insurance model (i.e., a single or dominant insurance plan for most of the population) are coded as 2. On the other hand, healthcare systems that rely on social insurance, especially in the case where insurance plans vary by occupations, are coded as 3. Finally, other forms of relation between patients and insurers (e.g., the US healthcare system where pluralism was prevalent) are coded as 4. It should be noted that here the national health

service, national health insurance, social health insurance, or private insurance models only represent relationships between insurers and patients rather than labels or categories for the healthcare systems as a whole. The data for this variable were compiled by the author based on the country profile in the ISSA and the health system summary from the WHO, where the healthcare system was briefly introduced.

Table 8.20: Integration Index in OECD 17 and East Asia		
OECD 17		
Country/Region	Providers & insurers	Patients & insurers
AUS	0	1
AUT	0	3
BEL	0	3
CAN	0	1
DNK	1	1
FIN	1	1
FRA	0	3
DEU	0	3
IRL	1	1
ITA	1	1
NLD	0	3
NZL	1	1
NOR	1	2
SWE	1	1
CHE	0	3
GBR	1	1
USA	0	4
East Asia		
JPN	0	3
KOR	0	2
TWN	0	2
SGP	0	2
HKG	1	1

Note: The integration between providers and insurers is measured by whether the provision and insurance are managed by the same organisation (1 denotes yes, 0 denotes no). The relationships between patients and insurers are measured by the programme type (1 denotes universal healthcare. 2 denotes national insurance. 3 denotes social insurance. 4 denotes other forms.
Source: compiled by the author based on ISSA (n.d.), Toth (2020). See text for more details.

8.3.4 The Healthcare Mix

The financing mix of healthcare in 17 OECD countries and East Asia is measured by the expenditure of government schemes and compulsory contributory healthcare financing

schemes and voluntary health care payment schemes plus household out-of-pocket payment. As mentioned in Section 8.3.1, the expenditure of government schemes and compulsory contributory healthcare financing schemes mainly measures the governmental intervention in healthcare. In contrast, the expenditure of voluntary health care payment schemes plus household out-of-pocket payment measures the financial input from non-governmental actors. Similarly, due to the absence of a comparable dataset, private health expenditure was used for Taiwan, Singapore, and Hong Kong.

The data for OECD countries were retrieved from OECD (2023a). The private healthcare expenditure in Taiwan in 2022 was 532,027 million NT\$ (Ministry of Health and Welfare, Taiwan, 2024), and GDP was 22,679,843 million NT\$. The private expenditure accounts for 2.3% of the GDP. There was no directly available data for Singapore, but according to the WHO (2024), domestic private health expenditure occupied 37.01% of current health expenditure in 2021, and the current health expenditure was 5.57% of GDP in 2021. Hence, the private health expenditure as a share of GDP could be calculated as 2.06%. The private health expenditure as a percentage of GDP in Hong Kong was 3.9% in 2022/2023 (Health Bureau, HKSAR, 2022).

8.3.5 Performance/outcome

Although Section 8.1.2 suggests some ideal indicators for measuring the performance and outcome of the healthcare systems, due to the lack of comparable and consistent data for OECD and East Asian healthcare systems, the health outcome indicators are used as an alternative. Table 8.21 contains information about the health outcome in selected OECD countries and East Asian health systems in 2021 or the year when the latest data were available. including life expectancy at birth, infant mortality rate (per 1000 live births), and maternal mortality rate (per 100,000 births, based on modelled estimate). Data on life expectancy were available from OECD health indicators (OECD, 2024a). Infant and maternal

mortality rates were retrieved from the World Bank (n.d.). The mortality rates for Hong Kong are retrieved from Census and Statistics Department (2023), while the life expectancy could be found in the World Bank dataset. The data for Taiwan were available from the National Statistics (n.d.). All data for Singapore were from the World Bank dataset.

OECD 17			
Country/Region	Life expectancy	Infant mortality rate	Maternal mortality rate
AUS	83.2	3.0	3.0
AUT	81.6	3.0	5.0
BEL	82.5	3.0	5.0
CAN	81.6	4.0	11.0
DNK	81.9	3.0	5.0
FIN	81.7	2.0	8.0
FRA	83.1	3.0	8.0
DEU	80.7	3.0	4.0
IRL	82.6	3.0	5.0
ITA	83.8	2.0	5.0
NLD	82.0	3.0	4.0
NZL	82.3	4.0	7.0
NOR	82.6	2.0	2.0
SWE	83.4	2.0	5.0
CHE	84.2	4.0	7.0
GBR	80.4	4.0	10.0
USA	76.4	5.0	21.0
East Asia			
JPN	84.1	2.0	4.0
KOR	83.6	2.0	8.0
TWN	79.8	4.3	14.0
SGP	83.0	2.0	7.0
HKG	84.0	1.6	3.0

Sources: OECD (2024a); World Bank (n.d.); Census and Statistics Department (2023)

Table 8.22 shows the descriptive statistics for all healthcare indicators. This table contains the type of variables, minimum, maximum, mean, and standard deviation for each variable used for RQ2.

Table 8.22: Descriptive Statistics for Healthcare Variables

Variable	Type	Min	Mean	S. d.	Max
Public healthcare expenditure (%)	numeric	2.9	7.98	2.38	14.1
Private healthcare expenditure (%)	numeric	1.2	2.34	0.85	4.1
Out-of-pocket expenditure (USD)	numeric	480	935.05	407.1	2426
The number of doctor	numeric	2	3.58	0.92	5.4
The number of hospital bed	numeric	2	4.69	3.11	10.8
UHC index	numeric	82	85.91	0.92	89
Access	categorical	1	1.91	N/A	3
Integration b/w providers & insurers	binary	0	0.41	N/A	1
Integration b/w patients & insurers	categorical	1	1.95		4
Life expectancy (yrs)	numeric	76.4	82.21	1.77	84.2
Infant mortality rate (%)	numeric	1.6	2.95	0.95	3.4
Maternal mortality rate (%)	numeric	2	6.86	4.26	21

In order to assess the latest development, the data construction process collected the latest data. This means that some indicators are influenced by the recent COVID-19 pandemic, especially for healthcare system indicators for RQ2. For example, health expenditure, out-of-pocket expenditure, and life expectancy are strongly influenced by COVID-19. During data collection, attention has been paid to the year of the data, and efforts have been made to keep all the data for the same year or its closest years. In addition, other indicators are less influenced by COVID-19, such as access and integration (see above). Nonetheless, this thesis also acknowledges that the impact of COVID-19 cannot be fully minimised at the time of conducting the analysis (see Section 11.3).

Chapter 9 Cluster Analysis

The aim of this chapter is to conduct the cluster analysis using the data gathered from various datasets (see Chapter 8). Firstly, the process of preparing cluster analysis is demonstrated (Section 9.1). Secondly, hierarchical cluster analysis generates dendrograms (Section 9.2). In addition, fuzzy cluster analysis reveals the membership of the Japanese welfare state (Section 9.3). After conducting cluster analysis for welfare systems, both hierarchical cluster analysis and fuzzy cluster analysis are applied for healthcare systems (Sections 9.4 and 9.5).

9.1 Preparation and Relevant Algorithms

Before conducting the cluster analysis, it is important to review the assumptions of cluster analysis. This section briefly addresses the preparation of the cluster analysis (Section 9.1.1), measurement of proximity (Section 9.1.2) and relevant algorithms for conducting the cluster analysis (Sections 9.1.3 and 9.1.4).

9.1.1 Preparation of Cluster Analysis

The first issue was the selection of statistical software. The cluster analysis in this thesis was achieved via the latest version of R (version 4.4.1) and RStudio (version 2024.04.2+764). The reason for selecting R rather than other statistical software (e.g., SPSS, Stata) was that the open-source software R has available packages to achieve soft cluster analysis, while similar functions were absent in other software packages. Although Stata could also be used to conduct cluster analysis, the R package “fclust” provided various tools for soft cluster analysis when the variables were mixed types of data (i.e., containing both continuous data and qualitative data) (Ferraro et al., 2019).

The second issue was the standardisation or normalisation of the data. Standardisation was recommended prior to the cluster analysis since standardisation could reduce the influence of scale on similarity or dissimilarity (Everitt et al., 2011; Hair et al., 2019).

Standardisation was widely used by scholars who have adopted cluster analysis as their method for classification (see e.g., Reibling et al., 2019; Moolla et al., 2021; Yorük et al., 2022). Nevertheless, this thesis selects Gower's distance as the measurement for proximity, which inherently includes the standardisation of various types of data (see below for further discussion). Therefore, no extra standardisation is applied in this thesis.

The third issue was whether data simplification is needed before conducting the cluster analysis. Sometimes, typologists conducted PCA prior to the cluster analysis (see e.g., Yorük et al., 2022). Nonetheless, the aim of PCA or FA was to reduce complexity in data and identify possible dimensions within a large number of variables. As reviews in Section 7.3, this did not directly relate to the aim of classification. In addition, compared to other cluster analyses with large amounts of data (e.g., Danforth, 2014; Yorük et al., 2022), only 28 variables for 22 welfare systems were included in this analysis. Longitudinal data were not used in this analysis, as the aim of the analysis was to provide a classification using the latest data available. The data structure had relatively lower levels of complexity. Hence, specific techniques (e.g., QCA, FA) to simplify data prior to cluster analysis were not necessary in this thesis. Nevertheless, one change in the original dataset has been made: the legal coverage rate of non-contributory sickness benefits was omitted in the cluster analysis. This was because, as shown in Table 8.7 and Table 8.13, none of the cases included in this thesis offer non-contributory sickness benefits. As a result, the dataset for analysis consisted of 27 variables (of which 3 are binary, and 24 are numeric) for 22 welfare systems.

The fourth issue was the assumptions of cluster analysis. According to Hair and his colleagues (2019), the existence of structure, sample size, and multicollinearity were three critical assumptions for cluster analysis (p. 211). Firstly, the existence of clusters is derived from theories (see Chapters 2-4). Secondly, since this research examines the population (i.e., 17 OECD plus 5 East Asian welfare systems) directly, which means that samples do not exist,

the representativeness of the sample does not apply to this analysis. Thirdly, multicollinearity can impact clustering results because it implicitly assigns weightings to variables (Hair et al., 2019, p. 211). However, all variables were theoretically important in terms of measuring the generosity and institutional features of cash benefits. Even if there were strong correlations between variables, this was a feature of the data. Hence, variables with high levels of correlation should not be excluded from the cluster analysis.

The fifth issue was the influence of outliers. Cluster analysis was sensitive to outliers (Hair et al., 2019, p. 204). It was necessary to examine the effect of outliers before conducting the cluster analysis. Outliers sometimes represented only a small segment of the population or did not represent the population at all (Hair et al., 2019, p. 204). However, no action was taken to address the outliers for this thesis. This was because this research studies the population instead of samples. More importantly, as reviews in Chapters 2 and 3, Japan was sometimes conceived as an outlier or a unique case in existing typologies. Excluding outliers led to the failure to achieve the research aim of this thesis.

9.1.2 Measurement of Proximity

Cluster analysis was based on the proximity (cf. Section 7.3.1). Hence, it was important to decide the measurement of proximity. Proximity sometimes referred to dissimilarity, similarity, or distance. Proximity played a central role in cluster analysis, since cluster analysis classified objects based on how close they are to each other (Everitt et al., 2011, p. 43). There were various measurements for proximity. In previous literature, Euclidean distance and Gower's distance were the two most common measurements for proximity. Euclidean distance was suitable for continuous data. Euclidean distance could be calculated by Formula 1.1 below:

$$d_{ij} = \sqrt{\sum_{k=1}^p (x_{ik} - x_{jk})^2}$$

(Formula 1.1)

Sometimes the squared Euclidean distance was used (e.g., Powell & Barrientos, 2004; Reibling et al., 2019), which was defined as Formula 1.2:

$$d_{ij}^2 = \sum_{k=1}^p (x_{ik} - x_{jk})^2$$

(Formula 1.2)

In both formulas, x_{ik} represented the value for the k th variable of object i , while x_{jk} represented the value for the k th variable of object j . p denoted the number of variables. d_{ij} represented the Euclidean distance between object i and object j (Everitt et al., 2011, p. 49).

However, Euclidean distance or squared Euclidean distance was only suitable for numeric data (Everitt et al., 2011, p. 49), whereas binary data were contained in this analysis. Although Reibling and her colleagues (2019) claimed that Euclidean distance could also be used with mixed-scale data (p. 614), a solid choice for mixed types of data is Gower's (Everitt et al., 2011, p. 54; Hennig, 2016, p. 714). Gower's distance was proposed by Gower (1971). For quantitative variables, Gower (1971) suggested the similarity distance calculated by the following Formula 2:

$$s_{ijk} = \frac{1 - |x_{ik} - x_{jk}|}{R_k}$$

(Formula 2.1)

Here, R_k referred to the range for the k th variable. For example, as shown in Table 8.5, the range for the duration of pension benefits was $27 - 18 = 9$. The distance between Japan and South Korea in terms of the duration of pension benefits could be calculated as $\frac{1 - |27 - 24|}{9} = \frac{2}{9}$. For binary variables and categorical variables, when two values were the same, s_{ijk} is 1; otherwise, s_{ijk} was 0 (Gower, 1971). For example, both Japan and South Korea did not have

occupational pension schemes (see Table 8.10). Therefore, the similarity between Japan and South Korea in terms of occupational pension schemes was 1.

The overall similarity between object i and object j was given via Formula 2.2:

$$s_{ij} = \frac{\sum_{k=1}^p w_{ijk} s_{ijk}}{\sum_{k=1}^p w_{ijk}}$$

(Formula 2.2)

In this formula, w_{ijk} was 0 if object i and object j were not comparable due to missing data; otherwise w_{ijk} was 1 (Everitt et al., 2011, p. 54; Gower, 1971, p. 859).

Gower's distance is favoured by this thesis because Euclidean distance is not compatible with binary and categorical data. The rationale is that Euclidean distance is unable to provide a meaningful interpretation for the distance of binary data. For example, Japan did not have means-tested pension schemes (i.e., 0), while South Korea had (i.e., 1) (see Table 8.10). Based on Formula 1.1 or Formula 1.2, the Euclidean distance between the two countries in terms of means-tested pension schemes was 1. However, if we used formula 1.1 to calculate the Euclidean distance for the benefit duration of pension in Japan and South Korea, which was a numeric variable, we could find that the distance is 3. The interpretation of the two calculations above was that the distance (or similarity, dissimilarity, proximity) for the benefit duration of pensions was three times as large as the existence of means-tested pension schemes. In other words, the duration of the benefit had a larger impact on the clustering result than the existence of means-tested pension schemes. This interpretation was problematic because the meaning of the distance of benefit duration was fundamentally different from the existence of means-tested pension schemes.

9.1.3 Relevant Algorithms for Hierarchical Cluster Analysis

As reviewed in Section 7.3, hierarchical cluster analysis could be divided into agglomerative and divisive. This thesis follows the choice of previous literature and uses the

agglomerative method for hierarchical cluster analysis. There were various clustering methods for agglomerative hierarchical cluster analysis, such as single linkage, complete linkage, average linkage, and Ward’s method. Table 9.1 summarises clustering methods for agglomerative hierarchical cluster analysis based on Contreras and Murtagh (2016) and Everitt et al. (2011).

Table 9.1: Clustering Methods for Hierarchical Cluster Analysis			
Methods		Rationale	Example
Linkage	Single	Nearest Neighbor	Wendt (2009, 2014)
	Complete	Farthest Neighbor	Moolla et al. (2020); Reibling (2010); Wendt (2009, 2014)
	Average (UPGMA)	Arithmetic center (without weighting the size)	Jensen (2008); Reibling et al. (2019)
	WPGMA	Arithmetic center (with weighting the size)	N/A
Specified center	Ward's	Minimize ESS or variance	Danforth (2014); Powell & Barrientos (2004); Reibling et al. (2019); Wendt (2009, 2014); Yorük et al. (2022)
	Centroid (UPGMC)	Geometric center (without weighting the size)	N/A
	Median (WPGMC)	Geometric center (with weighting the size)	N/A

The most popular clustering method in the literature was Ward’s method (see Table 9.1). Ward’s method aimed to minimise the error sum of squares (ESS) or variance within the group (Contreras & Murtagh, 2016; Everitt et al., 2011; Ward, 1963). ESS could be calculated via Formula 3:

$$ESS = \sum_{i=1}^k \sum_{x \in C_i} \sum_{j=1}^v (x_j - \bar{x}_{ij})^2$$

(Formula 3)

In Formula 3, k was the number of clusters. x was an object with v variables in cluster C_i . x_j was the value of x in the j th variable. \bar{x}_{ij} was the mean of cluster C_i in the j th variable. An agglomerative hierarchical cluster analysis started with each object in its own group (i.e., at this time, $ESS = 0$). Following Ward’s method, two objects with minimal increase of ESS within the group were combined until a single cluster including all objects was formed.

Ward’s method was a type of clustering method that specified the centre of a cluster. Similar to Ward’s method, the centroid and median methods were two other clustering

methods that specified the centre (Contreras & Murtagh, 2016). The centroid method or unweighted pair-group method using the centroid approach (UPGMC) combined two objects based on the minimal squared Euclidean distance of their centroids. The median method or weighted pair-group method using the centroid approach (WPGMC) followed the same principle except that the centroids were weighted by the sizes of the clusters (Everitt et al., 2011). Given the fact that all three types of methods (i.e., Ward's method, UPGMC, and WPGMC) assumed "points can be represented in Euclidean space" in the original dataset (Everitt et al., 2011, p. 79), cluster methods that specified centre were less effective to deal with mixed types of data, because binary data were interpreted differently from continuous data (see the discussion above).

Excluding clustering methods with the assumption of Euclidean space, four linkage methods were reviewed. In the single linkage, the distance between groups was decided by the two nearest objects. By contrast, complete linkage defined the distance by the two furthest objects (Everitt et al., 2011, p. 76). For the average linkage or unweighted pair-group method using the average approach (UPGMA), the distance between groups was determined by the arithmetic centres (i.e., means) of all objects. Similarly, the weighted pair-group method using the average approach (WPGMA) follows the same logic as UPGMA except that the sizes of groups were considered when calculating the means. According to Everitt et al. (2011), all four types of linkage methods are compatible with the proximity matrix. The proximity matrix could be generated via Gower's distance (see the discussion above). Hence, four types of linkage methods will be used, and their results will be compared in the following analysis.

After conducting hierarchical analyses based on four types of linkage methods, validation of cluster results was necessary. Comparing the correlation between cophenetic distance and original distance was an approach to validate the hierarchical cluster analysis

(see Kassambara, 2017; Saraçlı et al., 2013; Sokal & Rohlf, 1962). The cophenetic coefficient was given by Formula 4:

$$c = \frac{\sum_{i < j} (|x_i - x_j| - \bar{x})(|t_i - t_j| - \bar{t})}{\sqrt{\left[\sum_{i < j} (|x_i - x_j| - \bar{x})^2 \right] \left[\sum_{i < j} (|t_i - t_j| - \bar{t})^2 \right]}}$$

(Formula 4)

In Formula 4, $|x_i - x_j|$ represented the distance between object i and object j in the original dataset. \bar{x} was the mean of all distances. Both $|x_i - x_j|$ and \bar{x} were given by Gower's distance in this case. $|t_i - t_j|$ represented the dendrogrammatic distance between object i and object j (i.e., the height of the dendrogram at the point where object i and object j were first joined into a single cluster). \bar{t} was the mean of all dendrogrammatic distances. The summation only ran when $i < j$. A higher cophenetic coefficient denoted a better cluster solution (Kassambara, 2017; Saraçlı et al., 2013).

9.1.4 Relevant Algorithms for Soft Cluster Analysis

Soft cluster analysis has not been applied in previous studies. Section 7.3.1 has addressed the rationale for using soft cluster analysis. This section first compares the differences between the commonly used K-means and fuzzy K-means. Then, it introduces the soft cluster analysis algorithms for this thesis. Finally, the result of soft cluster analysis is interpreted.

For n objects and k clusters, the objective function for K-means cluster analysis was given via:

$$KM = \sum_{j=1}^k \sum_{i=1}^n d^2(x_i, m_j)$$

(Formula 5.1)

Where n was the number of data points; k was the number of clusters; m_j was the centre of cluster j , while x_i represented the value of the data point i . $d(x_i, m_j)$ was the distance between the data point i and the cluster centre m_j . The aim of K-means cluster analysis was to minimise the within-cluster dissimilarity given the number of clusters (i.e., k) (Hastie et al., 2009, p. 509)

The most common soft cluster analysis was the fuzzy K-means (sometimes referred as C-means). Fuzzy C-means cluster analysis was based on a weighted sum of squares. Similarly, for n objects and k clusters, the clustering algorithm for fuzzy C-means cluster analysis was to calculate the membership u_{ij} by minimising the following:

$$FCM = \sum_{j=1}^k \sum_{i=1}^n u_{ij}^v d^2(x_i, m_j)$$

(Formula 5.2)

Generally, u_{ij} fell between 0 and 1. If u_{ij} was 0 or 1, a crisp solution was reached (see Formula 7). For a specific object, the sum of the membership of all clusters was 1 (i.e., $\sum_{j=1}^k u_{ij} = 1$). v was the fuzzifier (generally taken as 2), which could influence the membership distribution (Everitt et al., 2011, p. 245; Hathaway & Bezdek, 1988).

However, continuous data were assumed in the crisp k-means cluster analysis and fuzzy c-means cluster analysis mentioned above (see Everitt et al., 2011, p. 245; Hastie et al., 2009, p. 509), because it was not helpful to discuss the centre of categorical variables (e.g., we could not identify the mean of whether a country had an occupational pension). As the data involved in this thesis contained binary variables, the fuzzy relational clustering based on the dissimilarity matrix was used. Kaufman and Rousseeuw (2005) suggested a relational clustering method called FANNY (see also D'Urso, 2016, p. 560; Everitt et al., 2011, pp. 245-246). Although Kaufman and Rousseeuw (2005) stated that “it contains nothing but the dissimilarity $d(i, j)$ and the membership coefficients that we are trying to find. This explains

why interval-scaled measurements are not required” (p. 171), Giordania et al. (2020) argued that “a limit of FANNY is that it might fail when the matrix \mathbf{D} does not contain Euclidean distances. In fact, the non-negativity of the membership degrees is not guaranteed unless Euclidean distances are used” (p. 175). To overcome this limitation, Giordania et al. (2020) suggested using the non-Euclidean fuzzy relational data clustering algorithm (NEFRC) instead of FANNY. As there was debate on whether FANNY was suitable for mixed-type data (i.e., non-Euclidean distance), this thesis uses NEFRC solely for the fuzzy cluster analysis.

For n objects and k clusters, the objective function of NEFRC was given by (Davé & Sen, 2002; Ferraro et al., 2019; Giordania et al., 2020):

$$NEFRC = \sum_{v=1}^k \frac{\sum_{i=1}^n \sum_{j=1}^n u_{iv}^m u_{jv}^m d(i, j)}{2 \sum_{j=1}^n u_{jv}^m}$$

(Formula 5.3)

Where u_{iv} and u_{jv} were the memberships of object i and object j in the cluster v respectively. Usually set as 2, m was the fuzzier. Different from Formula 5.1 and Formula 5.2 where the Euclidean distance was assumed, in Formula 5.3, $d(i, j)$ was the dissimilarity between object i and object j . Therefore, continuous variables were not required in NEFRC, and the dissimilarity based on Gower’s distance could be used (Ferraro et al., 2019; Giordania et al., 2020).

The silhouette score could be used to capture the strength of the classification by comparing the next best cluster (Everitt et al., 2011; Rousseeuw, 1987). To calculate the silhouette score, both intra-cluster distance and nearest-cluster distance were needed. The intra-cluster distance (d_i) was defined as the average distance between the object i and other objects in the same cluster. The nearest-cluster distance (d_n) referred to the minimum

average distance between the object i and all other objects in the nearest different cluster. The silhouette score for object i could be calculated via:

$$SIL_i = \frac{d_n - d_i}{\max(d_n, d_i)}$$

(Formula 6.1)

If the number of objects was j , the overall silhouette score was the average silhouette score for all objects (Rousseeuw, 1987):

$$SIL = \frac{1}{j} \sum_{i=1}^j SIL_i$$

(Formula 6.2)

Campello and Hruschka (2006) extended the silhouette score to fuzzy cluster analysis.

The fuzzy silhouette score (SIL.F) was given in Formula 6.3:

$$SIL.F = \frac{\sum_{i=1}^n (u_{ik} - u_{ik'})^\alpha SIL_i}{\sum_{i=1}^n (u_{ik} - u_{ik'})^\alpha}$$

(Formula 6.3)

Where SIL_i was the silhouette score for object i , which was provided by Formula 6.3.

Usually set as 1, α was a weighting coefficient. u_{ik} and $u_{ik'}$ were the largest and second-largest elements in the i th row of the fuzzy partition matrix (i.e., a matrix included information on the degrees of membership) (Campello and Hruschka, 2006; D'Urso, 2016; Giordania et al., 2020).

9.1.5 Deciding the Number of Clusters

Before conducting the cluster analysis, another important issue was to address the issue of selecting the number of clusters. Unfortunately, there was no defined rule for deciding the best cluster solution (see Giordania et al., 2020; Hennig, 2016).

For example, the pseudo-F statistic involved calculations of variance (Hair et al., 2019, p. 223). However, the traditional variance measure was only defined for numeric data. Most

existing research using cluster analysis only included continuous data with a few exceptions (e.g., Reibling, 2010; Reibling et al., 2019; Wendt, 2009, 2014). Wendt (2009, 2014) did not use any stopping rules, while Reibling and her colleagues (2019) used Calinski/Harabasz and Duda/Hart stopping rules (cf. Halkidi et al., 2016). On the other hand, k needed to be specified for the fuzzy cluster analysis. This was achieved by the calculation of the SIL.F. Tables 9.6 and 9.12 reveal that the SIL.F is the highest among all choices of k and m . Hence, it is not necessary to perform another check for the number of clusters in the fuzzy cluster analysis.

In addition to these statistical standards for choosing the optimal number of clusters, field knowledge also played an important part. Considering both aspects, all possible numbers of k are taken into consideration in the following interpretation. Nonetheless, the single cluster solution ($k = 1$) is not considered as it does not generate meaningful results. Furthermore, this thesis is not interested in the classification with more than 6 clusters. The selection of the threshold ($k = 6$) is based on theory: scholars suggested that welfare regimes or healthcare systems are usually clustered into three to five groups (see Chapters 2-4). The reason for setting $k = 6$ instead of $k = 5$ is to allow the possibility for Japan to be classified as an outlier (see Chapter 3).

The following interpretation starts with reviewing all cluster solutions (from $k = 2$ to $k = 6$) for both hierarchical and fuzzy cluster analyses. Then, only the cluster solutions with a percentage change in heterogeneity exceeding the average are retained for further analysis.

9.2 Cluster Analysis for Welfare Systems

Previous sections have demonstrated the rationale and process of conducting hierarchical cluster analysis and fuzzy cluster analysis for welfare systems. This section will shift the focus to demonstrate results generated by two types of cluster analysis for welfare systems.

9.2.1 Hierarchical Cluster Analysis

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{HKG, AUS, NZL}	The rest of cases	0.2506728	2→1	0.0270449	12.0937057
20	{JPN}	{SGP, CHE, GBR, FRA,..., IRL}	0.2236279	3→2	0.0003162	0.1415958
19	{SGP}	{CHE, GBR, FRA, NOR,..., IRL}	0.2233117	4→3	0.0013698	0.6171886
18	{CHE}	{GBR, FRA, NOR, DNK,..., IRL}	0.2219419	5→4	0.0000053	0.0023881
17	{GBR}	{FRA, NOR, DNK, SWE,..., IRL}	0.2219366	6→5	0.0018732	0.8512092
...

Note: k denotes the number of clusters. The average change of all stages is 5.1531016%.
Previous stages are omitted, since the author is not interested in results with k>6.

Hierarchical cluster analysis based on single linkage has the second highest level of cophenetic coefficient (0.70). Figure 9.1 is the result of the hierarchical cluster analysis based on single linkage (k = 2). The two-cluster solution was visible, while other cluster solutions could not be identified from the graph. The observation was supported by the percentage change of agglomeration coefficient: stage 21 generated one cluster from two clusters with the largest percentage; while the percentage changes of stages 17-20 were relatively small compared to other stages (see Table 9.2). This meant that stages 17-20 combined relatively homogeneous cases (i.e., they are supposed to be combined). In addition, excluding any case merging in stages 17-20 led to undesirable clustering results.

Figure 9.1: Hierarchical Cluster Analysis of Welfare Systems Based on Single Linkage

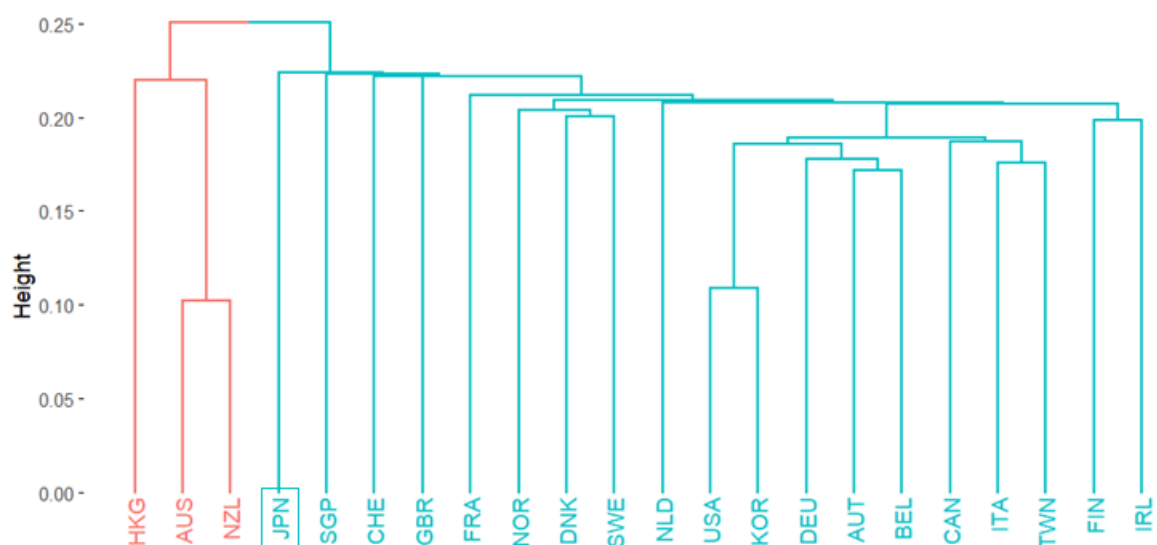


Table 9.2 illustrates that other cluster solutions are not meaningful. If the number of

clusters was set as 3, Japan formed a cluster with itself, while the rest of the cases except for Hong Kong, Australia, and New Zealand, were classified into one large group. When the number of clusters increased, more clusters with only one case were added. In the classification with six groups, the UK, Switzerland, Singapore, and Japan formed four single case groups. Such results with many outliers were highly unsatisfactory.

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{DNK, SWE,..., JPN }	The rest of cases	0.5198573	2→1	0.1124218	27.5925392
20	{HKG, AUS, NZL }	{FRA, FIN, IRL, CAN, GBR }	0.4074355	3→2	0.0145149	3.6941051
19	{DNK, SWE }	{SGP, DEU, AUT,..., JPN }	0.3929206	4→3	0.0199630	5.3526192
18	{SGP, DEU,..., TWN }	{NOR, CHE, NLD, JPN }	0.3729576	5→4	0.0364063	10.8174593
17	{NOR, CHE }	{NLD, JPN }	0.3365513	6→5	0.0172519	5.4030480
...

Note: k denotes the number of clusters. The average change of all stages is 9.0810924%.
Previous stages are omitted, since the author is not interested in results with $k > 6$.

Table 9.3 shows the percentage change of the agglomeration coefficient for complete linkage. Similarly, the largest percentage change happened in the last stage where two clusters combine. The percentage changes in the agglomeration coefficient of stage 20, stage 19, and stage 17 were relatively small compared to the mean of all stages, while stage 18 had the second largest figure among stages 17-21. This meant that two clusters merged in stage 18 were relatively heterogeneous (i.e., these two clusters should not be combined). Therefore, $k = 2$ and $k = 5$ were two possible stopping points, as their percentage changes in agglomeration coefficient were larger than the average.

Figure 9.2: Hierarchical Cluster Analysis of Welfare Systems Based on Complete Linkage

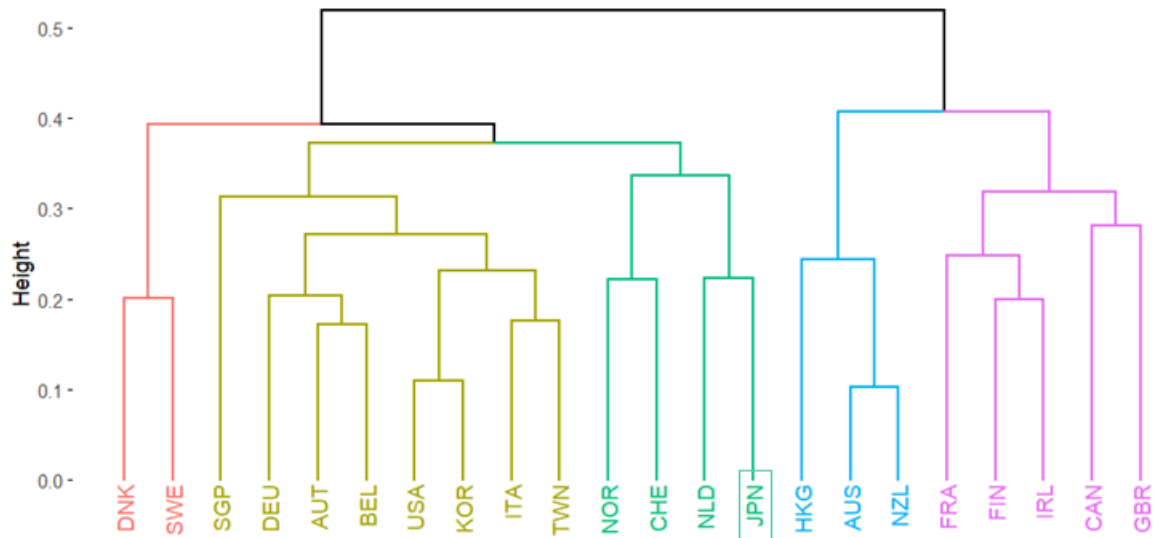


Figure 9.2 is the result of the hierarchical cluster analysis of welfare systems based on complete linkage. Although the cophenetic coefficient was the lowest among all linkage methods (0.64), compared with other linkage methods, the complete linkage generated the best dendrogram. Since complete linkage was able to generate the best dendrogram, it might be helpful to examine other stopping points.

If $k = 2$, both clusters contained three types of welfare regimes suggested by Esping-Andersen (1990). The first cluster included most social democratic and conservative welfare regimes with the exception of the United States. The second cluster contained mainly liberal welfare regimes such as the UK, Australia, and New Zealand with the exception of France and Finland which were considered as conservative and social democratic welfare regimes in Esping-Andersen's (1990) framework. Japan was classified into the first group. As the number of k increases, groups with a few cases could be identified. If $k = 3$, Hong Kong, Australia, and New Zealand formed a new cluster and separated from the second cluster in $k = 2$ (shown in blue in Figure 9.2). If $k = 4$, in addition to the previous three clusters, the fourth cluster including two social democratic welfare regimes (i.e., Denmark and Sweden) was separated from the first cluster in $k = 3$. When $k = 5$, a new cluster containing Norway,

Switzerland, the Netherlands, and Japan has been established (shown in green in Figure 9.2).

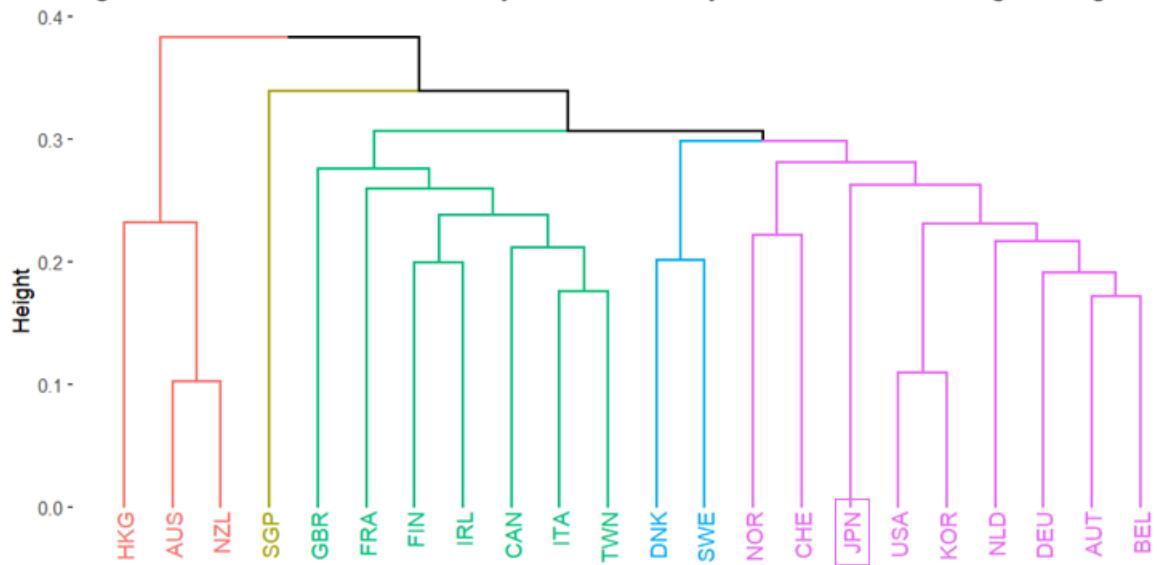
If the number of clusters increased to 6, Norway and Switzerland separated from the Netherlands and Japan.

Table 9.4: Agglomeration Schedule and % Change in Heterogeneity for Welfare Systems (Average Linkage)						
Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{HKG, AUS, NZL}	The rest of cases	0.3830087	2→1	0.0440394	12.9921500
20	{SGP}	{GBR, FRA, FIN,..., BEL}	0.3389693	3→2	0.0330226	10.7935794
19	{GBR, FRA,..., TWN}	{DNK, SWE, NOR,..., BEL}	0.3059467	4→3	0.0079647	2.6728796
18	{DNK, SWE}	{NOR, CHE, JPN,..., BEL}	0.2979820	5→4	0.0176579	6.2991016
17	{NOR, CHE}	{JPN, USA, KOR,..., BEL}	0.2803241	6→5	0.0047086	1.7083945
...

Note: k denotes the number of clusters. The average change of all stages is 7.3618875%.
 Previous stages are omitted, since the author is not interested in results with $k > 6$.

The result of average linkage had the highest cophenetic coefficient (0.72) among all linkage methods. According to Table 9.4, the two best cluster solutions are $k = 2$ and $k = 3$. Similar to single linkage, the two-cluster solution indicated that Hong Kong, Australia, and New Zealand belonged to the first group, while the rest of the cases (including Japan) formed another group (cf. Figure 9.1). When $k = 3$, this classification in fact was equal to a two-cluster solution plus an outlier (i.e., Singapore). If $k = 4$, which was not supported by the coefficient, Hong Kong, Australia, and New Zealand were clustered into the first group, while the other two groups mixed with all types of welfare systems.

Figure 9.3: Hierarchical Cluster Analysis of Welfare Systems based on Average Linkage



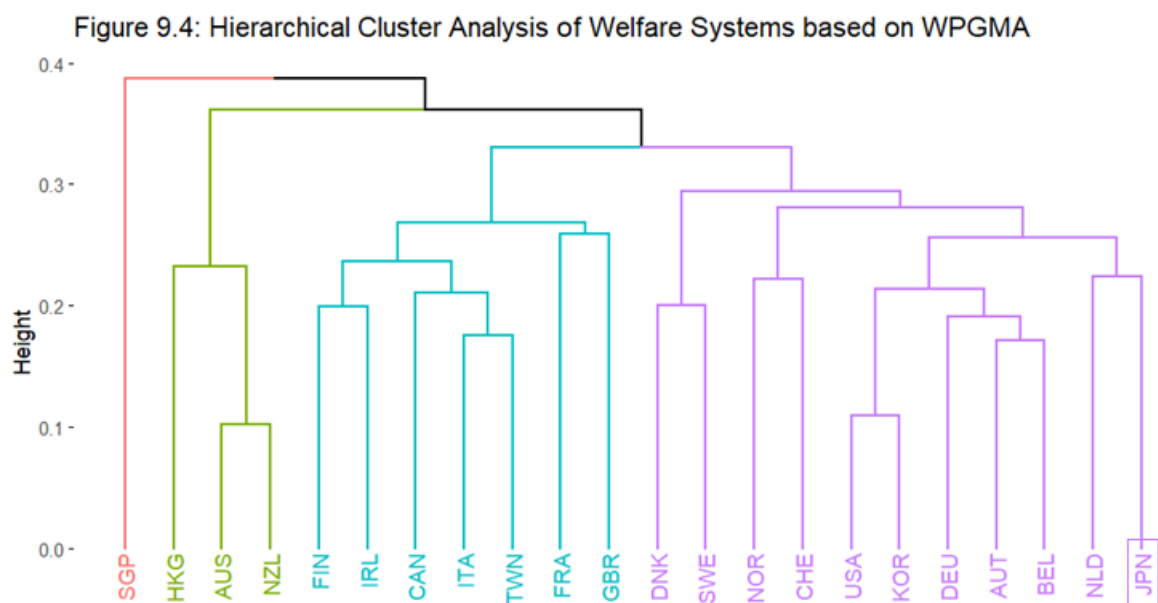
Another potential classification based on average linkage is $k = 5$ with the percentage change slightly lower than the average. Figure 9.3 shows the result based on average linkage when k is 5. In this classification, two social democratic welfare regimes (i.e., Denmark and Sweden) formed a distinct group (shown in red in Figure 9.3). If the sixth cluster was added, Norway and Switzerland were independent of the last cluster in $k = 5$ (shown in purple in Figure 9.3).

Table 9.5: Agglomeration Schedule and % Change in Heterogeneity for Welfare Systems (WPGMA)						
Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{SGP}	The rest of cases	0.3873615	2→1	0.0256494	7.0911092
20	{HKG, AUS, NZL}	{FIN, IRL, CAN,..., JPN}	0.3617121	3→2	0.0310444	9.3883981
19	{FIN, IRL,..., GBR}	{DNK, SWE, NOR,..., JPN}	0.3306677	4→3	0.0361583	12.2774689
18	{DNK, SWE}	{NOR, CHE, USA,..., JPN}	0.2945094	5→4	0.0133207	4.7372814
17	{NOR, CHE}	{USA, KOR, DEU,..., JPN}	0.2811887	6→5	0.0131235	4.8956373
...

Note: k denotes the number of clusters. The average change of all stages is 7.4128703%
 Previous stages are omitted, since the author is not interested in results with $k > 6$.

The cophenetic coefficient of WPGMA is 0.66, which was the second lowest among all linkage methods. Stage 21 merged Singapore with other cases, which means the two-cluster solution included Singapore itself as one group and all other cases in the second group. When $k = 3$, Hong, Australia, and New Zealand formed a third group. Based on Table 9.5, the

optimal number of clusters was 4. Figure 9.4 is the result based on WPGMA when k is 4. Similar to cluster analysis based on average linkage, Singapore was an outlier (shown in red in Figure 9.4). Hong Kong, Australia, and New Zealand form the first cluster (shown in green in Figure 9.4). Both the second and the third clusters consisted of three types of welfare regimes mentioned by Esping-Andersen (1990). Japan was classified into the last group. If k = 5, two social democratic cases (i.e., Denmark and Sweden) were separated. Following this, adding another cluster (i.e., k = 6) isolated Norway and Switzerland.



In general, although average linkage and WPGMA had similar results (and this might be attributed to the similarity of their algorithms, see above for relevant discussion), the hierarchical cluster analyses tended to generate different classifications if using different linkage methods. The classification of Japan was also varied.

9.2.2 Fuzzy Cluster Analysis

When the fuzzifier was set as 2, no stable cluster could be identified through the soft cluster analysis. When k was set as 3 (following Esping-Andersen's three worlds), every case had the same probability (33%) to be classified in any cluster. When k was set as 4 (if an East Asian welfare model existed in addition to the original three worlds), no stable cluster could

be established (i.e., each case had a 25% chance of being classified in any cluster). The same results were generated when k is set as different values. The fact that the memberships of all cases were close to $\frac{1}{k}$ is not satisfactory. A remedy for this confusing result was to reduce the value of the fuzzifier. However, although a number of scholars had invested efforts to identify the optimal fuzzifier, there was no specific rule for determining its exact value (see discussion in D'Urso, 2016, pp. 550-551). A possible approach to selecting the optimal fuzzifier was to compare the cluster validity index (e.g., Xie-Beni index) for different fuzzifiers (e.g., Wang et al., 2007). Due to the fact that the Xie-Beni index was not applicable to NEFRC (Giordania et al., 2020, p. 182), the SIL.F will be used to determine the fuzzifiers (see Section 9.1.4). Table 9.6 shows the SIL.F for different fuzzifiers varying from 1.1 to 2.0. The seeds and RS were used to control the cluster results to ensure its ability to be repeated. Both numbers were generated randomly. It seems that $m = 1.5$ was the optimal because the average levels of SIL.F scores were highest. However, the fuzzy cluster analysis was unable to produce interpretable results because some cases had the same level of membership for different clusters. For example, no welfare system was classified into the first cluster, and the membership for Japan remained 0.19 for five clusters out of six, which meant that no stable classification was produced for Japan. Similar situations appeared when $m = 1.4$. Hence, m was set as 1.3, which could generate meaningful classifications.

Table 9.6: SIL.F for Various Fuzzifiers for Fuzzy Cluster Analysis of Welfare Systems						
	k = 2	k = 3	k = 4	k = 5	k = 6	Average
m = 2.0	Memberships of all cases are close to 1/k					
m = 1.9						
m = 1.8						
m = 1.7	0.24	0.24	0.23	0.39	0.24	0.27
m = 1.6	0.25	0.26	0.36	0.48	0.48	0.36
m = 1.5	0.25	0.28	0.36	0.48	0.48	0.37
m = 1.4	0.24	0.33	0.28	0.25	0.22	0.26
m = 1.3	0.24	0.23	0.22	0.21	0.19	0.22
m = 1.2	0.24	0.20	0.21	0.19	0.17	0.20
m = 1.1	0.22	0.19	0.16	0.20	0.16	0.18
Note: RS = 5, seed = 846 (both are generated randomly)						

Table 9.7 is the result of fuzzy cluster analysis that generates two groups (the fuzzifier is set as 1.3). The SIL.F was the highest when k was 2 compared to other cluster solutions, although the silhouette scores were very close for different cluster solutions (cf. Table 9.6). Compared to hard or crisp cluster analysis, fuzzy cluster analysis also provided information about the goodness of fit (see Chapter 6 for relevant discussion). Therefore, both the classification and fitness should be interpreted for fuzzy cluster analysis. An important cut-off point to evaluate the fitness was 0.5. According to Giordania et al. (2020), an unclear assignment could be defined as a case with a maximum membership degree to a cluster lower than 0.5 (p. 135).

As Table 9.7 shows, in the two-cluster classification, Australia, Canada, Finland, France, Ireland, New Zealand, Sweden, the UK, and Hong Kong were grouped together, while the rest of the cases including Japan formed the other group. Both groups consisted of all types of welfare regimes. Almost all East Asian welfare systems except for Hong Kong were classified into one group. After examining the fitness of different welfare regimes, an interesting trend was that two social democratic welfare regimes (i.e., Sweden and Denmark) had a low level of membership in both clusters. Since the sum of membership was 1, it was impossible to have a membership degree to one cluster lower than 0.5 in a two-cluster

solution. Hence, a membership degree very close to 0.5 was a low level of fitness. By contrast, other social democratic welfare regimes, such as Finland and Norway, had a relatively higher level of fitness.

	Cluster 1	Cluster 2
AUS	0.05	0.95
AUT	0.92	0.08
BEL	0.88	0.12
CAN	0.31	0.69
DNK	0.56	0.44
FIN	0.12	0.88
FRA	0.30	0.70
DEU	0.91	0.09
IRL	0.19	0.81
ITA	0.66	0.34
NLD	0.92	0.08
NZL	0.05	0.95
NOR	0.78	0.22
SWE	0.48	0.52
CHE	0.83	0.17
GBR	0.15	0.85
USA	0.90	0.10
JPN	0.86	0.14
KOR	0.84	0.16
TWN	0.70	0.30
SGP	0.79	0.21
HKG	0.15	0.85

Note: $m = 1.3$, $k = 3$, $RS = 5$, seed = 846

9.3 Cluster Analysis for Healthcare Systems

The previous section has conducted cluster analysis for welfare systems in OECD 17 and East Asia. This section shifts to cluster analysis for healthcare systems. Following the same methods used for welfare indicators, both hierarchical cluster analysis and fuzzy cluster analysis are conducted.

9.3.1 Hierarchical Cluster Analysis

Figure 9.5 reports the results of the hierarchical cluster analysis based on single linkage ($k = 3$). The cophenetic coefficient for single linkage was 0.78. From Figure 9.5, two cluster solutions and three cluster solutions were visible. In the former cluster solution, the US was treated as an outlier, while in the latter, in addition to the outlier, three East Asian healthcare systems (i.e., Taiwan, South Korea, and Singapore) formed a group. If the number of k was increased to 4, Japan was separated and form a group with itself (i.e., become an outlier), but this separation was not desirable, as the difference between Japan and the rest of cases in the group was trivial. Similar situations were able to observe if the number of k was increased to 5. Norway became another outlier in a classification with six groups.

Figure 9.5: Hierarchical Cluster Analysis of Healthcare Systems Based on Single Linkage

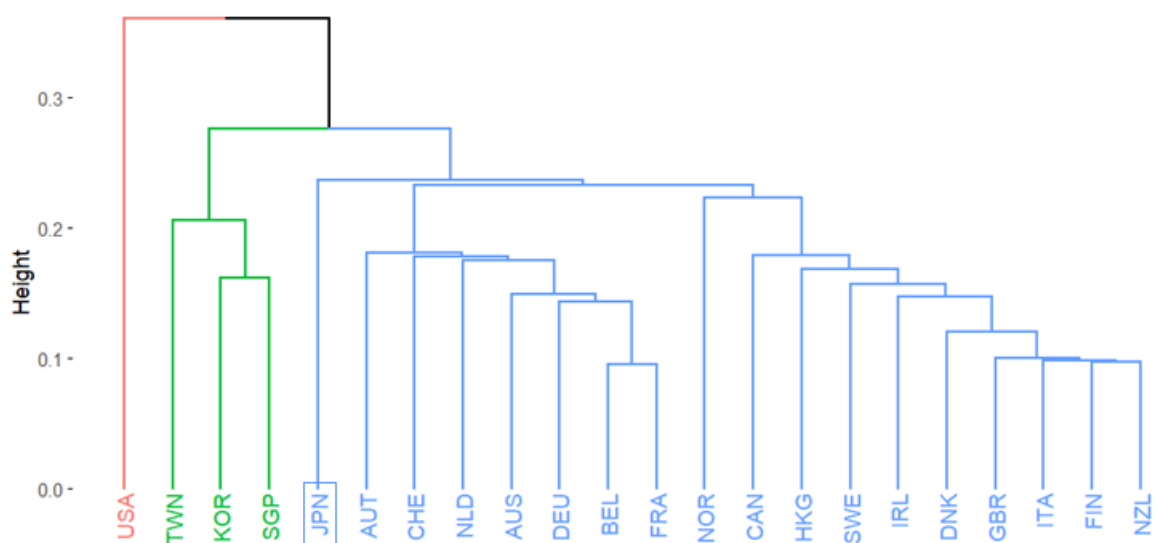


Table 9.8 includes information about the agglomeration schedule and percentage

change in heterogeneity for healthcare indicators based on single linkage. The percentage changes for the last two stages were the largest among all five stages. Stage 17 combining Norway with Canada, Hong Kong, Sweden, etc., also had a slightly higher change of percentage than the average change of all stages.

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{USA}	The rest of cases	0.3608609	2→1	0.0844261	30.5410534
20	{KOR, TWN, SGP}	{JPN, AUT, CHE, ..., NZL}	0.2764348	3→2	0.0401727	17.0034515
19	{JPN}	{AUT, CHE, NLD, ..., NZL}	0.2362621	4→3	0.0031573	1.3544422
18	{AUT, CHE, ..., FRA}	{NOR, CAN, HKG, ..., NZL}	0.2331048	5→4	0.0096863	4.3355189
17	{NOR}	{CAN, HKG, SWE, ..., NZL}	0.2234185	6→5	0.0177925	8.6528573
...

Note: k denotes the number of clusters. The average change of all stages is 7.1678565%.
Previous stages are omitted, since the author is not interested in results with k>6.

Figure 9.6 is the result of hierarchical cluster analysis based on complete linkage (k = 6). It seemed the complete linkage had generated a relatively satisfactory cluster solution, although its cophenetic coefficient as the lowest among the four linkage methods used in this thesis (0.71). However, judging only from Figure 9.6, there were a few possible cluster solutions for complete linkage (e.g., k = 2, k = 4, k = 6). The two-cluster solution seemed to be very apparent, but k = 3 was not an ideal classification, as the case of the US was relatively homogenous to its group. Nevertheless, when the number of k increased to 4, a relatively distinct pattern could be found: the first cluster with a large number of cases, three East Asian healthcare systems, a group with most Continental European healthcare systems, and the US as an outlier. When k = 5, Switzerland and Australia were separated from the group consisting of most Continental European healthcare systems, but this was not desirable. In contrast, k = 6 where a break down happens within the first cluster, was more likely to be a possible good cluster solution for complete linkage.

Figure 9.6: Hierarchical Cluster Analysis of Healthcare Systems Based on Complete Linkage

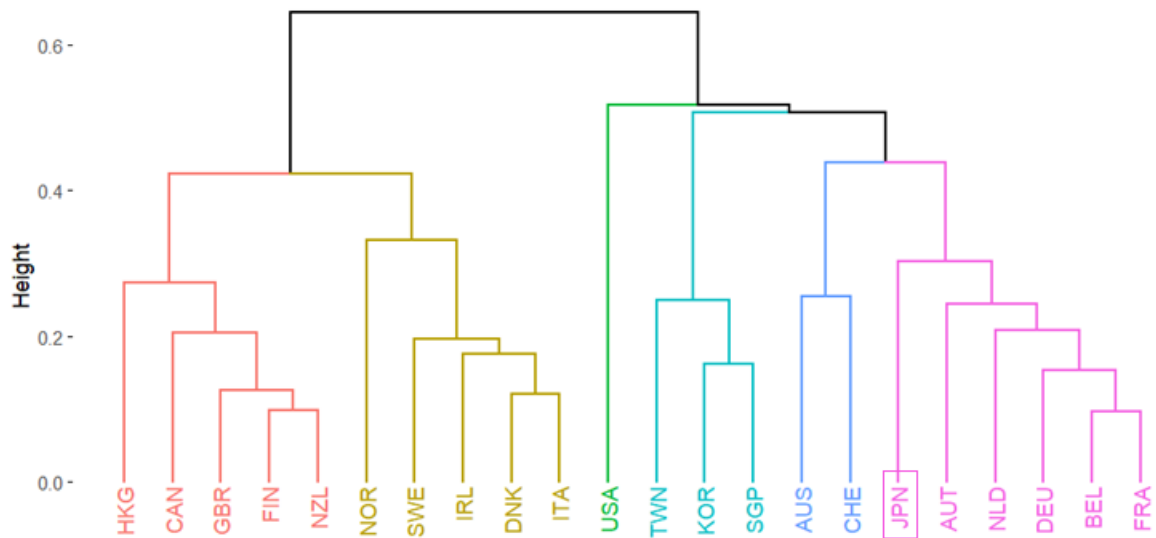


Table 9.9 contains the clustering process and percentage change in heterogeneity for complete linkage. Table 9.9 supports the observation above: stages 21, 19, and 17 had higher percentage changes in heterogeneity than the average. Among the last five stages of the agglomeration schedule, stage 17 had the largest number in the change in percentage, which seemed to indicate that $k = 6$ was the best cluster solution for complete linkage.

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{HKG, CAN,..., ITA}	{USA, TWN, KOR,..., FRA}	0.6454091	2→1	0.1279524	24.7271791
20	{USA}	{TWN, KOR, SGP,..., FRA}	0.5174566	3→2	0.0101234	1.9954083
19	{TWN, KOR, SGP}	{AUS, CHE, JPN,..., FRA}	0.5073333	4→3	0.0695535	15.8877777
18	{AUS, CHE}	{JPN, AUT, NLD,..., FRA}	0.4377798	5→4	0.0138612	3.2697812
17	{HKG, CAN,..., NZL}	{NOR, SWE, IRL,..., ITA}	0.4239186	6→5	0.0920149	27.7233860
...

Note: k denotes the number of clusters. The average change of all stages is 10.3410372%.
 Previous stages are omitted, since the author is not interested in results with $k > 6$.

Figure 9.7 is the result of hierarchical cluster analysis generated by average linkage ($k = 4$). The average linkage had the highest level of cophenetic coefficient among all linkage methods used (0.82), and it generated a relatively explicit cluster result. The US joined three East Asian healthcare systems and formed a group in $k = 2$. Unlike the previous two cluster results, $k = 2$ in the hierarchical cluster analysis based on average linkage seemed to be less desirable. Instead, $k = 3$ and $k = 4$ might be better cluster solutions for average linkage. As

the number of k increases, the American healthcare system became an outlier again in average linkage (k = 3). There was also a division within the first group (k = 4), but further separation leading to more outliers (i.e., Japan and Norway) was less visible from the graph.

Figure 9.7: Hierarchical Cluster Analysis of Healthcare Systems Based on Average Linkage

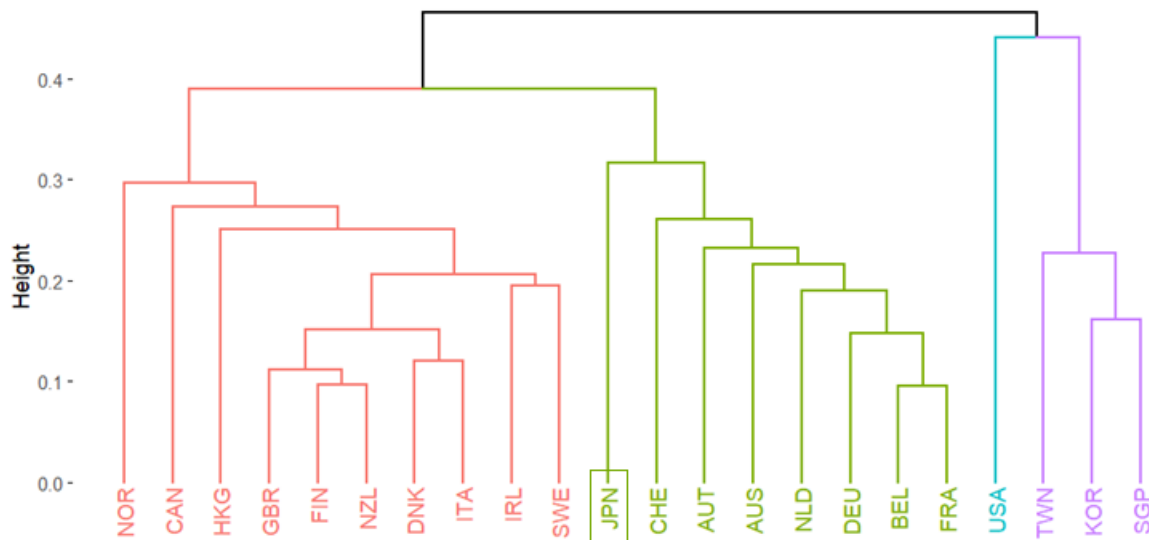


Table 9.10 reports the relevant information on the clustering schedule. The percentage change in heterogeneity also supported the observation above. Table 9.10 indicates that stage 19 merging four groups into three groups has the highest figure for heterogeneity. This was followed by stage 20. Stage 17 only had a slightly higher number than the average, while the last stage merging two clusters into one had the lowest number of percentage change among the last five stages in the agglomeration schedule.

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{NOR, CAN,..., FRA}	{USA, TWN, KOR, SGP}	0.4661114	2→1	0.0247019	5.5961388
20	{USA}	{TWN, KOR, SGP}	0.4414095	3→2	0.0509055	13.0358421
19	{NOR, CAN,..., SWE}	{JPN, CHE, AUT,..., FRA}	0.3905040	4→3	0.0741860	23.4529662
18	{JPN}	{CHE, AUT, AUS,..., FRA}	0.3163181	5→4	0.0194129	6.5384248
17	{NOR}	{CAN, HKG, GBR,..., SWE}	0.2969052	6→5	0.0241307	8.8464010
...

Note: k denotes the number of clusters. The average change of all stages is 8.4333407%.
Previous stages are omitted, since the author is not interested in results with k>6.

Figure 9.8 illustrates the hierarchical cluster analysis based on WPGMA (k = 5). The WPGMA method had the second lowest cophenetic coefficient (0.79), but it also generated a

relatively clear picture. Similar to single linkage, the US was treated as an outlier in WPGMA ($k = 2$). Nevertheless, it was relatively difficult to determine the cluster solution if only judging from the figure. The three-cluster solution split the groups into two with a similar number of cases. The increase of k to 4 led to a group with three East Asian cases. In $k = 5$, in addition to the East Asian group, Australia and Switzerland formed a group. A further increase in the number of k generated an outlier (i.e., Norway).

Figure 9.8: Hierarchical Cluster Analysis of Healthcare Systems Based on WPGMA

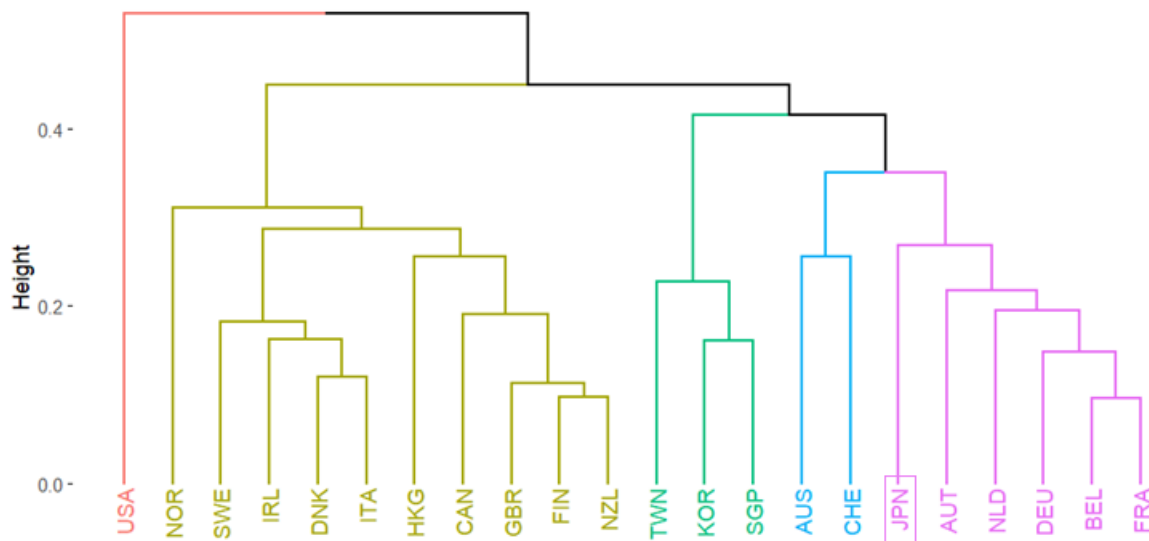


Table 9.11 includes the clustering process and percentage change in heterogeneity. Stage 18 generating four groups of healthcare systems had the largest change of percentage in heterogeneity, which was followed by Stage 19 and Stage 21. It seemed that $k = 2$, $k = 4$, and $k = 5$ could be possible cluster solutions for WPGMA, and $k = 5$ might be the best cluster solutions among them.

Stage	Cluster	Combined with cluster	Coefficient	k	Differences	Change of %
21	{USA}	{NOR, SWE, IRL, ..., FRA}	0.5295080	2→1	0.0810686	18.0779436
20	{NOR, SWE, ..., NZL}	{TWN, KOR, SGP, ..., FRA}	0.4484394	3→2	0.0338271	8.1587385
19	{TWN, KOR, SGP}	{AUS, CHE, JPN, ..., FRA}	0.4146123	4→3	0.0641798	18.3144665
18	{AUS, CHE}	{JPN, AUT, NLD, ..., FRA}	0.3504324	5→4	0.0642334	22.4436078
17	{NOR}	{SWE, IRL, DNK, ..., NZL}	0.2861990	6→5	0.0134246	4.9215060
...

Note: k denotes the number of clusters. The average change of all stages is 9.1196664%. Previous stages are omitted, since the author is not interested in results with $k > 6$.

9.3.2 Fuzzy Cluster Analysis

Following the same procedure for cash benefit indicators, the fuzzy cluster analysis was conducted via NEFRC. The main difference in fuzzy cluster analysis between cash benefits and healthcare systems is the fuzzifier. As revealed in previous chapters, the default fuzzifier ($m = 2$) did not generate a meaningful cluster for welfare state indicators. Although the fuzzy cluster analysis using the default fuzzifier does not generate a picture in which all membership scores were close to $\frac{1}{k}$, it still failed to provide interpretable results because most cases shared the same membership score for different clusters. Using the same process of determining the best fuzzifier for the NEFRC (see Table 9.12), 1.7 was chosen as the fuzzifier, since $m = 1.7$ had the highest SIL.F score. To be consistent with the welfare state indicators, the numbers of RS and seeds were the same as the those used in previous fuzzy cluster analysis for welfare states.

	k = 2	k = 3	k = 4	k = 5	k = 6	average
m = 2.0	Unable to generate interpretable classification					
m = 1.9						
m = 1.8						
m = 1.7	0.38	0.42	0.36	0.35	0.32	0.37
m = 1.6	0.38	0.41	0.32	0.31	0.18	0.32
m = 1.5	0.37	0.41	0.31	0.27	0.19	0.31
m = 1.4	0.36	0.40	0.29	0.22	0.24	0.30
m = 1.3	0.35	0.39	0.39	0.29	0.23	0.33
m = 1.2	0.33	0.37	0.37	0.28	0.20	0.31
m = 1.1	0.32	0.36	0.37	0.20	0.16	0.28

Note: RS = 5, seed = 846 (both are generated randomly)

Table 9.13 is the result of fuzzy cluster analysis for classifying the healthcare systems based on NEFRC. As shown in Table 64, $k = 3$ was the highest figure for the SIL.F score. Other cluster solutions had been omitted as their SIL.F score is lower. The fuzzy cluster result showed that the US and three East Asian cases (e.g., Taiwan, South Korea, and Singapore) were clustered together. The first group consisted of most Nordic and a few Anglo-Saxon

healthcare systems plus Hong Kong and Italy, while the second group included most Continental European healthcare systems with Japan and Australia.

	Cluster 1	Cluster 2	Cluster 3
AUS	0.23	0.52	0.24
AUT	0.15	0.52	0.33
BEL	0.08	0.78	0.14
CAN	0.38	0.30	0.33
DNK	0.79	0.12	0.09
FIN	0.85	0.08	0.07
FRA	0.11	0.74	0.16
DEU	0.13	0.67	0.20
IRL	0.57	0.26	0.17
ITA	0.82	0.10	0.09
NLD	0.25	0.56	0.20
NZL	0.80	0.11	0.09
NOR	0.50	0.24	0.27
SWE	0.60	0.20	0.20
CHE	0.17	0.56	0.27
GBR	0.66	0.17	0.17
USA	0.22	0.32	0.46
JPN	0.18	0.42	0.40
KOR	0.11	0.18	0.71
TWN	0.13	0.20	0.67
SGP	0.13	0.19	0.68
HKG	0.57	0.19	0.24

Note: $m = 1.7$, $k = 3$, $RS = 5$, seed = 846

Chapter 10 The Overall Assessment of the Classification of Japan

Chapters 8 and 9 demonstrate the process of data construction, cluster analysis (including both hierarchical and fuzzy cluster analysis), and the results generated by different methods of cluster analysis. This chapter aims to provide an overall assessment of all classification results based on the author's discretion. Section 10.1 briefly demonstrates the author's principles for interpretation. Section 10.2 focuses on the interpretation of welfare systems classification based on the results reported in Section 9.2, while Section 10.3 shifts its focus to healthcare systems based on the cluster results in Section 9.3. Then, Section 10.4 of this chapter compares the classification of welfare systems and healthcare systems, which aims to answer the research questions regarding the consistency between different policy areas within the welfare state.

10.1 General Principles for Interpretation

The process of interpreting cluster results involved both authors' judgments based on external information (e.g., theories or existing typologies) and empirical evidence generated via various validity measurements. As Hair and colleagues (2019) wrote:

In assessing either correspondence or practical significance, the researcher compares the derived clusters to a preconceived typology. This more subjective judgment by the researcher combines with the empirical judgment of the stopping rules to determine the final cluster solution to represent the data structure of the sample (p. 228).

As the major aim of this thesis is to provide an up-to-date classification for Japan with other OECD and East Asian welfare systems and healthcare systems, the interpretation process mainly relies on internal validity. Specifically, for hierarchical cluster analysis, internal validity measurements include the percentage change in heterogeneity, SIL, and

cophenetic coefficient, whilst SIL.F score is used for fuzzy cluster analysis (see Section 9.1 for relevant algorithms). Among the literature employing cluster analysis to classify welfare states or healthcare systems (cf. Table 9.1), approaches to interpretation could be roughly divided into two types. Scholars who adopted the first approach typically selected one clustering method or one cluster result that was the most prevalent or likely to generate the most interpretable results (e.g., Moolla et al., 2021). Although it was a common practice for scholars to use external knowledge (i.e., existing theories) in the process of interpretation, deciding which methods or results were the most interpretable or desirable remains a relatively vague and subjective process. In the second approach, analysts usually utilised multiple clustering methods and triangulated different cluster results to enhance internal validity (e.g., Reibling et al., 2019; Wendt, 2009, 2014; Yorük et al., 2022). Ideally, different cluster methods yielded relatively similar results, which indicated that the classification is likely to have a higher level of robustness. However, unstable cases (i.e., their classifications vary from the methods used) often appeared in practice. These cases received less attention from researchers, as unstable cases were relatively rare and, more importantly, a few unstable cases did not significantly impact the overall classification of a large number of cases.

It should be emphasised that, unlike most existing studies, the aim of this thesis is to use cluster analysis to classify one case (i.e., Japan) rather than a broad set of cases (e.g., OECD 18). This key difference in research aims inevitably leads to different strategies for interpretation. Given that both hierarchical cluster analysis and fuzzy cluster analysis were used in this thesis (see Chapter 7 for more details), the overall tactics for interpreting the cluster results were following: (a) hierarchical cluster analysis identified the welfare systems and healthcare systems that were similar to Japan; (b) fuzzy cluster analysis (NEFRC) revealed the membership that the Japanese welfare systems and healthcare systems of specific groups; (c) the results of both methods were triangulated to address the research

questions (i.e., which categories Japan might fit and how well Japan fit that category). In steps (a) and (b), the interpretation mainly relies on internal validity measurements mentioned earlier, while for step (c), external knowledge and the author's discretion also plays a role in triangulating the results. This is because there might be a tension between internal validity and the meaningfulness of the classifications. A classification with the highest levels of internal validity (e.g., highest levels of cophenetic coefficient or percentage change in heterogeneity) might be meaningless. For instance, a six-cluster solution with five outliers and the remaining cases grouped together is not desirable for classification purposes.

Before interpreting the results, it was necessary to elaborate the roles that different cluster analysis methods played in the process of interpretation in more detail. In terms of hierarchical cluster analysis, two issues needed to be addressed in the interpretation for step (a): the selection of linkage methods and the choice of the best cluster solution. In most previous studies using cluster analyses, only one or two linkage methods were selected to be interpreted (see Table 9.1). The selection of linkage methods was mainly based on conventional wisdom and authors' subjective judgment. In order to avoid the potential bias caused by the subjective selection, this thesis includes results from all four linkage methods in the interpretation. This is because some linkage methods generated fewer desirable outcomes (e.g., a large number of outliers) despite higher levels of cophenetic coefficient.

Regarding the selection of the number of clusters, on the one hand, based on existing literature, $k = 3$ and $k = 4$ were two ideal options (e.g., Esping-Andersen's three worlds plus an East Asian welfare or healthcare model, cf. Chapters 2-4). On the other hand, the percentage change in heterogeneity did not always support the three-cluster or four-cluster solutions of hierarchical cluster analyses (see Sections 9.2 & 9.3 for more information). This thesis gives priority to the internal validity measure over external knowledge (i.e., previous literature). The optimal number of clusters could vary depending on the selection of

indicators, datasets, and linkage methods. Examining a broader range of cluster solutions also served to test whether the commonly proposed three- or four-cluster structures were indeed the most appropriate for classifying welfare and healthcare regimes (see Chapters 2-4).

In short, considering these issues, the process of interpretation in this thesis can be summarised below: at first, all cluster solutions generated via the four linkage methods were retained for interpreting the hierarchical cluster analysis. Within the results generated via a certain linkage method, only those classifications with a percentage change in heterogeneity greater than the average were selected to interpret. Combining all these cluster solutions with high percentage changes from different linkage methods led to a number of different classifications (see Chapter 9). Nevertheless, these classifications could provide clues for the RQ1 and RQ2. This could be achieved by identifying which welfare systems and healthcare systems were more frequently classified with Japan in the same cluster. It should be noted that these results from hierarchical cluster analysis were not capable of revealing how well Japan fit a particular group (i.e., the goodness of fit). Therefore, in order to fully answer RQ1 and RQ2, it was necessary to incorporate the results generated by the fuzzy cluster analysis. The interpretation of fuzzy cluster analysis mainly used the cluster results with the highest SIL.F, but other results were considered, especially when the SIL.F for different cluster solutions were very close.

10.2 The Overall Assessment of Classifying the Japanese Welfare State

This section interprets the result of cluster analysis for the income maintenance policy generated in Section 9.2. As mentioned above, the interpretation follows three steps: hierarchical cluster analysis for the most similar cases (Section 10.2.1); fuzzy cluster analysis for the membership (Section 10.2.2); and triangulation to reach the final result (Section 10.2.3). The last section will address the implications of the cluster results (Section 10.2.4).

10.2.1 Interpretation of Hierarchical Cluster Analysis of Welfare Systems

Table 10.1: All Results of Hierarchical Cluster Analysis for Welfare Systems						
Clustering methods	Cluster solution	Cluster	Number of cases	Cluster results	JPN	Author's discretion
Hierarchical (Single) c = 0.70	k = 2	k1	19	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN, SGP	k1	Unsatisfactory except for k = 2 due to the extremely low % changes in heterogeneity for other cluster solutions (see Figure 9.1 and Table 9.2 above)
		k2	3	AUS, NZL, HKG		
	k = 3	k1	18	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, KOR, TWN, SGP	k2 outlier	
		k2	1	JPN		
		k3	3	AUS, NZL, HKG		
	k = 4	k1	17	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN	k2 outlier	
		k2	1	JPN		
		k3	1	SGP		
		k4	3	AUS, NZL, HKG		
	k = 5	k1	17	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, GBR, USA, JPN, KOR, TWN	k2 outlier	
		k2	1	JPN		
		k3	1	SGP		
		k4	1	CHE		
		k5	3	AUS, NZL, HKG		
	k = 6	k1	16	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, USA, JPN, KOR, TWN	k2 outlier	
		k2	1	JPN		
		k3	1	SGP		
		k4	1	CHE		
k5		1	GBR			
k6		3	AUS, NZL, HKG			

Hierarchical (Complete) c = 0.64	k = 2	k1	14	DNK, SWE, SGP, DEU, AUT, BEL, USA, KOR, ITA, TWN, NOR, CHE, NLD, JPN	k1	Interpretable and meaningful to some extent, although the cophenetic coefficient is the lowest among the four linkage methods k = 2 and k = 5 are two potential cluster results for further analysis (see Figure 9.2 and Table 9.3 above)
		k2	8	HKG, AUS, NZL, FRA, FIN, IRL, CAN, GBR		
	k = 3	k1	14	DNK, SWE, SGP, DEU, AUT, BEL, USA, KOR, ITA, TWN, NOR, CHE, NLD, JPN	k1	
		k2	5	FRA, FIN, IRL, CAN, GBR		
		k3	3	AUS, NZL, HKG		
	k = 4	k1	12	SGP, DEU, AUT, BEL, USA, KOR, ITA, TWN, NOR, CHE, NLD, JPN	k1	
		k2	2	DNK, SWE		
		k3	5	FRA, FIN, IRL, CAN, GBR		
		k4	3	AUS, NZL, HKG		
	k = 5	k1	8	SGP, DEU, AUT, BEL, USA, KOR, ITA, TWN	k2	
		k2	4	NOR, CHE, NLD, JPN		
		k3	2	DNK, SWE		
		k4	5	FRA, FIN, IRL, CAN, GBR		
		k5	3	AUS, NZL, HKG		
	k = 6	k1	8	SGP, DEU, AUT, BEL, USA, KOR, ITA, TWN	k3	
		k2	2	NOR, CHE		
		k3	2	NLD, JPN		
		k4	5	DNK, SWE		
k5		3	FRA, FIN, IRL, CAN, GBR			
k6		8	AUS, NZL, HKG			

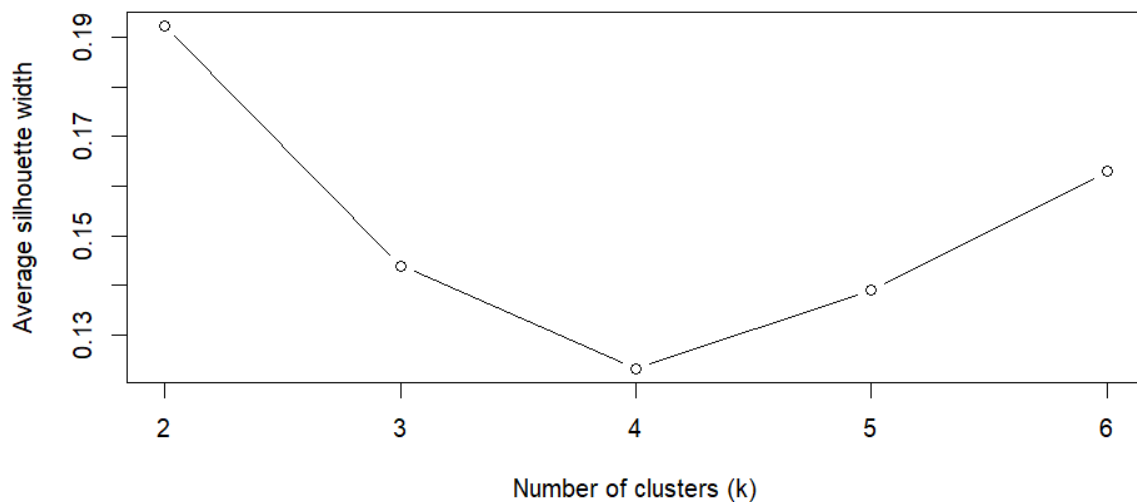
Hierarchical (Average) c = 0.72	k = 2	k1	19	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN, SGP	k1	k = 2 and k = 3 have higher % changes in heterogeneity than the average k = 5 will be a potential cluster result for further analysis, but the % change in heterogeneity is lower than the average (see Figure 9.3 and Table 9.4 above)
		k2	3	AUS, NZL, HKG		
	k = 3	k1	18	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN	k1	
		k2	1	SGP		
		k3	3	AUS, NZL, HKG		
	k = 4	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	11	DNK, SWE, NOR, CHE, JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	1	SGP		
		k4	3	AUS, NZL, HKG		
	k = 5	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	9	NOR, CHE, JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	2	DNK, SWE		
		k4	1	SGP		
		k5	3	AUS, NZL, HKG		
	k = 6	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	7	JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	2	NOR, CHE		
		k4	2	DNK, SWE		
k5		1	SGP			
k6		3	AUS, NZL, HKG			

Hierarchical (Average) c = 0.72	k = 2	k1	19	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN, SGP	k1	k = 2 and k = 3 have higher % changes in heterogeneity than the average k = 5 will be a potential cluster result for further analysis, but the % change in heterogeneity is lower than the average (see Figure 9.3 and Table 9.4 above)
		k2	3	AUS, NZL, HKG		
	k = 3	k1	18	AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, SWE, CHE, GBR, USA, JPN, KOR, TWN	k1	
		k2	1	SGP		
		k3	3	AUS, NZL, HKG		
	k = 4	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	11	DNK, SWE, NOR, CHE, JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	1	SGP		
		k4	3	AUS, NZL, HKG		
	k = 5	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	9	NOR, CHE, JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	2	DNK, SWE		
		k4	1	SGP		
		k5	3	AUS, NZL, HKG		
	k = 6	k1	7	GBR, FRA, FIN, IRL, CAN, ITA, TWN	k2	
		k2	7	JPN, USA, KOR, NLD, DEU, AUT, BEL		
		k3	2	NOR, CHE		
		k4	2	DNK, SWE		
k5		1	SGP			
k6		3	AUS, NZL, HKG			

Table 10.1 summarises the results of all cluster analyses and the author's assessment of these classifications, with the ideal cluster solutions (i.e., the percentage change of

heterogeneity higher than the average) highlighted in yellow. As mentioned in Section 9.1.5, one cluster solution and classifications with more than six groups are not in the interest of this thesis. Since most widely used stopping rules for hierarchical clustering were designed for numeric data (cf. Halkidi et al., 2016), and few studies have applied these stopping rules to mixed data. The average SIL could provide hints for determining the best number of clusters (see Section 9.1.4). Figure 10.1 below shows the average SIL of different numbers of clusters for welfare state indicators. This figure indicates that the two-cluster solution is the best cluster strategy, followed by the six-cluster solution as the second-best choice of the number of clusters. Nonetheless, the very low level of the average SIL (less than 0.20) implied low distinctiveness between clusters.

Figure 10.1: Average Silhouette Width of Different k for Welfare Systems



In addition to the SIL, the percentage change of heterogeneity is another internal validity measurement. Similarly, based on the percentage change of heterogeneity, $k = 2$ appeared to be the best cluster solution since it was a stopping point for three linkage methods out of four. The third-cluster solution was supported by two linkage methods, while $k = 4$ and $k = 5$ were possible cluster solutions in only one linkage method. Furthermore, the two-cluster solution had the highest percentage change of heterogeneity among the three

linkage methods.

Hierarchical cluster analyses based on different linkage methods generated different results. After examining the results of hierarchical cluster analyses, seven results were retained for further analysis (as highlighted in Table 10.1). Regarding single linkage, when $k = 2$, only Hong Kong, Australia, and New Zealand were classified in a group, while the rest of the cases were grouped together. Adding the number of clusters was not supported by validation measurements, as the process of merging clusters only led to very minor increases in the percentage change of heterogeneity, except for the last step (see Table 9.2).

Furthermore, adding the number of clusters increased the number of outliers, which was unsatisfactory from the perspective of interpretation. Therefore, the result of single linkage was discarded except for $k = 2$. In terms of complete linkage, although it had the lowest levels of cophenetic coefficient among the four linkage methods, meaningful interpretation could be generated to some extent. Based on the percentage change of heterogeneity, $k = 2$ and $k = 5$ were two potential cluster solutions (see Table 9.3). Both cluster solutions generated a relatively equal distribution for the cases. For average linkage, $k = 2$ and $k = 3$ had higher percentage changes in heterogeneity. The third-best result was $k = 5$, but the percentage change in heterogeneity was lower than the average. Therefore, the five-cluster solution of average linkage was not used for further analysis. WPGMA generated similar results to average linkage, and the best result was $k = 4$, which was followed by $k = 3$ as the second-best cluster solution.

The hierarchical cluster analysis for income maintenance indicators failed to reach a consensus on the classification. Unlike previous literature using cluster analysis, there were relatively big differences between the classifications generated via different linkage methods in this analysis. The only distinct pattern was that Australia, New Zealand, and Hong Kong tended to be classified into one group (6 out of 7). Singapore was sometimes separated as an

outlier, but this only happened in the average linkage and WPGMA.

10.2.2 Interpretation of Fuzzy Cluster Analysis of Welfare Systems

Table 10.2 is the result of fuzzy cluster analysis using NEFRC, as shown in Section 9.2.2. Corresponding to the best number of clusters in hierarchical cluster analysis, the SIL.F suggested that the best cluster solution for fuzzy cluster analysis was $k = 2$ (0.24). However, similar to hierarchical cluster analysis, the low level of SIL.F (i.e., all cluster solutions had SIL.F lower than 0.25) indicated a blurred picture between cases. In this classification, Austria, Belgium, Denmark, Germany, Italy, the Netherlands, Norway, Switzerland, the United States, Japan, South Korea, Taiwan, and Singapore were classified together, while other cases formed another group. However, both groups in this classification contained three types of welfare regimes proposed by Esping-Andersen. Although $k = 2$ seems to be the best number of clusters for fuzzy cluster analysis, the two-cluster solution only had a slightly higher SIL.F than other cluster solutions. Because the differences between the different cluster solutions for NEFRC remain very minor, other cluster solutions were analysed.

In $k = 3$, Australia, New Zealand, and Hong Kong formed a cluster. Other cases were split into two clusters. The first cluster included Austria, Belgium, Germany, the Netherlands, Norway, Switzerland, the USA, Japan, South Korea, and Singapore. The rest formed the third cluster. Again, welfare regimes were mixed in both clusters. When $k = 4$, in addition to the group of two Oceanian countries plus Hong Kong, some Nordic countries (i.e., Denmark, Norway, Sweden) formed a group with the Netherlands and Switzerland. Conservative welfare states (i.e., Austria, Belgium, Germany) were grouped with the liberal American welfare states and other East Asian welfare systems. The fourth group consisted of liberal British and some other European Continental countries. When k increased to 5, social democratic welfare states (Denmark, Norway, and Sweden) formed a group, and conservative welfare states (Austria, Belgium, and Germany) tended to be clustered together. Two small

welfare states (the United States and South Korea) plus Singapore were placed into one group. Except for the group of Hong Kong, Australia, and New Zealand, which appeared in previous classifications, no distinct pattern could be found among the rest of the cases. A similar result could be seen in $k = 6$.

Table 10.2: All Results of Fuzzy Cluster Analysis for Welfare Systems

	Cluster solution	Cluster	Number of cases	Cluster results	JPN	Author's discretion
Fuzzy (NEFRC with $m = 1.3$, $RS = 5$, seed = 846)	$k = 2$ (SIL.F = 0.24)	k1	13	AUT, BEL, DNK, DEU, ITA, NLD, NOR, CHE, USA, JPN, KOR, TWN, SGP	k1 (0.86)	Different linkage methods of HCA suggest different cluster solutions, and all results of NEFRC have similar levels of SIL.F. Therefore, all cluster solutions will be reviewed.
		k2	9	AUS, CAN, FIN, FRA, IRL, NZL, SWE, GBR, HKG		
	$k = 3$ (SIL.F = 0.23)	k1	10	AUT, BEL, DEU, NLD, NOR, CHE, USA, JPN, KOR, SGP	k1 (0.70)	
		k2	9	CAN, DNK, FIN, FRA, IRL, ITA, SWE, GBR?, TWN		
		k3	3	AUS, NZL, HKG		
	$k = 4$ (SIL.F = 0.22)	k1	7	AUT, BEL, DEU, USA, JPN?, KOR, SGP	? k1 (0.47) k3 (0.34)	
		k2	7	CAN, FIN, FRA, IRL, ITA, GBR, TWN		
		k3	5	DNK, NLD, NOR, SWE, CHE		
		k4	3	AUS, NZL, HKG		
	$k = 5$ (SIL.F = 0.21)	k1	6	AUT, BEL, DEU, NLD, CHE, JPN	k1 (0.61)	
		k2	7	CAN, FIN, FRA, IRL, ITA?, GBR, TWN?		
		k3	3	DNK, NOR, SWE		
		k4	3	USA, KOR, SGP		
		k5	3	AUS, NZL, HKG		
	$k = 6$ (SIL.F = 0.19)	k1	6	AUT, BEL, DEU, NLD, CHE, JPN	k1 (0.54)	
		k2	4	FIN?, FRA, IRL, GBR		
		k3	3	CAN, ITA, TWN		
		k4	3	USA, KOR, SGP		
k5		3	DNK, NOR, SWE			
k6		3	AUS, NZL, HKG			

10.2.3 The Classification of the Japanese Welfare State

The main aim of this thesis is to examine the classification of the Japanese welfare state. Seven cluster results generated by hierarchical cluster analyses revealed that Japan was most similar to the Netherlands and Switzerland, as these two welfare states were always classified with Japan in hierarchical cluster analysis (7 out of 7). The Netherlands was regarded as a social democratic welfare state by Esping-Andersen (1990), but some scholars addressed the complexity of the Dutch welfare state (e.g., Goodin, 2000). The Swiss welfare regime was liberal, based on Esping-Andersen (1990). A mixed picture followed these two cases: Germany, Austria, Belgium, Norway, Sweden, Denmark, the United States, and South Korea were classified with Japan in 6 hierarchical cluster analyses out of 7. All three types of

welfare regimes proposed by Esping-Andersen (1990) were included here, which resulted in an unclear classification for the Japanese welfare state. Italy, the only southern European welfare state included in Esping-Andersen (1990), and Taiwan, one of the members in the East Asian welfare model, were classified with Japan in 5 out of 7 hierarchical cluster analyses. Other welfare systems were classified with Japan less frequently, especially Australia, New Zealand, and Hong Kong, which have not been classified with Japan in all hierarchical cluster analyses (see Table 10.3). From what has been mentioned, it seemed that hierarchical cluster analysis generated a chaotic classification, and therefore, it was unable to provide a clear-cut classification for the Japanese welfare state.

	out of 12 CA results	Similarity	out of 7 HCA results	out of 5 FCA results	Welfare regime*
NLD	11	Very High	7	4	Social democratic
CHE	11	Very High	7	4	Liberal
AUT	11	Very High	6	5	Conservative
BEL	11	Very High	6	5	Conservative
DEU	11	Very High	6	5	Conservative
USA	9	High	6	3	Liberal
KOR	9	High	6	3	East Asian
NOR	8	Relatively High	6	2	Social democratic
DNK	7	Relatively High	6	1	Social democratic
SWE	6	Relatively High	6	0	Social democratic
ITA	6	Moderate	5	1	Conservative
TWN	6	Moderate	5	1	East Asian
SGP	6	Moderate	3	3	East Asian
CAN	4	Low	4	0	Liberal
FIN	4	Low	4	0	Conservative
FRA	4	Low	4	0	Conservative
IRL	4	Low	4	0	Liberal
GBR	4	Low	4	0	Liberal
AUS	0	Very Low	0	0	Liberal
NZL	0	Very Low	0	0	Liberal
HKG	0	Very Low	0	0	East Asian

Note: CA = cluster analysis, HCA = hierarchical cluster analysis, FCA = fuzzy cluster analysis
 * The classification of 18 OECD countries is based on Esping-Andersen (1990).

As Table 10.2 shows, the fuzzy cluster analysis illustrated similar results. When fewer

groups ($k = 2$ and $k = 3$) have been generated, Japan also tended to be classified with a mix of all types of welfare states (including Austria, Belgium, Germany, the Netherlands, Norway, Switzerland, the United States, South Korea, and Singapore), and Japan had relatively high levels of membership degree within this group. When $k = 4$, Japan could be classified within the conservative plus small welfare states group. It should be noted that Japan became an unclear assignment, with the possibility of being classified with some social democratic welfare states. Japan was classified with some conservative welfare states, plus the Netherlands and Switzerland, if the number of groups was further increased in the fuzzy cluster analysis (i.e., $k = 5$ and $k = 6$). The membership degree of Japan was higher than 0.50 in both cluster results. In sum, fuzzy cluster analysis did not provide a clear classification for the Japanese welfare state. Nonetheless, compared to hierarchical cluster analysis, the only visible pattern might be that fuzzy cluster analysis with 5 or 6 clusters tended to classify Japan with other conservative welfare states.

Table 10.3 also synthesised the results of hierarchical cluster analysis and fuzzy cluster analysis. Among 12 cluster results, Japan was classified with Austria, Belgium, Germany, the Netherlands, and Switzerland in 11 classifications. Austria, Belgium, and Germany were regarded as typical conservative welfare states, while the Netherlands and Switzerland were classified as social democratic and liberal welfare states by Esping-Andersen (1990), respectively. However, these two cases were perceived as hybrid or problematic cases by some scholars (see Art & Gelissen, 2002, p. 151; Goodin, 2000). Two small welfare states (i.e., the US and South Korea) followed with being placed with Japan in the same cluster in 9 classifications. Social democratic welfare states (Norway, Denmark, and Sweden) also showed relatively high levels of similarity with Japan, while other cases were classified with Japan less frequently among the 12 classifications generated in the analysis in this thesis.

Based on these results and the author's discretion, it seemed that Japan shared similarities with conservative welfare states. However, the complex pictures generated by cluster analysis prevent concluding that Japan was a conservative welfare state. In addition to typical conservative welfare states (e.g., Germany), Japan was similar to the Netherlands and Switzerland. This undermined the robustness of classifying Japan with other conservative welfare states. More importantly, even though we ignored the controversy of the Dutch and Swiss welfare states and considered them conservative welfare states, different cluster analyses failed to reach consensus on a solid classification. Although Japan was classified with other conservative welfare states in terms of frequency, Japan was often clustered with different types of welfare systems in most classifications.

As Chapter 2 has demonstrated, most authors classified Japan as a hybrid between liberal and conservative welfare regimes (H1-2 and H1-3). However, the results in this thesis showed that Japan also shared similarities with social democratic welfare regimes to some extent (H1-1). On the one hand, following Esping-Andersen (1990), the Netherlands was regarded as a social democratic welfare state. On the other hand, Japan was sometimes placed in the same groups as some social democratic welfare states. Therefore, a more cautious conclusion will be that the classifications for the Japanese welfare state in this thesis might fall into the "hybrid" or "unclear" as listed by Powell, Kim, and Kim (2020), but with a tendency to be classified with other conservative welfare states (H1-2). It should be emphasised that this tendency was undermined by the controversial Dutch and Swiss cases. As reviewed in Chapter 2, Esping-Andersen (1990) classified Japan as a conservative welfare regime based on decommodification scores, but a liberal welfare regime based on stratification. It seemed that the cluster results based on the latest data provided weak support for his classification of Japan.

Regarding the East Asian welfare model literature (cf. Chapter 3), it seemed that

Japan did not share enough similarities to be classified with other East Asian welfare systems (H1-4). Although Japan tended to be classified with South Korea (9 out of 12 cluster analysis results), it was less similar to other East Asian cases: Japan was in the same group with Taiwan and Singapore in 6 out of 12 classifications. In addition, no cluster analyses classified Hong Kong with Japan in the same group. The results suggested that it was likely that Japan was more similar to European welfare states than its East Asian counterparts. Japan seemed to share some similarities with South Korea, but there was insufficient support for viewing Japan as a member of the East Asian welfare model in the results. Another important finding of cluster results was that income maintenance in Japan was not as unique as some commentators claimed (H1-5), as Japan was rarely classified as an outlier. In short, the cluster analysis did not support Japan as a member of the East Asian welfare model (H1-4), and no uniqueness of the Japanese welfare state could be identified in these results (H1-5). However, there was less certainty for other hypotheses. The hierarchical cluster analysis failed to generate stable classifications and seemed to classify Japan as a hybrid of three types of welfare regimes (H1-1, H1-2, H1-3). The results of fuzzy cluster analysis were similar, but the classifications with the larger number of k tended to group Japan with other conservative welfare regimes with weak membership (H1-2). Following the discussion above, the cluster analysis in this thesis weakly supported H1-2 without disproving H1-1 and H1-3.

One of the reasons for this confusing and unclear classification of the Japanese welfare state might be that Esping-Andersen's classification was no longer valid, as it was in the 1980s. The unclear classification of the Japanese welfare system was likely to be attributed to the low level of average SIL (see Section 9.1), which implied that welfare regimes were not as distinct as the literature predicted. Combining the results of hierarchical cluster analyses and fuzzy cluster analyses indicated that no stable classification could be established (see Section 10.2.4 for detailed discussion).

It should be noted that it is less meaningful to compare Japan with the cluster centre due to the absence of a stable classification. This also increased the difficulty of comparing Japan with other cases within the same cluster or in different clusters. Alternatively, the features demonstrated by the data for Japan in the dimensions mentioned in the unified framework (see Chapter 6) are briefly examined here. For financial input, Japan spent 9.7% of its GDP in public income maintenance programmes, which was slightly over the average of all cases (9.57%). The figure for Japan was higher than other East Asian welfare systems, but no significant difference between Japan and other OECD welfare states. In terms of generosity, Japan had the longest pension benefit duration because of its highest life expectancy, but its pension replacement rate was lower than other OECD countries (except Australia and South Korea). Although Japan required a long contribution period to be eligible for unemployment benefits, which was similar to the Netherlands, other indicators of generosity did not show distinct features when compared to other cases. Japan did not have non-contributory means-tested, non-contributory universal, and occupational pension schemes. No legal coverage of non-contributory programmes shared with other conservative welfare states (e.g., Austria and Belgium). The mandatory pension schemes in Japan were contributory flat-rate and earnings-related. Japan was closer to East Asian economies and liberal welfare regimes with relatively high levels of the Gini coefficient and poverty rate.

10.2.4 Implications of Classifications of Welfare Systems

There are several important implications for the results shown by the cluster analysis. Firstly, the results showed that the distinction between different types of welfare systems was blurred based on the latest data. If the differences between various welfare regimes were clear, the cluster results should be distinctive, and cluster analyses based on different clustering methods and algorithms should be able to generate relatively homogeneous results. However, the results of multiple cluster analyses showed that there was no distinct pattern with the

exception of the group consisting of New Zealand, Australia, and Hong Kong. Secondly, these cluster results did not support Esping-Andersen's (1990, 1999) welfare regime typology. On the one hand, from the perspective of cluster validation, $k = 3$ was not the best cluster solution among all cluster analyses. As mentioned above, $k = 2$ appeared to be supported by both cluster analyses. In addition to the average SIL, 3 out of 4 linkage methods in hierarchical cluster analysis indicated a potential stop at $k = 2$. The two-cluster solution was also supported by fuzzy cluster analysis with the highest SIL.F. On the other hand, in terms of cluster results, liberal, conservative, and social democratic welfare regimes were mixed in any cluster but not classified into distinct groups in all valid cluster results. Even the seemingly closest classifications (e.g., $k = 5$ and $k = 6$ in NEFRC) include multiple types of welfare states in one cluster. For instance, France was grouped with Ireland and the UK in $k = 6$ in NEFRC. Switzerland was mixed within the group of conservative welfare regimes.

Thirdly, regarding the East Asian welfare regime literature (cf. Chapter 3), cluster results did not favour the East Asian welfare model. In all classifications, with the exception of $k = 2$ in complete linkage, five East Asian welfare systems were classified into different groups. Singapore was sometimes treated as an outlier (e.g., $k = 4$ in WPGMA), while Hong Kong was closely combined with two Oceania welfare states. South Korea tended to be classified with the US, but the classification of Japan was more diverse (see above).

In short, welfare systems in advanced economies in OECD countries and East Asia did not differ significantly based on institutional features (i.e., financial input, generosity, integration, and the welfare mix) and their outcome or performance. A possible explanation was the convergence thesis of welfare states (see e.g., Schmitt & Starke, 2011). Regarding the classification of East Asian welfare systems, the results in this thesis provide little support for the East Asian welfare regime, as the income maintenance policy in East Asia was largely similar to other OECD countries.

10.3 The Overall Assessment of Classifying the Japanese Healthcare System

This session shifts the focus to interpreting cluster results for healthcare systems and reviewing the fitness of the Japanese healthcare system in certain categories mentioned in the existing literature. The results of hierarchical cluster analysis will be analysed in Section 10.3.1. Then, fuzzy cluster analysis for the membership of Japan will be examined in Section 10.3.2. An overall interpretation of the Japanese healthcare system will be provided in Section 10.3.3. The implications will be briefly addressed in Section 10.3.4.

10.3.1 Interpretation of Hierarchical Cluster Analysis of Healthcare Systems

Clustering methods	Cluster solution	Cluster	Number of cases	Cluster results	JPN	Author's discretion
Hierarchical (Single) c = 0.78	k = 2	k1	21	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, JPN, KOR, TWN, SGP, HKG	k1	Relatively unsatisfactory as the classification is not balanced k = 2, k = 3, k = 6 have higher % change in heterogeneity than the average The best cluster solution is k = 3, as k = 2 is not meaningful, and k = 6 generates too many outliers (see Figure 9.4 and Table 9.8 above)
		k2	1	USA		
	k = 3	k1	18	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, JPN, HKG	k1	
		k2	3	KOR, TWN, SGP		
		k3	1	USA		
	k = 4	k1	17	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, HKG	k2 outlier	
		k2	1	JPN		
		k3	3	KOR, TWN, SGP		
		k4	1	USA		
	k = 5	k1	7	AUT, CHE, NLD, AUS, DEU, BEL, FRA	k3 outlier	
		k2	10	NOR, CAN, HKG, SWE, IRL, DNK, GBR, ITA, FIN, NZL		
		k3	1	JPN		
		k4	3	KOR, TWN, SGP		
		k5	1	USA		
	k = 6	k1	7	AUT, CHE, NLD, AUS, DEU, BEL, FRA	k4 outlier	
		k2	9	CAN, HKG, SWE, IRL, DNK, GBR, ITA, FIN, NZL		
		k3	1	NOR		
		k4	1	JPN		
k5		3	KOR, TWN, SGP			
k6		1	USA			

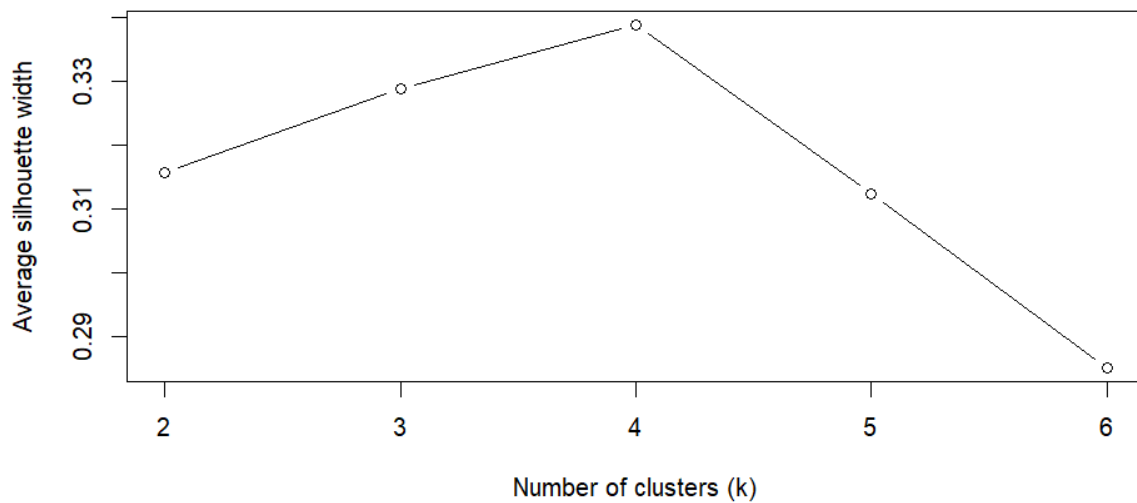
Hierarchical (Complete) c = 0.71	k = 2	k1	10	HKG, CAN, GBR, FIN, NZL, NOR, SWE, IRL, DNK, ITA	k2	Interpretable and meaningful to some extent, although the cophenetic coefficient is the lowest among the four linkage methods k = 2, k = 4, and, k = 6 (best) are the possible cluster solutions based on the % change in heterogeneity (see Figure 9.6, and Table 9.9 above)
		k2	12	USA, TWN, KOR, SGP, AUS, CHE, JPN, AUT, NLD, DEU, BEL, FRA		
	k = 3	k1	10	HKG, CAN, GBR, FIN, NZL, NOR, SWE, IRL, DNK, ITA	k2	
		k2	11	TWN, KOR, SGP, AUS, CHE, JPN, AUT, NLD, DEU, BEL, FRA		
		k3	1	USA		
	k = 4	k1	10	HKG, CAN, GBR, FIN, NZL, NOR, SWE, IRL, DNK, ITA	k2	
		k2	8	AUS, CHE, JPN, AUT, NLD, DEU, BEL, FRA		
		k3	3	TWN, KOR, SGP		
		k4	1	USA		
	k = 5	k1	10	HKG, CAN, GBR, FIN, NZL, NOR, SWE, IRL, DNK, ITA	k2	
		k2	6	JPN, AUT, NLD, DEU, BEL, FRA		
		k3	2	AUS, CHE		
		k4	3	TWN, KOR, SGP		
		k5	1	USA		
	k = 6	k1	5	HKG, CAN, GBR, FIN, NZL	k3	
		k2	5	NOR, SWE, IRL, DNK, ITA		
k3		6	JPN, AUT, NLD, DEU, BEL, FRA			
k4		2	AUS, CHE			
k5		3	TWN, KOR, SGP			
k6		1	USA			

Hierarchical (Average) c = 0.82	k = 2	k1	18	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, JPN, HKG	k1	k = 3, k = 4, and k = 6 have higher % changes in heterogeneity than the average k = 4 seems to be the best cluster solution, as it has the highest % change, and k = 6 has too many outliers (see Figure H9.7 and Table 9.10 above)
		k2	4	USA, TWN, SGP, KOR		
	k = 3	k1	18	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, JPN, HKG	k1	
		k2	1	USA		
		k3	3	TWN, SGP, KOR		
	k = 4	k1	10	NOR, CAN, HKG, GBR, FIN, NZL, DNK, ITA, IRL, SWE	k2	
		k2	8	JPN, CHE, AUT, AUS, NLD, DEU, BEL, FRA		
		k3	1	USA		
		k4	3	TWN, SGP, KOR		
	k = 5	k1	10	NOR, CAN, HKG, GBR, FIN, NZL, DNK, ITA, IRL, SWE	k3 outlier	
		k2	7	CHE, AUT, AUS, NLD, DEU, BEL, FRA		
		k3	1	JPN		
		k4	1	USA		
		k5	3	TWN, SGP, KOR		
	k = 6	k1	9	NOR, CAN, HKG, GBR, FIN, NZL, DNK, ITA, IRL, SWE	k4 outlier	
		k2	1	NOR		
k3		7	CHE, AUT, AUS, NLD, DEU, BEL, FRA			
k4		1	JPN			
k5		1	USA			
k6		3	TWN, SGP, KOR			

Hierarchical (WPGMA) c = 0.79	k = 2	k1	21	AUS, AUT, BEL, CAN, DNK, FIN, FRA, DEU, IRL, ITA, NLD, NOR, NZL, SWE, CHE, GBR, JPN, KOR, TWN, SGP, HKG	k1	Interpretable and meaningful to some extent k = 2, k = 4, and k = 5 have higher % changes in heterogeneity than the average k = 5 seems to be the best cluster, as it has the highest % change (see Figure H13 and Table 63 above)
		k2	1	USA		
	k = 3	k1	10	NOR, SWE, IRL, DNK, ITA, HKG, CAN, GBR, FIN, NZL	k2	
		k2	11	TWN, KOR, SGP, AUS, CHE, JPN, AUT, NLD, DEU, BEL, FRA		
		k3	1	USA		
	k = 4	k1	10	NOR, SWE, IRL, DNK, ITA, HKG, CAN, GBR, FIN, NZL	k2	
		k2	8	AUS, CHE, JPN, AUT, NLD, DEU, BEL, FRA		
		k3	3	TWN, KOR, SGP		
		k4	1	USA		
	k = 5	k1	10	NOR, SWE, IRL, DNK, ITA, HKG, CAN, GBR, FIN, NZL	k2	
		k2	6	JPN, AUT, NLD, DEU, BEL, FRA		
		k3	2	AUS, CHE		
		k4	3	TWN, KOR, SGP		
		k5	1	USA		
	k = 6	k1	9	SWE, IRL, DNK, ITA, HKG, CAN, GBR, FIN, NZL	k2	
		k2	6	JPN, USA, KOR, NLD, AUT, BEL		
		k3	1	NOR		
		k4	2	AUS, CHE		
		k5	3	TWN, KOR, SGP		
		k6	1	USA		

Table 10.4 shows the results of all hierarchical cluster analyses for healthcare system indicators with the ideal cluster solution highlighted in yellow. To be consistent with the interpretation of income maintenance programmes, cluster solutions where $k = 1$ and $k > 6$ were excluded from the interpretation. Figure 10.2 below shows the average silhouette score of different numbers of clusters for healthcare systems indicators. This figure implied $k = 4$ was the best cluster solution, and $k = 3$ was the second-best.

Figure 10.2: Average Silhouette Width of Different k for Healthcare Systems



For single linkage, $k = 2$, $k = 3$, and $k = 6$ had larger percentages in heterogeneity than the average. Nevertheless, these results were not satisfactory, as the distribution of cases was very uneven. However, since the percentage change was the only criterion for deciding the classification of Japan, three classifications generated by single linkage were retained. In complete linkage, $k = 2$, $k = 4$, and $k = 6$ had higher heterogeneity than the average. Overall, the result generated via complete linkage was a relatively balanced classification, and therefore, they were relatively satisfactory, regardless of the fact that complete linkage had the lowest level of cophenetic coefficient among all linkage methods used in this thesis. Concerning average linkage, $k = 3$, $k = 4$, and $k = 6$ were potential cluster results for further interpretation due to its percentage change in heterogeneity. Although more outliers have been identified, they were relatively satisfactory from the perspective of the distribution of the cases. In addition, average linkage had the highest level of cophenetic coefficient among the four linkage methods, which meant that it might have a higher level of internal validity than other linkage methods. Finally, among the results generated by WPGMA, $k = 2$, $k = 3$, and $k = 5$ become potential cluster solutions. The results of WPGMA were similar to single linkage, with a relatively large number of outliers. In sum, there were 12 classifications that

had a higher percentage change in heterogeneity than the average. These results did not provide the seemingly best cluster solution: there were three linkage methods supporting $k = 2$, $k = 4$, and $k = 6$, which meant all these could be the best number of clusters. The three-cluster solution was included in two linkage methods, while the five-cluster solution was only included in WPGMA.

The hierarchical cluster analysis did not generate a stable classification. Nonetheless, compared to the chaotic results in welfare systems, there were a few distinct patterns that can be identified: the American healthcare system was often treated as an outlier (11 out of 12 hierarchical cluster results, which was predicted by many researchers. In addition, South Korea, Taiwan, and Singapore were classified together in 9 out of 12 classifications. It seems that these East Asian healthcare systems might share similarities.

10.3.2 Interpretation of Fuzzy Cluster Analysis of Healthcare Systems

The result of fuzzy cluster analysis of healthcare systems is shown in Table 9.13. For the classification of healthcare systems, only $k = 3$ was reviewed here, as it had the highest level of internal validity (i.e., the SIL.F). As mentioned in Section 9.3.2, the first group consisted of Canada, Denmark, Finland, Ireland, Italy, New Zealand, Norway, Sweden, the UK, and Hong Kong, while the second group included Australia, Austria, Belgium, France, Germany, the Netherlands, Switzerland, and Japan. The final group includes the US, South Korea, Singapore, and Taiwan. The fuzzy cluster analysis corresponded to the existing healthcare typologies. The national health services in Nordic countries and Britain were classified together, while healthcare systems based on social insurance principles in Continental Europe were classified into the second group. Interestingly, the American and three East Asian healthcare systems were classified together.

10.3.3 The Classification of the Japanese Healthcare System

Table 10.5 summarises the similarities between the Japanese healthcare system and

other healthcare systems. As predicted by the literature (see Chapter 4), Japan was very similar to those Bismarckian healthcare systems, if using one of the most famous classifications suggested by OECD (1987), such as Austria, Belgium, Germany, France, and the Netherlands (11 out of 13 classifications). Interestingly, Australia and Switzerland shared relatively high similarities with Japan (9 out of 13 classifications). Other OECD healthcare systems, except the USA and South Korea, only shared moderate levels of similarity with Japan (4 out of 13 classifications). The result in Table 10.5 did not support classifying Japan with other East Asian healthcare systems, although there might be an East Asian healthcare model consisting of South Korea, Taiwan, and Singapore. Japan was the least similar to the US (1 out of 13 classifications), but this might be attributed to the fact that the US remained an outlier (as shown in healthcare system literature, cf. Chapter 4). In addition, it should be noted that Japan also had a tendency to be classified as an outlier (2 out of 13 classifications), which might imply that the Japanese healthcare system was unique.

Table 10.5: Similarities between Japan and Other Cases (Healthcare System)					
	out of 13 CA results	out of 12 HCA results	FCA (k = 3)	Similarity	Healthcare system type
AUT	11	10	1	Very High	Bismarckian
BEL	11	10	1	Very High	Bismarckian
DEU	11	10	1	Very High	Bismarckian
FRA	11	10	1	Very High	Bismarckian
NLD	11	10	1	Very High	Bismarckian
AUS	9	8	1	High	Beveridgean
CHE	9	8	1	High	Bismarckian
CAN	4	4	0	Moderate	Beveridgean
DNK	4	4	0	Moderate	Beveridgean
FIN	4	4	0	Moderate	Beveridgean
GBR	4	4	0	Moderate	Beveridgean
HKG	4	4	0	Moderate	East Asia?
IRL	4	4	0	Moderate	Beveridgean
ITA	4	4	0	Moderate	Beveridgean
NOR	4	4	0	Moderate	Beveridgean
NZL	4	4	0	Moderate	Beveridgean
SWE	4	4	0	Moderate	Beveridgean
SGP	3	3	0	Low	East Asia?
KOR	3	3	0	Low	East Asia?
TWN	3	3	0	Low	East Asia?
USA	1	1	0	Very Low	Private/mixed/pluralist

Note: Japan is classified as an outlier in 2 HCA (out of 12).
CA = cluster analysis, HCA = hierarchical cluster analysis, FCA = fuzzy cluster analysis

Considering the fitness, Japan was classified into a group with most of Bismarckian healthcare systems in fuzzy cluster analysis (e.g., Austria, Belgium, Germany, France, Netherlands). However, Australia and Switzerland were also included in this group. On the one hand, it should be noted that the membership for Japan was 0.42, which meant that Japan could not be clearly assigned to this group. On the other hand, the membership of Japan to be in cluster 3 (with the USA, South Korea, Taiwan, and Singapore) was 0.40. This meant that Japan might be considered a hybrid case.

Both hierarchical and fuzzy cluster analyses tended to classify Japan with Austria, the Netherlands, Germany, France, and Belgium. Australia and Switzerland were often included in the same cluster as Japan, especially in the classifications with fewer clusters. This largely

corresponded to the classification in which Japan was classified as the social insurance model (H2-2). In previous healthcare system typologies generated via cluster analysis, Wendt (2014) classified Japan with Austria, Belgium, Canada, France, Germany, Luxembourg, and New Zealand, while Reibling et al. (2019) put Japan with Finland, South Korea, Norway, New Zealand, Portugal, and Sweden. In the combined system types generated by Molla et al. (2021), Japan was grouped with Australia, Austria, Belgium, the Czech Republic, Switzerland, France, Germany, Ireland, Israel, Luxembourg, South Korea, Sweden, the US, Canada, Denmark, the Netherlands, New Zealand, Norway, and the UK. The classification of Japan in this thesis was closer to Wendt (2014) rather than Molla et al. (2021) and Reibling et al. (2019). However, unlike Wendt (2014), Japan was not classified with Canada and New Zealand, which only share moderate levels of similarity with Japan (see Table 10.5). As mentioned above, based on the cluster results, it was possible that East Asian healthcare systems shared some similarities. The result of fuzzy cluster analysis seemed to support Lee et al. (2008), who classified Japan as a hybrid of the national insurance model and social insurance model (cf. Section 4.4 for more details). Nonetheless, the results from hierarchical cluster analysis showed a different picture in which Japan shares low levels of similarity with other East Asian healthcare systems. However, regarding the issue of fitness, Japan turned out to be an unclear assignment between the group of corporatist healthcare systems and some other East Asian healthcare systems. The membership level for the social insurance model was slightly higher (0.42). This corresponded to Lee et al. (2008), who classified Japan as a hybrid of the national insurance model and social insurance model (cf. Section 4.4 for more details).

Therefore, considering that Japan was frequently classified with typical Bismarckian healthcare systems, the overall conclusion was that Japan was more likely to be classified as a Bismarckian healthcare system (H2-2), but less likely to be a Beveridgean healthcare system

(H2-1) and a private/pluralist healthcare system (e.g., the USA) (H2-3). Its membership implied that the probability for Japan to be classified with some other East Asian healthcare systems or an outlier could not be ruled out (H2-4 and H2-5).

The descriptive data also illustrated similar patterns. The financial input of the Japanese healthcare system did not have distinct features. In terms of generosity, the out-of-pocket expenditure remained relatively low, and the hospital density was significantly higher than in other OECD countries (except South Korea). Nevertheless, the density of doctors was low. The integration index of Japan was similar to Bismarckian healthcare systems, which might explain the overall similarities shown in the cluster analysis. Finally, there was no distinctive pattern that could be identified in terms of outcome/performance.

10.3.4 Implications of Classifications of Healthcare Systems

Based on the internal validity and the author's discretion, $k = 4$ in the average linkage might be the best result, because average linkage has the highest levels of cophenetic coefficient. Simultaneously, $k = 3$ did not provide very meaningful results, while the number of outliers in $k = 6$ increased the difficulties in interpreting the findings. Nonetheless, a consensus cannot be reached. Although complete linkage had a lower level of cophenetic coefficient, this did not mean that it could be discarded, because it might generate interpretable results. As we have seen in the cluster analyses for welfare systems, a high level of internal validity did not necessarily accompany meaningfulness, and vice versa. In addition, taking fuzzy cluster analysis into consideration, $k = 4$ was not the best cluster solution.

Although there was an absence of a stable classification, unlike the chaotic picture in income maintenance policies, some distinct patterns could be observed after triangulating the results of hierarchical cluster analysis and fuzzy cluster analysis. In hierarchical cluster analysis, the US was classified as an outlier, and three East Asian healthcare systems (i.e., Taiwan, Singapore, and South Korea) were classified into one group. This was partially

supported by the result of fuzzy cluster analysis, in which three East Asian cases were grouped together, with the US remaining as an unclear assignment.

Compared to welfare states, healthcare systems in advanced economies were more distinctive. Although there was a lack of consensus on the classification, the cluster results shown in this section had a few implications for the research of healthcare system typologies. Firstly, the results of both types of cluster analysis largely corresponded to the conventional wisdom of dividing healthcare systems into the Bismarckian and Beveridgean models (see e.g., OECD, 1987). Continental European countries, except Italy (which has a national health service), such as Germany, France, Belgium, and Austria, tended to be classified together, while the Nordic and Anglo-Saxon countries tended to be grouped together. The US was left to be an outlier, which also corresponded to OECD's (1987) typologies. Interestingly, the Australian healthcare system was classified into the Bismarckian group, although its healthcare system was mainly tax-funded.

Secondly, comparing the results generated in this thesis with the latest typologies literature developed by scholars (e.g., Molla et al., 2021; Reibling et al., 2019; Wendt, 2014), a few similarities and differences could be identified. On the one hand, those healthcare systems considered as the archetypes are classified together. For example, Austria, Germany, Belgium, and France were representatives for one group with their labels varying from different scholars, such as the healthcare-provision-oriented type used by Wendt (2014) and the supply- and choice-oriented public systems used by Reibling and her colleagues (2019). On the other hand, there was a discrepancy between the results in this thesis and other typologies. One of the distinctive features was that the US is often classified as an outlier. Except for Wendt (2014), who labelled the American healthcare system as unclassified, other typologies tended to classify the US with other cases.

Thirdly, although not much literature explicitly argued for the East Asian healthcare

model, it was embedded in the East Asian model thesis (see e.g., Holliday, 2000; cf. Chapters 3 & 4). The results of cluster analysis supported some similarities shared by Taiwan, Singapore, and South Korea. The result also seemed to support Lee et al. (2008), who proposed to use the national healthcare insurance model to capture South Korea and Taiwan (cf. Section 4.4 for more details). Nonetheless, the results from hierarchical cluster analysis showed a different picture in which Japan shared low levels of similarity with other East Asian healthcare systems. However, Hong Kong was frequently grouped with the national healthcare service cluster, while Japan fell into the Bismarckian healthcare model. Given these differences among East Asian healthcare systems, we still could not reach the conclusion that an East Asian healthcare system consisting of Japan, South Korea, Taiwan, Singapore, and Hong Kong exists.

10.4 Elective Affinity between the Japanese Welfare State and the Healthcare System

Table 10.6: A Summary of Major Findings from Cluster Analysis

Cluster techniques	Findings	Relevant hypotheses
Hierarchical cluster analysis of welfare systems	JPN tended to be a hybrid, and no clear cluster was identified	Not support H1-4 and H1-5
Fuzzy cluster analysis of welfare systems	JPN tended to be a hybrid with weak membership to be classified as conservative (when k is large)	Weakly support H1-2
Cluster analysis of welfare systems	JPN was a hybrid or unclear case with a weak tendency to be classified as conservative	Weakly support H1-2
Hierarchical cluster analysis of healthcare systems	Relatively strong support for classifying JPN as Bismarckian	Support H2-2
Fuzzy cluster analysis of healthcare systems	Relatively strong support for classifying JPN as Bismarckian, but also possible to be classified with other East Asian cases	Support H2-2 and H2-4
Cluster analysis of healthcare systems	JPN was likely to be Bismarckian, with the possibility of being a hybrid of NHI/SHI (see Lee et al., 2008)	Support H2-2

Table 10.6 summarises the main findings from the cluster analysis (see previous sections in this chapter for detailed interpretation of these findings). The hierarchical cluster analysis of welfare systems did not reach an agreement on how to classify Japan. Japan was regarded as an unclear case. The fuzzy cluster analysis of welfare systems was not able to

generate the best cluster solution. Japan was classified with other conservative welfare states when the number of clusters is large. Combining both cluster analyses, Japan remains to be a hybrid or an unclear case due to the chaotic picture. Nonetheless, Japan had a weak tendency to be classified with other conservative welfare states. The hierarchical cluster analysis of healthcare systems supported classifying Japan as a Bismarckian healthcare system. The fuzzy cluster analysis reinforced this classification, but it also indicated the similarity shared by Japan and other East Asian healthcare systems. However, given that Hong Kong was classified differently, considering both cluster analyses, it was relatively clear that Japan was classified as a Bismarckian healthcare system. It was also possible that Japan was a hybrid of the social health insurance model and the national health insurance model (see Lee et al., 2008).

From what has been mentioned above, it seemed that the Japanese welfare state had a weak tendency to be grouped as conservative welfare regimes, while the healthcare system was classified as a Bismarckian model, with the possibility of being similar to some East Asian cases. The welfare state in Japan was possible to be similar to the welfare systems in Austria, Belgium, Germany, the Netherlands, and Switzerland, while it was likely that the Japanese healthcare system assembled those healthcare systems in Germany, France, Belgium, the Netherlands, Austria, and France. It could be found that most countries that were similar to Japan overlap, and these countries were regarded as conservative welfare regimes/healthcare systems in the literature. It was expected that a conservative welfare regime would be accompanied by a Bismarckian healthcare system. Hence, the elective affinity between the welfare state and the healthcare system in Japan could be identified (H3-1).

However, this was not the full picture. It was relatively difficult to confirm the elective affinity between the Japanese welfare state and the healthcare system. First, as

discussed in previous sections in this chapter, low average SIL and different cluster solutions generated by different cluster analyses indicated that no stable clusters could be established. Second, in addition to the conservative welfare regimes mentioned above, Japan was also classified with the Netherlands and Switzerland, which were controversial cases in the literature. Third, if only considering the fitness measured by fuzzy cluster analysis, the Japanese welfare state was only classified with the “classical” Continental European conservative welfare regimes in fuzzy cluster analysis, with a high number of clusters, while in other cluster solutions, Japan remained unclear or hybrid. The Japanese healthcare system was an unclear assignment between the Bismarckian group and the East Asian group (plus the US).

Therefore, in sum, considering the consistency and inconsistency, it was plausible to conclude that the Japanese welfare state and its healthcare system were consistent, but this consistency was relatively weak and loose. The results in this thesis were different from Kasza’s (2002, 2006) argument for the inconsistency between income maintenance and healthcare policy in Japan. The elective affinity in Japan corresponded to the assumption in most welfare regime typologies (see Chapters 2 & 3). If using the framework proposed by Gani and de Clercq (2023), the Japan was located in the conservative block for welfare state and healthcare system. Nonetheless, the weak consistency showed that Kasza’s analysis was stills meaningful.

Chapter 11 Discussion and Conclusion

The welfare modelling business has been one of the most salient research topics in comparative welfare states over the past thirty years. Since Esping-Andersen's (1990) path-breaking classification, numerous academic studies have emerged. Compared to those prototypes (i.e., Germany for the conservative welfare regime, Sweden for the social democratic welfare regime, and the US for the liberal welfare regime) in Esping-Andersen's (1990) classification, Japan received less attention in this canon of comparative social policy (see Chapter 2). The classification of Japan was not satisfactory, which triggered research in classifying Japan and expanding welfare regime theory to East Asia (see Chapter 3). Japan became special, as it was the only case included in both Esping-Andersen's (1990) typologies and the discussion about the East Asian welfare model, which attenuated the importance of conducting research to revisit the classification of this interesting case.

As shown in Chapter 4, healthcare policy was one of the major policy sectors in contemporary welfare states. However, healthcare policy was not the focus of Esping-Andersen's (1990) framework, which induced critiques of his welfare regime typology. On the other hand, comparative healthcare policy analysts also developed typologies of healthcare systems largely independently from the welfare regime literature.

Following a real typical approach and referring to the concept of the elective affinity, another key issue for this thesis is Kasza's (2006) critique of the assumption in most welfare regime typologies (see Chapter 5). Hence, it was necessary to examine the connection between income maintenance policies and healthcare policies. To facilitate the comparison between different policy sectors and the establishment of the connection, case selection and concept (variables or criteria) selection were significant. A unified framework for welfare/healthcare modelling business was developed for further analysis in this thesis (see Chapter 6). To address the research questions outlined in Section 7.2, although a number of

methods available in the literature could be used for classification, cluster analysis (both hierarchical cluster analysis and fuzzy cluster analysis) was chosen as the optimal method to address the research questions (see Chapter 7).

After laying the theoretical and methodological foundations, operationalisation and data were necessary to conduct the analysis. Using the concepts in the unified framework, data were gathered from international organisations and government statistics (see Chapter 8). Finally, to answer the research questions, both types of cluster analysis were conducted and interpreted (see Chapters 9 & 10).

The first section of this final chapter summarises the findings of this thesis (Section 11.1). Then, it discusses the implications of the findings demonstrated in Chapter 10 (Section 11.2). The following section addresses the limitations of this research (Section 11.3). Then, the next section indicates possible future research (Section 11.4). The last section will summarise this chapter (Section 11.5).

11.1 Summary of the Findings

As outlined in Section 1.4, there are two main research objectives in this thesis. The first one is to provide a comprehensive review of current research on classifying the Japanese welfare state and healthcare system, which includes Esping-Andersen's typology, East Asian welfare regimes, and healthcare system typologies. Reviewing these studies in the welfare/healthcare modelling business leads to a need for up-to-date classification (see Chapters 2-4), which is the second research objective in this thesis. The second research objective is divided into three RQs (see Section 7.2).

Table 11.1: A Summary of Major Findings of This Thesis

Knowledge gap	RQ	Findings
An up-to-date classification is needed	RQ1: Classification of JPN welfare system	Hybrid/unclear with weak tendency to be classified with other conservative welfare systems
JPN received less attention in healthcare system typologies	RQ2: Classification of JPN healthcare system	Bismarckian healthcare system but shares similarities with other East Asian healthcare systems
Lack of connection between two theories and Kasza's challenge	RQ3: Elective affinity between welfare and healthcare in JPN	A certain level of elective affinities (conservative welfare system + Bismarckian healthcare system) but undermined by the unclear assignment of JPN welfare system

Table 11.1 summarises the major findings of this thesis. Although there are numerous attempts to classify welfare states, most research has used relatively old data. RQ1 seeks a relatively new classification of the Japanese welfare state. As Sections 9.2 and 10.2 found, hierarchical cluster analysis of welfare systems did not generate a stable classification and classified Japan as a hybrid. Fuzzy cluster analysis of welfare states reached a relatively similar result, although Japan has a weak tendency to be grouped with other conservative welfare regimes if the number of categories is large (see Table 10.6). The classification of the Japanese welfare system based on the latest data probably corresponds to the hybrid category. Japan was regarded as a hybrid of liberal and conservative welfare regimes (cf. Powell, Kim, & Kim, 2020, p. 99). However, the cluster results provide few clues for deciding the best classification (see Section 11.2 for more discussion).

In terms of healthcare system typologies, there was little research that explicitly focused on Japan. RQ2 addresses the classification of Japan in healthcare system typologies. As Sections 9.3 and 10.3 found, the hierarchical cluster analysis provided relatively strong support for classifying the Japanese healthcare system as a Bismarckian or social insurance model, while the results of fuzzy cluster analysis retained the possibility to classify Japan with other East Asian healthcare systems (see Table 10.6).

In existing literature, welfare regime typologies and healthcare system typologies were relatively independent. Combining all the results for both RQs enabled a comparison of both streams of typologies. With reference to the concept of the elective affinity, RQ3

explored the connection between income maintenance and healthcare policies. The results of cluster analysis showed that there was a certain level of elective affinities between the Japanese welfare system and healthcare system, as both policy sectors followed a Bismarckian or conservative logic that emphasised social insurance and stratification based on occupations. However, it was also important to note that the elective affinities were undermined by the unclear picture in the classification of welfare systems.

11.2 Original Contributions of This Thesis

This thesis enhances the current welfare/healthcare modelling business and classification of the Japanese welfare state and healthcare system. To fulfil the first research objective, the literature review (Chapters 2-4) of this thesis provides an up-to-date and comprehensive review of existing studies in welfare regime typologies and healthcare system typologies. Furthermore, ideal typical and real typical approaches are highlighted as an important theoretical basis of the welfare/healthcare modelling business (see Section 5.1).

There are several original contributions of this thesis. Firstly, the cluster analysis of Japan with other OECD and East Asian welfare/healthcare systems enhances the understanding of the Japanese welfare state and contributes to existing comparative welfare state and healthcare system typology literature. The findings in this thesis suggested that Japan was classified as a hybrid with a weak tendency to be classified with other conservative welfare regimes, which is not a surprising finding based on the literature. Compared with other cases, although Japan possessed uniqueness for some indicators, the overall data patterns did not significantly differ from those of other OECD countries and East Asian counterparts (see Section 10.2.3 & 10.3.3). This might explain why Japan tended to be classified as a hybrid. Compared to other cases, the conservative feature in income maintenance policies might derive from no legal coverage of non-contributory programmes. This feature was shared with other conservative welfare states (e.g., Belgium and Austria) but

was less prominent in welfare states classified in other clusters. For healthcare systems, Japan was similar to Bismarckian healthcare systems in terms of integration, whilst Japan also shared a similar level of density of doctors and the same access index with other East Asian healthcare systems (excluding Hong Kong), which explains the unclear assignment revealed by the fuzzy cluster analysis. Although this classification of Japan is not new, one possible reason suggested by the cluster results might be striking: based on the criteria in the unified framework, Esping-Andersen's (1990, 1999) three worlds of welfare regimes were less distinct than they were in the 1980s (see Section 10.2 for relevant discussion). In addition, the results also did not support the existence of the East Asian welfare model when comparing East Asian welfare regimes with other 17 OECD countries. The results of cluster analysis seemed to support the convergence thesis of welfare state development rather than the divergence (see Section 2.1).

Secondly, this thesis overcomes some of the limitations of the existing welfare/healthcare modelling business. On the one hand, existing intellectual efforts using quantitative techniques mainly focus on a large number of cases (i.e., the forest) rather than a specific case (i.e., the tree), which inevitably results in less attention paid to the special case. On the other hand, qualitative case studies or comparative case studies adopting the small-N strategy (see Sections 6.1.2 & 6.1.3) generated diversified results due to various selection strategies of cases and variables. This thesis selects Japan as its main research object, which avoids the insufficient explanation of this case in previous quantitative studies. In addition, cluster analysis, as a mature and solid quantitative technique, is used for classifying the Japanese welfare system. To facilitate the classification, a unified framework with consistent measurements and operationalisation is constructed. This avoids ending with merely introductions to East Asian or Japanese social policies (Yang, 2016, p. 88).

Thirdly, this thesis attempts to connect the welfare regime typologies and healthcare system typologies by applying the concept of elective affinities to examine the Japanese welfare state and healthcare system. In the existing literature, the welfare state can be narrowly defined as income maintenance (e.g., Esping-Andersen's (1990) classification of OECD 18). This narrow view, emphasising the cash benefits, ignores the important healthcare and service provision in the welfare state. In contrast, the welfare state can also be viewed as a collective concept involving income maintenance, healthcare, family policy, active labour policies, housing, and education policies, etc (cf. Section 6.2.1). The assumption that there is consistency between these policy sectors in the broad view is challenged by Kasza (2000, 2006). One of the original contributions of this thesis is that it is situated between welfare regime typologies and healthcare system typologies. On the one hand, this thesis examines not only the Japanese welfare state but also its healthcare systems. On the other hand, this thesis does not assume the consistency between different policy sectors in Japan at first hand, while a major research question is to investigate the elective affinity between the two most important welfare policies. This is achieved by the unified framework constructed in Chapter 6. As mentioned above, the cluster results demonstrate that there is a certain level of elective affinity existing between the conservative welfare state and the Bismarckian healthcare system in Japan, but this elective affinity was undermined by the complex and chaotic classification, especially for the welfare systems. Regarding Kasza's (2006) assessment of Japan, this thesis is less supportive of the inconsistency between income maintenance and healthcare policies in Japan.

Fourthly, this thesis provides a classification of the Japanese welfare state and healthcare system using the latest data. The data used in the majority of the literature about classifying welfare states used data from the 2000s or earlier. Although a few recent welfare state typologies (e.g., Danforth, 2014; Yorük et al., 2022) did include Japan in their analyses,

as mentioned above, there is little explanation on the classification of Japan. The data used in these analyses are based on 1950-2000 for Danforth (2014) and the mid-2010s for Yorük and his colleagues (2022). In contrast, most data used in this thesis reflect the institutional features and performance/outcome of the welfare systems and healthcare systems after 2020, with some exceptions where the latest data are not available (see Chapter 8 for relevant information). The use of the latest data provides a latest classification to the Japanese welfare state and healthcare system and reflects the latest development in advanced welfare states and healthcare systems (e.g., post-productivist development in East Asia, see Section 3.1.3 for relevant discussion).

Fifthly, in terms of case selection, this thesis considers the classical 18 OECD countries used by Esping-Andersen (1990) plus East Asian cases (South Korea, Taiwan, Hong Kong, and Singapore), which are considered as East Asian welfare regimes (see Chapter 3). Due to data availability, almost no existing study has adopted the same case selection strategy. For instance, the only cluster analysis including East Asian and OECD welfare systems is Lee and Ku (2007), in which Taiwan, South Korea, and Japan are selected with other Western welfare states. In the realm of healthcare system typologies, S. Yu (2014) included not only OECD countries but also Asian healthcare systems. In addition to Japan, South Korea, Taiwan, Hong Kong, and Singapore, two other Southeast Asian countries (i.e., Malaysia and Thailand) are analysed. Nonetheless, it might be questionable whether classifying welfare/healthcare systems in the middle-income countries with those in high-income countries and territories generates comparable and meaningful results. In another publication, W. K. Yu (2014) chose Hong Kong, Taiwan, and South Korea but omitted Singapore. Hence, this thesis is one of the novel cluster analyses selecting OECD countries and all the core cases of East Asian welfare regimes. Based on this case selection, this thesis

also attempted to construct data for classifying welfare systems and healthcare systems in these countries or territories.

Last but not least, in terms of methodological contribution, this thesis considers the fitness of the classification, which is relatively rare in existing literature (see e.g., Ferragina & Seeleib-Kaiser, 2011). Linking to the first point, by introducing fuzzy logic (cf. Hudson & Kuhner, 2009, 2011; Yang, 2016; Yang & Kuhner, 2020) into cluster analysis and utilising the fuzzy cluster analysis, it becomes possible to examine a single case in more detail.

Conventional wisdom in the literature tends to classify Japan in a crisp way (i.e., only focusing on the best cluster), while this thesis highlights the importance of the second-best cluster because the simple assignment to one cluster might hide the complexity of the classification, especially for controversial cases like Japan. Without examining the goodness of fit, the conclusion would have been that the Japanese welfare system is a hybrid, and its healthcare system is a Bismarckian model. The classification of hybrid is not satisfactory for a controversial case, as it does not answer the questions that Japan is a hybrid of what types of welfare regimes or healthcare systems, and how hybrid Japan is. The fuzzy cluster analysis in this thesis reveals a more complex picture that Japan retains a weak tendency to be classified with other conservative welfare regimes and possibilities to be grouped with other East Asian welfare healthcare systems.

11.3 Limitations of This Research

There are two limitations of this research. The first limitation is the compensation effects inherent in the algorithms of cluster analysis (see relevant discussion in Section 7.3.1). Since this thesis only focuses on income maintenance and healthcare policy and addresses both policy sectors separately, there is no compensation between different policy sectors (Hudson & Kühner, 2010). Nevertheless, compensation effects still exist within the income maintenance or healthcare systems. For example, a welfare system with fragmented pension

schemes (i.e., one of the integration variables) might compensate for its relatively high level of benefits (i.e., one of the generosity variables). Ideally, these compensation effects can be minimised by conducting multiple cluster analyses for different sets of variables. Nonetheless, this is not feasible, as some criteria can only be operationalised by very few variables with available data (see below).

The second limitation is the data availability and quality, especially for East Asia cases. The analysis in this thesis is strongly data-driven. Hence, the quality of data has an impact on the results. The data for most international organisations and datasets constructed by scholars mainly focused on OECD countries. The data available in these international organisations has issues such as consistency (see e.g., Ebbinghaus, 2005). This thesis does not aim to provide a classification of the Japanese welfare system and healthcare system using longitudinal data, which avoids the consistency of data between different times to some extent. However, the consistency between countries remains a concern in these international organisation datasets, which is inevitably inherited in the cluster analysis in this thesis. More importantly, little information is available for Hong Kong, Taiwan, and Singapore. To address this issue, this thesis retrieved data from government statistics and scholars' articles. Some concepts cannot be operationalised by the best indicator. Although efforts have been made to address to reduce this impact by comparing definitions of indicators from different datasets, all these issues relating to data availability and consistency between cases pose a challenge to the quality of the cluster analysis in this thesis.

Two specific issues relating to the data quality are worth noting here. The first issue is the influence of extreme value (see Section 8.2). Although remedies could be used to adjust the extreme value, these remedies might lack sophisticated justification. Furthermore, the standardisation involved in the calculation of proximity reduced the influence of extreme values. The second issue is the impact of COVID-19 (see Section 8.3). The pandemic is

likely to have a strong influence on financial input and health outcomes but is less influential on institutional settings. A possible solution is to use the data before the outbreak of COVID-19, which does not fit the aim of this thesis (i.e., providing an up-to-date classification). Furthermore, this thesis was also interested in whether COVID-19 has impacted the type of healthcare systems.

11.4 Implications and Possible Future Research

The aim of this thesis is to provide a classification using new data of the Japanese welfare state and healthcare system. Furthermore, it also engages with Kasza's (2002, 2006) challenge of the welfare regime approach. In general, the analysis in this thesis is largely descriptive. Therefore, future research can be oriented to be more exploratory and explanatory on the classification of the welfare state and healthcare system in Japan.

Although the cluster results imply that convergence explains the change in the classification of Japan, whether this change can be attributed to the reform that took place in Japan or the convergence between welfare systems among major economies remains uncertain.

Furthermore, another possible future research topic is to address the rationale of the Japanese welfare systems, such as whether Japan still follows the productive logic in its social policies. Particularly, this thesis also opens an opportunity for further research to explore the logic between income maintenance policy and healthcare policy when analysing welfare reforms in Japan. To address the elective affinity in Japan, it is important to examine the national contexts and how its developmental logic of social policy (e.g., productivist, conservative, or Bismarckian) infuses into different policy sectors. In terms of methodology, the analysis in this thesis is quantitative, and consequently, the national contexts remained less salient. Qualitative features, such as the influence of culture and historical development, mentioned by East Asian welfare regime analysts (see Chapter 3) are excluded in this analysis. Therefore, there is a need to conduct further comparative research that explains the classification of the

Japanese welfare systems and healthcare systems. For example, possible future research focusing on Japan can take contextual/causal factors into account (see Section 6.3) and adopt a comparative perspective to analyse the latest development of the Japanese welfare system with reference to other conservative welfare regimes. This can explain why Japan tends to be a hybrid with a weak tendency to be a conservative welfare regime. For its healthcare system, it is also worth examining the latest development of Japan with other Bismarckian healthcare systems and other East Asia healthcare systems.

Another important implication of this thesis goes beyond Japan. As mentioned earlier, the results showed that the boundaries of the welfare regime in advanced welfare systems are blurred. Drawing from these findings, the factors such as power resources that shape the institutional features may have been changed. New research could be developed to investigate what factors lead to the convergence of welfare states. However, another possibility is that the logic behind different welfare regimes still holds, but this brings another puzzle of where the differences come from. The results showed that the institutional features of developed welfare systems are largely similar. To argue for the divergence logic, it is necessary for further research to identify what is still diverging among different welfare regimes.

In addition, firstly, it is interesting to investigate the elective affinity in different countries (e.g., reasons why some countries possess elective affinities between healthcare policy and income maintenance, and why others do not). Secondly, this thesis only includes 18 OECD countries plus some East Asian countries. Therefore, this research also faces similar critique of Esping-Andersen's (1990) case selection strategy. This case selection is not satisfactory because welfare states/healthcare systems in Southern Europe and Eastern Europe are ignored. Developing countries have the potential to be included in the future analysis as well. Thirdly, the classification is heavily reliant on the concepts chosen, while

contextual/causal concepts are excluded in this thesis. Future research can also include contextual or causal research in the quantitative research to develop explanatory or exploratory research questions. Lastly, further research can also apply the concept of elective affinities to other policy sectors, such as family policy, LTC, active labour market policy, education, and housing policy.

11.5 Summary

Situated in the welfare/healthcare modelling business, this thesis attempts to provide an up-to-date classification of the Japanese welfare state and healthcare system with other OECD countries and East Asian economies using cluster analysis with the latest data. In addition to classifying and revealing the membership of Japan, this thesis also addressed the elective affinity between the welfare regime and the healthcare system in Japan. The results showed that the welfare state in Japan remained hybrid, while the healthcare system retains its Bismarckian feature as predicted in the literature. There is a certain level of elective affinity between the Japanese welfare regime and the healthcare system, although it is relatively weak. The key implication of the cluster results generated in this thesis is that the advanced welfare systems in OECD and East Asian economies are less distinct in terms of institutional features, as predicted by Esping-Andersen (1990, 1999) and the East Asian welfare regime literature. However, unlike welfare systems, the distinction between different types of healthcare systems remains.

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