Hiromi Shioji
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Management for Sustainable and Inclusive Development in a Transforming Asia

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Preface

At the end of this decade, the sustainable economic and social lives, whether in developed or least developed countries, in small or big companies, in privileged or underprivileged society, and of the employees or the general public, are being severely affected by viruses, climate change, poverty, and the gap between poor and rich countries. Amidst this situation, the development and expansion of ICT could offer remedies to minimize the effect of these problems. The challenge lies ahead in the sustainable and inclusive development approach to transform the continent Asia with a compatible management system and the use of ICT, putting the human face in mind. This book consists of excellent papers prepared by cutting-edge scholars and professionals that are presented at the 2019 Kyoto Convention by members of IFEAMA (International Federation of East Asian Management Association: China, Korea, Mongolia, Japan, Nepal, Russia, and Vietnam). Since the 1990s, these scholars and professionals have been engaging in conducting research activities.

Footing on the most comprehensive and cogent theme set out by the Kyoto Conference on *Management for the Sustainable and Inclusive Development in a Transforming Asia*, the content of each paper has prepared. Scholarships in the area of economics and management shed light on the given theme after investigating the topics in line with the managerial and industrial policies uniquely from their national perspectives.

Since the countries vary widely in respect of the external environment and internal resources of companies and industries, there is no universally accepted approach to offer a concrete solution. Therefore, researchers and professionals have discoursed intensively and extensively on the given theme by selecting techniques suited to resolve their problems.

This book, therefore, consists of chapters that discuss the specific strategies and policies set by companies and industries applying different approaches in Asian countries. Each chapter starts with a review of the theoretical background so that the reader will come across concepts. The point is that in the knowledge-based economy based on ICT, advanced utilization of knowledge and data has a strategic meaning for companies, industries, and economic policies.

This book contains 19 chapters. The highlight of the key topic in each chapter briefly presented hereunder.

The first chapter "Transformation of Asian Business: From Industrialization to Digitalization", by Fumio Yoshino, argues that digitization as a key concept, common to each chapter, is not a temporary trend, but an inevitable historical one, which could lead to "leapfrog" phenomenon centering on e-commerce throughout Asian industries and businesses, developing countries among others.

In the second chapter "Sustainable Employment Relations in Nepal: Beyond the Rhetoric, Ideal and Rational Human Resource Management", Dev Raj Adhikari examines sustainable and inclusive development, common keywords in the book, from the perspective of employment relations and human resource management in Nepal, suggesting the need for sustainable employment relations system in organizations compatible with Sustainable Development Goals (SDGs).

The third chapter on "Inclusive Business and Sustainable Rural Development in India: A Case Study of the AMUL Community-Based Food Chain", authored by Naoto Shimokado, examines the mechanism of a community-based inclusive business in poverty reduction and sustainable rural development in India. This chapter reveals with facts that how does AMUL, India, the largest community-based dairy cooperative society, contributing to small-scale organizations of producers and rural development.

The fourth chapter "Sustainable Brand Development by Product Personalization: The Attitudes of Russian Customers", by Gennady Azoev, Vasiliy Starostin, and Ekaterina Sumarokova, places the idea of product personalization in the musical instruments industry from the viewpoint of Russin customers for sustainable brand building.

In the fifth chapter "An Analysis of Multinational Apparel Enterprises' Sustainability Focusing on Fast Retailing", by Kanako Negishi examines how fast the retailing, Japanese apparel multinational corporations implemented initiatives to address poor working conditions. The enterprises have been outsourcing factories in Asia focused on sustainable management historically, and by the content analysis of their sustainability reports.

The sixth chapter "Vocational Training Policy for Ethnic Minority Labour in Transitional Countries: The Case Study in the Northwestern of Vietnam", by Ha Do Thi Hai, Anh Mai Ngoc, and Nui Nguyen Dang. The authors assess policy impact on vocational training for ethnic minority labor in the Northwest of Vietnam and evaluate the success achieved through policy implementation for the capacity development of ethnic minorities and regions.

The seventh chapter entitled "Quality of Personnel Via Accountants' Physical and Mental Strengths in Multinational Firms in Vietnam", by Dung Tran Manh, Tai Do Duc, Tung Ha Son, Dang Pham Van revealed several insightful findings, between genders and between ages, among others. Based on the statistical analysis, the researchers recommend for improving the quality of human resources through developing the physical and mental capacity of the accountants in multinational firms in Hanoi.

The eighth chapter "How Do Japanese MNCs Identify Talent? The Neglected Role of Regional Headquarters in Global Talent Management", by Tamiko Kasahara explores the role of the regional headquarters (HQs), which function to bridge the distance between HQs and subsidiaries in a distant country, in talent identification processes and talent management practices in Turkish subsidiaries of Japanese MNCs.

The ninth chapter "Doing While Thinking in Dynamic Environment: A Brief Review of Strategic Improvisation", authored by Yu Siyuan and Yu Jin clarify the importance of strategic improvisation to bring on the new competitive advantages, and proposes a synthesized process model of strategic improvisation, offering two directions for future research.

The tenth chapter "Research on Multi-interest Conflict Risk Assessment of Super-Giant Project Based on PSR Model", by Huang Dechun, Zhang Rui, and He Zhengqi, prescribes insightful strategies for super-giant projects. This paper includes relevant policy systems based on PSR (Pressure-State-Response) Model. More specifically, the paper proposes strategies for building a fair profit-sharing mechanism, improving the education level of immigrants, and strictly controlling public opinion news.

The eleventh chapter entitled "Knowledge Governance in Overseas Risk Intelligence Cooperation", by Ding Yuan, and Sun Wenbin, explores a framework for knowledge governance. The prescribed framework is composed of a portfolio of four variables, explaining the key points of intelligence cooperation so that MNCs could avoid risks overseas.

In the twelfth chapter entitled "R&D and Inter-firm Knowledge Flow in Japan's Shipbuilding Industry: Comparative Analysis of Factors that Promote Knowledge Flow Between Domestic and Overseas Partners", prepared jointly by Motoyuki Kanetsuna, Kosuke Miyaji, and Takanori Sato, examines the current state of knowledge flows between marine equipment manufacturers in Japan and domestic and overseas shipyards and draws on four revealing findings of knowledge flows.

The thirteenth chapter "The Impact of R&D Strategy on Firm Performance of ICT Companies in China", by Hongpeng Wang, Ming Tian, Yang Zhang, and Zhenhua Wang, examines how the R&D strategies (intensity, breadth, and depth) influence the performance of 107 Chinese publicly listed ICT companies. It concludes that ICT firms should simultaneously take R&D intensity, R&D breadth, and R&D depth into account.

The fourteenth chapter "Study on the Effect of Factor Efficiency on Economic Restructuring Under Supply—Side Driving", by Zhang Changzheng, Ren Hong, and Zhang Zhongzhou, estimates economic restructuring scores, factor productivity, and LMDI decomposition intensity in each province and city of China. The result shows that the efficiency of capital, labor, and technical factors has a significant effect on economic restructuring, suggesting that supply management can contribute to the restructuring of the economy more effectively.

In the fifteenth chapter "Development of the Vietnamese Iron and Steel Industry Under International Economic Integration", Nozomu Kawabata identifies that the industrial development under international economic integration is only possible when several challenges relating to ownership and management reform mitigated. The paper also suggests that such integration requires not only a market mechanism but also entrepreneurial behavior.

The sixteenth chapter "Analysis of Rebuilding the Supply Chain in RCEP Region—From the Perspective of New-Economic Geography", by Keisuke Kamada and Kentaro Yoshida, examines the economic impact of RCEP (Regional Comprehensive Economic Partnership; composed of sixteen Asian countries) on Japanese industries and businesses. The paper foresees that a strong RCEP would proliferate the international activities of Japanese manufacturers and revitalize the Japanese economy.

The seventeenth chapter "The Satisfaction of Corporations When Using Tax Administrative Services: Proceeding in Hanoi—Vietnam", by Nghi Phan Huu, Linh Tran Thi Thuy, and Tung Nguyen Duy, identifies that statistical analysis result for nine hundred Vietnamese corporations, the evaluation of tax administrative services is not high as expected, and recommend some measures for tax management authorities.

In the eighteenth chapter "Factors Influencing the Intention to Choose E-Wallet in Shopping Online: Case Study of Ha Noi Citizens", Huong Le Thi Lan, Hoa Tran Thi Van, and Hien Tran Thi Phuong overview Vietnam online shopping users and industry, indicating that more than three million people were e-wallet users by the end of 2016, and about 25 e-wallet licensed suppliers rendered services. According to the research, customers believe that e-wallet's service has not yet met their requirements.

Finally in the nineteenth chapter "Analysis of Consumption and Consumer Behavior Transformation During the Transition Period of Mongolia", Batsukh Davaasuren examines current development of consumer market, and analyzes the specific features of consumption and consumer behavior changes in Mongolia during the transition period. The paper also attempts to identify the specific features of consumer behavior transformation in Mongolia based on the results of a survey.

The further evolution of ICT and international knowledge creation and sharing will doubtless continue to lead to the gradual and historical changes in a transforming Asia where sustainable and inclusive development is critically needed. The chapters presented in this book help us to at least to understand better understand some aspects of this evolution. We encourage further research on these topics in the future and hope to contribute to such efforts ourselves.

Lastly, in the process to edit this book, we would like to express our gratitude to the following scientific committee members of IFEAMA; Hoa Tran Thi Van (National Economics University, Vietnam), Huong Le Thi Lan (National Economics University, Vietnam), Batsukh Davaasuren (National University of Mongolia), Yadamsuren Otgonsuren (National University of Mongolia), Su Dongshui (Fudan University, China), Chen Zhicheng (University of Science and Technology Beijing, China), Zhang Yang (Hohai University, China), Yu Jin (Hohai University, China),

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Fumio Yoshino (Co-editor) (Ph.D. in Economics, Takushoku University) is the Professor of Takushoku University, Tokyo. He is interested in various fields of the Asian economy but mainly specialized in the economic development of Southeast Asia and the economic cooperation of the Association of Southeast Asian Nations (ASEAN). He served as the president of the Japan Macro-engineers Society. His publications include "Is East Asian Community really necessary?" (in Japanese, Hokuseido, Tokyo, 2006) and "ASEAN and APEC: Economic Integrations in East Asia" (in Japanese, Ootori Shoten, Tokyo, 2007).

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Transformation of Asian Business: From Industrialization to Digitalization

Fumio Yoshino

1 End of Industrialization

1.1 Industry and Industrialization

As seen in the textbook of economics, industrialization is, at minimum, a process in which factors of production in one industry are mobilized to another sector, resulting in increase of production in the recipient industry and decline in the industry which thus loses factors of production.[1] When people refer to industrialization, they envision a virtual value chain. More specifically, people see its link to economic development. What industrialization is to economic development is similar to what capital accumulation is to economic growth. While economic growth leads to expansion of economic size, economic development entails longer growth with the structural changes. And the typical structural change in modern era takes the form of industrialization.

Basic difficulty lies in the double meaning of industry. First, industry is a term of production measure closely related to its product. For instance, textile industry is a group of manufacturers of textile products, while agriculture is an industry made of a group of farmers who produce cereals, vegetables etc. On the other hand, industry can mean a specific type of industry operated and managed by manufactures. Depending on definition, industry can also include mining and construction. But another definition categorizes mining in the primary industry along with agriculture. Construction, on the other hand, can be included in service or tertiary industry.

[1] See Amiya Kumar Bagchi, 'Industrialization' in *The New Palgrave Dictionary of Economics*, Vol. 2 (Macmillan Publishers Ltd), pp. 797–803. It defined industrialization as the process of.

[2] See Institute of Developing Economies (1992).

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When economists talk about industrialization, it is usually the second definition that they adopt, i.e. an industry operated and managed by manufactures. Let me pose a question here. Why is industrialization, i.e. rise of the share of manufacturing industry in national product or the enhancement of the industrial sector in a country's industrial structure, justified as policy target? To put it differently, why is it favorably viewed in the context of economic growth?

The answer to the above question is the higher forward linkage effect of manufacturing industry than that of, say, agriculture and service industries. Consequently, manufacturing industry has the higher employment creation effect than other industries. According to Hirschman (1958), if there is a specific industry which has particularly stronger linkage effect with the rest of economy, a developing economy can grow with a relatively small resources mobilization. He divided linkage effects into two: backward linkage effect and forward linkage effect. A backward linkage effect can be defined as an input-provision linkage effect. When a specific industry grows rapidly, it stimulates the production of the upstream industries. For instance, the increase in autonomous demand for automobile, a final product, generates induced demand for auto parts and components. And it continues to create additional demand for metal materials for automobile parts and components.

On the other hand, a forward linkage effect is observed when the output of a specific industry stimulates production of other industries as input. The increase in production of copper, row material, stimulates the production of wire and cable, which are both intermediate goods, which in turn leads to increase in the production of electric appliances, i.e. final goods.

Following this logic, Hirschman suggests that the industry with higher linkage effect should be promoted. More specifically, in an economy with demand shortage or excess supply, the backward linkage effect is quite significant while, in an economy with supply bottleneck or excess demand, the forward linkage effect is more important. With its income level lower than advanced countries, Asian economy is characterized by demand shortage. Therefore, backward linkage effect should be considered as an effective engine of growth in the region.

Input–output analysis shows us the magnitude of the backward linkage effect as an influence coefficient. The element *cij* of Leontief Inverse Matrix shows that output in the industry *i* increases due to the unit increase in final demand of industry *j*. When *j* is fixed, the total of *cij* changes as *i* is changed, which means the total production increase is caused by the unit production increase in the industry *j*. For instance, in case the industry *j* is automobile industry, if there occurred an increase of $ 1000 in the final demand for automobile, it induces the increase of $ 450 in the production of steel industry, $ 240 in the production of textile industry, $ 190 in the production of rubber industry and so on. Suppose that the total increase of the production amounts to $ 2300. Then the sum of Leontief inverse coefficient *i* is 2.3 ($ 2300 divided by $ 1000). The automobile industry's backward linkage index is, therefore, 2.3 in this example.

Each industry has specific value of backward linkage index. Let us call industry *j*'s backward linkage index *bj*. More developed economies have a tendency to show higher backward linkage index. At the same time, the economies which are more

open to the global economy show the lower backward linkage index. In order to standardize the index to facilitate comparison, the influence index is introduced. Average value of backward linkage index, when weighted by the total production of each industry, is the backward linkage index for whole economy. Let us call it *B*. Then the influence coefficient is derived by obtaining the ratio of *bj* to *B*. In the above automobile industry example, if the backward linkage index for the whole economy is 2.0, the influence coefficient is calculated to be 1.15 as 2.3 divided by 2.0.

In 1985 the Institute of Developing Economies/Japan External Trade Organization estimated the backward linkage indices for some Asian countries.[2] The most concise Input–Output Table was constructed with only 4 industry categories, namely agriculture, mining, manufacturing and services. Japan's backward linkage index of manufacturing was found to be 2.33, which was the highest among the four industries. In case of China, Korea, Taiwan, Indonesia, Malaysia, Philippines and Thailand, the highest backward linkage index was also found in the manufacturing industry. The only exception was Singapore, whose backward linkage indexes were 1.46 and 1.49 for manufacturing and services industries respectively.

These estimates endorse a view that industrialization is the engine of growth. If a government wishes to stimulate economic growth by purchasing products with government expenditure, it should concentrate in purchase of products of the manufacturing sector. It is because its spillover effect is expected to be the greatest.

Charts 1 and 2 below show Japan's influence coefficients in 2015 and 1985. Between these two years, the definition of industry classification was changed and the number of industries included is different (29 sectors in 1985 and 37 sectors in 2015). Chart 1 includes agriculture and mining as extract sector or the primary industry and 'industry' is represented by the manufacturing industries. Chart 2 includes service sector or tertiary industry.

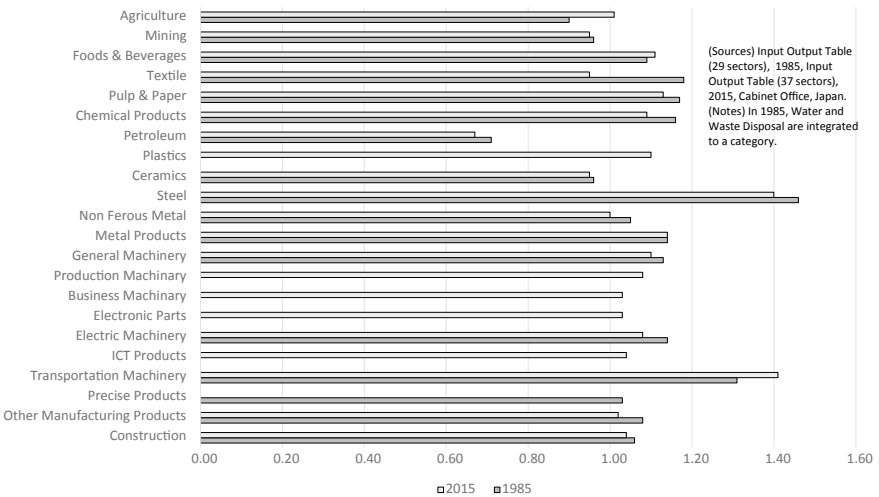

Chart 1 Japan's influence coefficient: Agriculture and industry

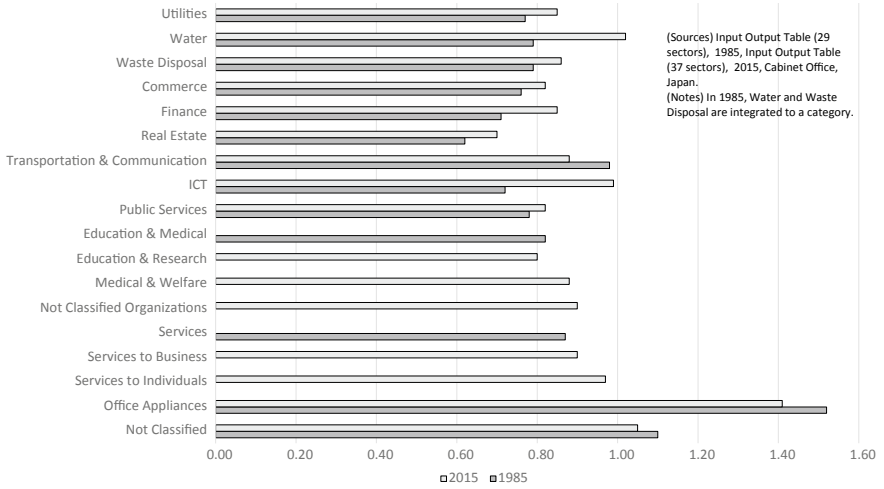

Chart 2 Japan's influence coefficient: Services

Looking at both charts, we realize that the highest influence coefficient is found in office appliances in service sector on Chart 2. In terms of products, various stationaries, office furniture and copying machines are classified as office appliances. Diversity gives this industry the highest spillover effect. In manufacturing sector, steel manufacturing shows the highest influence coefficients, closely followed by transportation machinery.

On the other hand, the lowest influence coefficients are observed in the petroleum and real estate industries in the manufacturing and services sectors, respectively. As weighted average of these indexes is unity, most of the industries classified to manufacturing sector, from food and beverages through construction in Chart 1, show influence coefficients higher than unity. The only exceptions were petroleum and ceramics industries in both year and the textile industry in 2015.

In Chart 2, only the water industry in 2015 exceeded unity, aside from office appliances industry and "not classified." In Chart 1, agriculture merits special attention. Although the influence index in 1985 was 0.9, it jumped up to 1.01 30 years later in 2015. It should be pointed out that this tendency was commonly observed in advanced economies including the United States and European countries. According to an Institute of Developing Economies study (1992), even in 1985, the agriculture's backward linkage index in the United States was the highest among the four industries covered by the study.[3]

As well as the aforementioned estimation by the Institute of Developing Economies, both of the above charts also justify mobilization of resources to manufacturing sector for economic growth. The tendency of high influence index in manu-

[3]The backward linkage indexes of agriculture, mining, manufacturing and services were 2.25, 1.37, 2.13 and 1.6 respectively in 1985. See Institute of Developing Economies (1992).

facturing in Japan is shared by other Asian economies, such as China, Korea, Taiwan, and Southeast Asian countries throughout the years. As pointed out earlier, however, Singapore has been an exception to this tendency.

1.2 Industrial Structure

There is another consideration that should be paid to industrialization. Following the traditional industrial classification, the production sector is divided into three categories: agriculture, industry and services. Since services were difficult to be traded internationally in early days, and since, according to some classical economic idea, services do not generate value added, this sector has been more or less neglected.[4] Between agriculture and industry, there is a noticeable difference in income elasticity of demand, which is defined as the ratio of the rate of change in the quantity demanded to the rate of change in consumers' income. As the consumers' income increases, or as economy grows, the quantity consumers demand also increases. However, each product has its own specific elasticity. Our experience tells us that income elasticity of industrial products is higher than that of agricultural products. When our income is doubled, for instance, we may purchase another automobile but may not order another lunch set. As services are regarded as non-tradable, this difference in income elasticity between agriculture and manufacturing has been a subject of discussion in international arena.[5]

If income elasticity is different in each industry, the factor of production should be input to the industry with the higher income elasticity. The movement of labor from agriculture to manufacturing industry and, subsequently, to services is a common phenomenon all over the world. This phenomenon represents the movement of labor force from the sector with lower wages to the sector with the higher wages. The difference between wages in the two sectors reflects the difference in income elasticity. Historically the movement of labor and other factors of production from agriculture to manufacturing industry has continued till today.

According to the experiential work of Clark (1940), the share of the primary industry in national products continues to decline over time and, adversely, the share of the tertiary industry continues to rise. Depending on the rates of the primary industry's decline and the tertiary industry's rise, the share of the secondary industry in national products at first rises and, subsequently, declines after it peaks out.

When the share of secondary industry peaks out, the economy is already not in the phase of industrialization, at least in the numerical sense. This phase is called "deindustrialization" in some economies. This phase is characterized by enhancement of services industry. As we will come back later, today's digitalization is about improvement of quality of products and innovation of the production process and

[4] Another reason for service sector to be neglected in the context of economic growth is the low value of its influence index.

[5] For classical discussion on this issue, see Prebisch (1959).

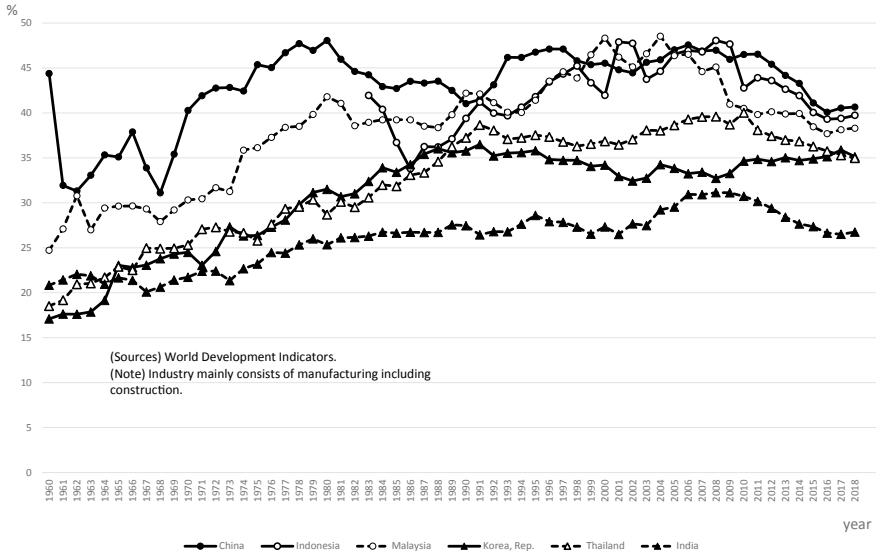

Chart 3 Share of industry in GDP (1)

they are not directly connected to the increase of production volume of the services. For instance, the fifth generation of the mobile networks, or 5G, will enable much more massive and much faster data communications than 4G. Nevertheless, value or market price of its product could be less than that of 4G. It should be kept in mind that discussion here is limited to the historical aspect of industrialization and its aftermath.

Charts 3 and 4 below show the share of manufacturing industry in GDP of Asian major economies. In Chart 3, trends in two economic giants, China and India, are shown but these two are in stark contrast. China is an inherently industry-oriented country with the ratio of industry higher than other countries. One of the reasons for low share of services industry in China's GDP is the Marxist idea in its economic development planning. Traditional Marxist economists would not believe that services sector generates value. Thus, at the planning stage, these economists did not think it rational to concentrate resources to produce services.

On the other hand, India is inherently a service-oriented country as evidenced by recent development of its software industry.[6] India turned to economic liberalization in 1991, but it has not affected its industrialization. In 2014, India launched a "Make in India" campaign to promote manufacturing and export of manufacturing products, but the share of industry actually declined. Chart 3 shows that manufacturing industry recorded the highest share in China's GDP, 47.7%, in 1978 when the Chinese government adopted the "reform and opening-up" policy. Since then, the share of manufacturing industry stayed at the level of around 40% for a quarter of a

[6]See Bhagwati (1984).

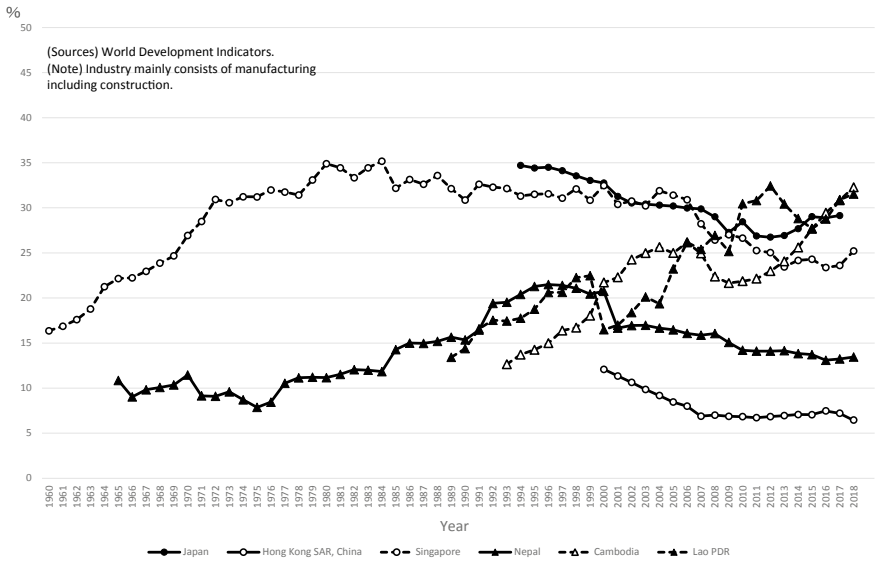

Chart 4 Share of industry in GDP (2)

century, but, recently, it started showing a declining tendency just like India. In the twenty-first century, China and India recorded the highest shares of industry in 2006 and 2008, respectively, after which both countries showed declining tendencies.

Indonesia and Malaysia also show a similar trend in the share of industry in respective GDPs. At the turn of the century, share of manufacturing industries in the two countries were around 45%, but in the 2010s they both showed a declining tendency.

As Chart 3 shows, Korea has not yet experienced high share of manufacturing industry in its GDP, contrary to general expectation. Despite its status as one of Asia's NIEs, the highest share of manufacturing industry in Korea was merely 36.5% attained in 1991, just a few years after the Seoul Olympic games in 1988. In the twenty-first century, the share of manufacturing industry in Korea's GDP has stayed at around the 35% level. It is in sharp contrast to the trends in Indonesia and Malaysia, and one of the reasons behind this contrast is the difference between an investing country and recipients of investment. Korea has actively exported its capital of manufacturing mainly to Asian economies, and this has consequently dampened the rise of the share of manufacturing in Korea. In contrast, Indonesia and Malaysia have been the receiving side of foreign capital including that of Korea.

Thailand has comparative advantage in agriculture, which has made its path of industrialization different from that of Indonesia or Malaysia. The share of manufacturing industry in Thailand's GDP has not risen since the 1990s in sharp contrast to its two Southeast Asian neighbors.

The most conspicuous tendency found in Chart 3 is the decline of the share of manufacturing industry in Asia after the global financial crisis toward the end of

the first decade of the twenty-first century, excluding Korea. The industrial sector, mainly manufacturing sector plus construction in these economies, has been eclipsed by the newly-grown service sectors on the basis of digital devices such as call center, car sharing, and courier and delivery services.

The shares of manufacturing industry in all economies shown in Chart 4 have not exceeded 35% in the twenty-first century. Actually, India could be moved to Chart 4 since the country shares the same tendency. In order to be compared with China, however, India is posited in Chart 3 instead. Those countries excluding some in Chart 4 are facing digitalization bypassing the phase of industrialization.

In case of Japan, since limited statistical sources do not allow us to refer to its situation prior to the 1980s, the information on Chart 6 shall be supplemented in the later section of this paper. Confronting the trade frictions, particularly with the United States, since the 1950s, Japanese companies were searching for the production sites all over the world. Trade frictions with the developed economies and the pressure from Asian NIEs, which were catching up quickly with Japan, urged these Japanese companies to pursue horizontal division of labor with Asian neighbors. Consequently, similar industrial products began to be manufactured in Japan as well as in surrounding Asian countries. This strategy of Japanese companies has had a long-term effect of lowering the share of industry in Japan's GDP.

Although Hong Kong and Singapore are both classified as Asian NIEs together with Korea, their experiences have been quite different from each other. Hong Kong's share of industry in its GDP is among the lowest in the world, while Singapore's path has been similar to that of Korea's as shown in Chart 3. While Korea has maintained the share of industry at around 35% level in recent years, Singapore's share in the same period has been around 25%, dropping from the peak year level of 35.2% in 1984. These facts certify that Hong Kong and Singapore are inherently service-based economies, making us expect that these economies can smoothly transform their structures to be digital-oriented.

Nepal is about to enter the digitalized economy stage, without experiencing much of industrialization. After the share of industry in its GDP reached the highest level of 21. 5% in 1996, it dramatically dropped to the level of approximately 15%. Compared with the economies in Chart 3, 21.5% is lower than any of them in the past 50 years.

Cambodia and Lao are amongst the rapidly industrializing economies which resemble Thailand and Korea in the 1970s.

From the viewpoint of industrialization, Asian economies can be classified into several categories. The first group includes China, Malaysia and Indonesia, which experienced industry-led growth. The second group includes India and Nepal, which have not experienced highly industrialized economy. And the last group includes Cambodia and Laos, which are currently in the process of industrialization. Other economies have mixed characteristics of the three types.

From above observations on the share of industry in each country's GDP, it can be summarized here that Asian economies with various background of industrialization are entering digitalized economy. The effectiveness of the experience of industrialization in each country will be discussed below.

1.3 International Aspect of Industrialization

From the viewpoint of trade, we can clarify the stage of industrialization of various Asian countries. Charts 5 and 6 show the competitiveness index of manufacturing

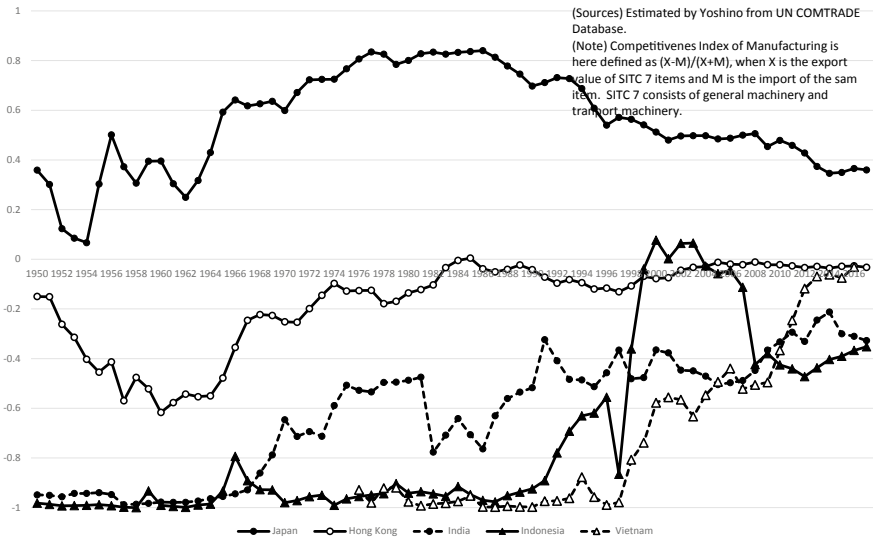

Chart 5 Competitiveness index of manufacturing (1)

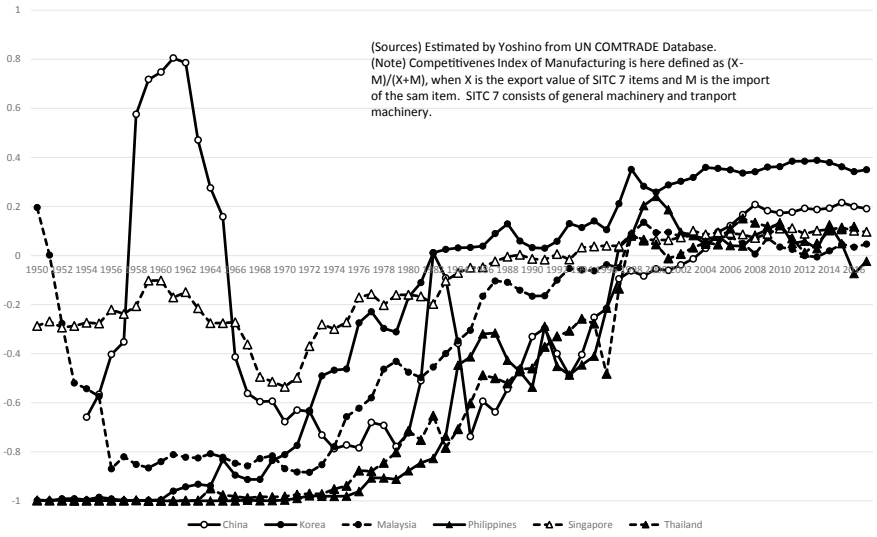

Chart 6 Competitiveness index of manufacturing (2)

goods. The index is defined as the ratio of the difference between export and import to the sum of export and import.[7] When X represents export value and M import value, the index is obtained by (X-M)/(X + M). When export exceeds to import, the index becomes positive, in which case the economy is interpreted to have advantages in this particular item. On the other hand, when the index is negative, the economy is judged to have disadvantages in the item.

In drawing Charts 5 and 6, I have relied on UN COMTRADE Database in order to maintain consistency among countries and time. The Database is constructed on the basis of Standard International Trade Classification or SITC. This classification applies to all items traded internationally and gives each item a specific number. The competitiveness index is estimated on the basis of only SITC 7 category, i.e. general machinery and transport machinery, because they have all the properties of a manufacturing product.

Four economies in Chart 5 (Hong Kong, India, Indonesia, and Vietnam) are economies which have not experienced industrialization. Japan is an exception since it has had comparative advantage in manufacturing. After its policy conversion from vertical trade to horizontal trade orientation in the 1980s, Japan's competitiveness index has shown a declining trend.

Hong Kong is also an exception from the viewpoint of trade structure. It is classified as one of the Asian Newly Industrializing Economies (NIEs) but its trade is characterized by entrepot trade as gateway to and from China.

Indonesia showed positive index immediately after the Asian financial crisis erupted in 1997. Except for that short period, Indonesian index has always been negative.

India's index shows an increasing tendency. It had started economic development with import substitution policy after independence in 1947 to be followed by economic liberalization and deregulation in 1991. However, in terms of international trade, it has not yet succeeded in industrialization until today.

Vietnam is a late comer in the Asian economic circle and it has not succeeded in industrialization. Even after 1986, when it introduced the Renovation policy or Doi Moi, the export of manufacturing products remained negligible. After the Asian financial crisis, however, Vietnam's index started to rise and, in twenty years' time, manufacturing export has become almost equal to its import.

In Chart 6, six economies are depicted. All of those six economies succeeded in attaining the positive value in the last two decades of the twentieth century, signifying that they all succeeded in industrialization.

Cases of Korea and Singapore, two of the Asian NIEs, are noteworthy. Korea's index turned positive in 1982, which it has maintained thereafter. In case of Singapore, its index first turned positive in 1989 and, despite a brief period of fluctuation in 1992–93, it has maintained the positive index since 1994. The term Asian

[7]There are some other alternative formula, including Revealed Comparative Advantages and Competitiveness Index. This (X-M)/(X + M) index adopted here is the simplest one among them.

Newly Industrializing Countries or Asian NICs was introduced by the Organization for Economic Cooperation and Development (OECD) in 1979.[8] Although both economies were classified as Asian NICs at that time, they have not attained competitive advantages in manufacturing in terms of international trade. Indexes of Singapore have not exceeded 0.2, while that of Japan has not gone below 0.3.

China shows a highly unusual path. Between the end of the 1950s and the beginning of the 1960s, in the wake of the Great Leap Forward policy, its competitiveness index soared because of strict import restriction. It should be pointed out that the Chinese government adopted the textbook- style import substitution policy. From 1966 onwards the index turned negative until 2003, when China emerged as "the world's factory." Nevertheless, its index has stayed at around 0.2 level, far below that of Japan.

Malaysia, Philippines and Thailand are characterized as middle-sized Southeast Asian emerging economies and their competitiveness indexes turned from negative to positive in 1998, 1997 and 1998, respectively. Needless to say, the main cause of this change was the Asian financial crisis in 1997. The crisis made these economies deficient of import payment, while their exports to economies outside Asia that were not hit by the crisis remained quite stable. In the twenty-first century, although the indexes of these three economies continued to fluctuate between 0.1 and subzero, they appeared to stay quite stable within that range, which was below China's post-2006 index.

Before concluding the discussion on international aspect of industrialization on the basis of Charts 5 and 6, some word of caution is in order on the specification of the competitiveness index. First, theoretically the world trade is to be balanced. This means that, if some economies' indexes are positive, at least some other economies' indexes must be negative. Although trade in manufacturing goods is not closed in Asia, there are close connectivity and networks within the region. That means all economies in Asia cannot have same sign of index (positive or negative). For instance, Charts 5 and 6 show that, in recent years, Japan and Korea recorded the highest index and that coincided with of negative or lower positive indexes of other economies in the region. Second, while the present paper relies on SITC 7 items for comparison, it is only one of the alternatives available and, in fact, other studies use other alternatives. Also, competitiveness index as well as Revealed Comparative Advantage index have some varieties. As stated at the outset of the discussion, I chose the simplest alternative for the present analysis.

From the viewpoint of transformation of Asian economy, following tentative conclusions can be drawn.

First, Indonesia, India and Vietnam in Chart 5 show a possibility that they are experiencing the "leaping frog phenomena," i.e. these three economies may establish digital-oriented economy symbolized by AI, Big Data, etc., without experiencing competitive advantage in manufacturing. In Indonesia started digitalization

[8] See, Marris, Stephen, 'The Case of the Newly Industrialising Countries (NICs),' *OECD Observer*, Vol. 1979, Issue 1, pp. 9 & 10. At the initial stage, NICs consisted of Brazil, Mexico, Korea, Taiwan, Singapore, Hong Kong and some of South European countries.

with establishment of Go-jek and Lazada and, presently, it stays at the stage of motorbike hailing and E commerce.

India is well known as an inward-looking economy. Domestic market is so huge that manufacturers such as Tata Motors and Bajaj Auto basically concentrate in the Indian market. If India succeeds in establishing digital business beyond call center, it will become another country which achieves it without experiencing the competitive advantage in manufacturing.

In Vietnam, whose index is approaching zero in recent years, Korean mobile phone manufacturer, Samsung, has greatly contributed to increase of Vietnam's export of manufacturing products. If Vietnam can transform its economy to a digital-oriented one, it, too, skips the experience of becoming a manufacturing base. Thus, these three economies may truly demonstrate the "leaping frog phenomena," utilizing the advantage of backwardness.

Second, Japan and Korea, which show the highest index in recent years, seem to have difficulties in transforming their economies and this is, ironically, because of the successful experience in manufacturing. They may be facing the disadvantage of advancement. Especially Japan is difficult to mobilize the resources from manufacturing to other sectors because the manufacturing has been well established as suggested in Charts 1 and 2.

2 Change in the 21st Century

2.1 Impact of Mobile

After reaching the peak of industrialization, Asian economy entered a new era. Phenomenal spread of mobile phone changed mode of life and economic activities in Asia. The significance of mobile phone becomes clear when its subscription rate is compared with the registration rate of automobile, which is a typical industrial product. Toward the end of 2017, the rate of registration of automobile, which is obtained by dividing the number of passenger cars registered by total population, are estimated 48.7% for Japan, 13.3% for China, 35.0% for Korea, 13.4% for Thailand, and 5.4% for Indonesia.[9] In contrast, mobile phone subscription rate in the same year exceeded 100% for all of these countries. Of course, mobile phone is a totally different product from automobile in terms of its price and usage, to name a few. Nevertheless, it is noteworthy that such high mobile subscription rates were attained only within 30 years of the introduction of 2G digitalized technology. It took automobile more than 100 years after Ford introduced conveyer line for mass production of Model T to attain today's registration level.

[9]For data of automobile registration, see "World Vehicles in Operation by Country, 2014–2018," on Wards website, https://wardsintelligence.informa.com/, last accessed on January 23, 2020. For data of total population of each country, I rely on the World Development Indicators on https://databank.worldbank.org/source/world-development-indicators, last accessed on April 3, 2020.

In a developing country such as Laos, mobile phone became popularized ahead of the fixed line telephone services, which should be called a technological 'leap-frog' phenomena. According to some statistics, the mobile phone subscription rate in Laos reached 86.3% in 2011.[10] In the same year, ratio of contracted fixed phones to total population in Laos was only 1.7%. Laos refrained from massive investment in wire network for fixed telephones. Of course, the wire network is used for Asymmetric Digital Subscriber Line (ADSL), optical fibers and other broad band services and they are indeed available in Laos, too. However, much more telecommunications are conducted via wireless devises. For a population-scares country like Laos, the mobile phone has been helpful in allowing it to forgo investment in construction of telephone wire network. Comparing the urban population ratio to total population in 2018 with other countries, Laos' s was only 35.4%, while Japan 91.6% and China 59.2%.[11] In Japan and China, investment in wire network could be profitable, but in Laos, wire lines connect only a limited number of users, making the investment unprofitable.

For Laos, the saving by forgoing investment in the old-fashioned equipment is the benefit of 'advantage of backwardness.' Latecomers can benefit from the lessons of front runners. This way, they can minimize uncertainty and risks when choosing activities.

Table 1 shows another example of advantage of backwardness. In an advanced country, people naturally have their personal bank accounts. In developing countries, however, people are reluctant to open bank account and, instead, they are inclined to rely on unofficial, and sometimes illegal, monetary intermediators. It is common in Asia that rural people convert their savings to such precious metals as gold necklace instead of saving in their bank accounts. This is because real commodity hedges against the risk of inflation and, above all else, because these people do not like to bear the transaction cost, search automatic teller machines (ATM), visit bank during business hours, and fill out forms. The right column of Table 1 shows the rate of account holders to the total population, which is apparently related to per capita income.

In Hong Kong, Japan, Korea, Singapore and Taiwan, more than 90% of total population above 15 years old have their own bank accounts and, thus, these countries are categorized as advanced countries here. Among them, both Japanese and Taiwanese adults seem to be least familiar with digital devices, judging from the ratios of the mobile phone and internet users in both countries, which are lower than 35%. In contrast, it is remarkable that only 21.7 and 30.8% of adults in Cambodia and Vietnam, respectively, hold bank accounts, while as much as 27.3 and 29.9% of the account holders are mobile phone/internet users, respectively, in these countries, which are quite close to the ratios in Japan and Taiwan. This is nothing other than

[10] From *ITU World Telecommunication/ICT Indicators Database*. https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx, last accessed on June 13, 2020.

[11] From World Development Indicators, https://databank.worldbank.org/source/world-development-indicators, last accessed on April 3, 2020.

Table 1 The ratio of mobile phone/Internet users and bank account holders in total population in Asian countries (2017) (%)

	Among total population over 15	Among account holders over 15	Account holders/Total population
Cambodia	5.9	27.3	21.7
China	39.8	49.6	80.2
Hong Kong	43.4	45.4	95.6
India	5.3	6.6	79.9
Indonesia	7.7	15.8	48.9
Japan	33.3	33.9	98.2
Korea	67.1	70.7	94.9
Lao PDR	1.6	5.5	29.1
Malaysia	32.6	38.2	85.3
Myanmar	1.1	4.2	26.0
Nepal	4.0	6.9	57.8
Philippines	7.0	20.2	34.5
Singapore	48.7	49.7	97.9
Taiwan	32.6	34.6	94.2
Thailand	17.4	21.3	81.6
Vietnam	9.2	29.9	30.8

Sources Yoshino Compiled from Global FINDEX Index 2017
Note The ratio of account holder is obtained by dividing figures on the first column by those in the second column

the advantage of backwardness. Many of Cambodian and Vietnamese adults do not even have passbook.

Advantage of backwardness is expected to manifest itself in various fields of Asian industrial development. In the process of industrialization, the major actors are shifting from light industry, such as textile and processed food, to heavy industry such as general and transportation manufacturing. Almost all the Asian countries have textile and processed food industries but few have local automobile manufacturers. Vietnam started to produce the so-called national car 'Vin Fast' in 2019, but any cars have been manufactured in Cambodia. These countries may be able to leap the gap of industrialization, i.e. they may skip the stage of heavy industry to leap from light industry stage to the digital economy. And at the gateway to the digital economy awaits e-commerce.

2.2 Development of E-commerce

As in other areas of the world, Asian people are also becoming to be attracted by e-commerce. At this moment, it is premature for anyone to measure its effect on economic growth and human welfare. If people purchase commodities in the economy making good use of e-commerce more than in the economy without e-commerce, it can be said e-commerce stimulates to consumption expenditure. If e-commerce changes people's habit of going to shopping mall and bringing back their purchases to that of ordering items by the Internet and having their purchases delivered by courier, it creates jobs for couriers, which should contribute to economic growth of the country. E-commerce makes it easy for people to purchase more items than going to a shopping mall. It should also broaden the variety of shopping items. If e-commerce allows a customer to select an item from wide alternatives, it enhances human welfare. Even if a customer ends up choosing the same item as in a shopping in a mall, his level of satisfaction will be higher due to more items listed for e-commerce.

The net economic effect of e-commerce is unknown yet because it also has negative effects. The cost for delivery or wrapping, for instance, does not generate if a consumer goes to the market on foot. Cost of consumer's search for shopping items is not confined to time. Virtual shopping mall is affected by reputations among its users, which it has to keep up with. This is a cost that is not required in case of a real shopping mall.

Although there are both positive evaluations and negative evaluations, it appears that at least Asian people prefer e-commerce to shopping at real market. Judging from the fact that even those people who can go to nearby market easily still prefer to buy commodities via the Internet, it should be judged that e-commerce has already come to be regarded as an appropriate shopping mode.

Dolfen et al. (2019) estimates that e-commerce yields consumers an equivalent of a 1% permanent boost to their consumption, or over $ 1000 per household. It also refers to gains arising from saving traveling expenditure.

In Asia, as in the other areas of the world, e-commerce shopping malls are divided into two categories; worldwide malls and local specialized malls. Worldwide malls include Amazon.com, Facebook and LINE, which are seriously competing with local online malls. Each country's and city's consumers prefer local malls to worldwide malls. For instance, in China Alibaba group including Tmall and WeChat conforms the largest e-commerce platform in China. Being established in 1999, it repeated trials and errors and mergers and separations[12] until it finally reached today's status. Each economy has similar local players, including Rakuten in Japan, Tokopedia in Indonesia, and Shopee in Vietnam, to name a few. Some of them are operated across

[12] At its establishment, Alibaba.com was specialized in B2B (business to business) e-commerce marketplace. Tmall was a domestic C2C (consumer to consumer) marketplace, taking advantage of the Alipay settlement system. Taobao was established in 2003 as B2C (business to consumer) platform and it has by now attained 80% market share in China. Yahoo! China was originally established as a member of Alibaba group, but it closed its search engine services in 2013. Alibaba group, on its part, acquired Lazada in 2016. See, Ito (2019).

the border. Lazada was established by a German company, Rocket Internet, in 2011 and today it is operated exclusively in six Southeast Asian countries; Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Lazada is often called 'Amazon.com in Southeast Asia.'

Compared with the United States and Europe, Asian e-commerce is much more diverse and versatile. Major Asian economies have their own specific e-commerce platform as well as worldwide platforms such as Amazon.com and Facebook. But these worldwide platforms have not taken the leadership in the sector in these countries.

Another characteristic of Asian e-commerce is that it has been dominated by general platforms. In some European countries such as the United Kingdom, there are item-specific platforms; e.g. Marks and Spencer for apparel, Dunelm for furniture, etc.

With its 1.4 billion population, China is the world greatest e-commerce market. In China, the ratio of e-commerce to the total consumers' purchase of consumer goods and services exceeded 18.4% in 2018, while it had been 12.6% in 2016.[13] Chinese e-commerce has been led by the Alibaba group, but even now there remain primitive consumers. Yulia et. al. (2019) wrote that geographical diversity has made Chinese e-commerce development complicated. But this diversity, at the same time, becomes China's advantage over other Asian economies. In China, there are thirteen cities which have more than ten million population.[14] Concentration of people makes it less costly to deliver commodities. Chinese e-commerce and courier services are so profit-seeking that they would not provide universal services. Needless to say, delivery conditions are far better in urban areas compared to remote areas.

Applying Chinese diversity to other Asian economies, it has to be said that being small is disadvantageous. In Laos and Cambodia, for instance, because of their low urbanization ratio, delivery cost tends to be extremely high. Phnom Penh, the capital and the largest city in Cambodia, still has only two million population. In Laos, Vientiane, its capital and the largest city, also has only seven hundred thousand population. Even in the largest cities in these Asian countries, courier services cost very high and one should only imagine how much worse the situations in the rural area of these countries are.

United Parcel Service (UPS) of the United States was established as a domestic courier service provider in 1907. In the United Kingdom, Royal Mail, which was established in the seventeenth century, started domestic courier services in 1883. As for international courier services, DHL and FedEx began their operations in 1969 and 1973, respectively, in the United States. In Asia, courier services started far behind these front runners. Southeast Asian countries first relied on foreign courier service

[13]From TMIC-NRI White Paper on EC Market in China (in Japanese, Chugoku EC Shijo Hakusho), https://www.nri.com/-/media/Corporate/jp/Files/PDF/knowledge/report/cc/mediaforum/2019/forum282.pdf?la=ja-JP&hash=6D442C66B1EF397839B645DD18D4EBD5FC9EC4B7, last accessed on June 14, 2020. TMIC and NRI stand for T-Mall Innovation Center and Nomura Research Institute, respectively.

[14]China Statistical Yearbook 2019.

providers such as UPS and DHL because of lack of knowhow on logistics.[15] For these countries, immature logistic system was a physical impediment to e-commerce. To them, development of domestic courier services has been, so to speak, a biproduct of e-commerce.

In China, Japan, Korea, and some Southeast Asian countries such as Singapore, universal postal services have been firmly established and post offices are committed to deliver parcels. In other Asian countries, postal services are not yet universal.

According to the data of Universal Postal Union (UPU), percentage of the population who have mail delivered home in 2018 varied from country to country; While it was 100% in India and 99.9% in China, it was 60% in Myanmar and only 5% in Cambodia.[16] Today, the Asian governments are eager to allow private companies to enter mailing delivery and courier services in their countries.

If the above percentage can be used as an index of development of the nation-wide postal infrastructure, we may be able to obtain a couple of insights from it. The countries with well-developed postal infrastructure might be in danger of redundant infrastructures because, on top of already well-developed postal infrastructure, they are adding private service providers. On the other hand, in case of the countries without mature postal infrastructure, they may end up having heteronomous distribution systems. If the systems in these countries become dominated by profit-hungry private providers, nation-wide distribution system of these countries may become unbalanced and malformed. The leap-frog phenomena are observed in such countries. More concretely, these countries never bore the cost of developing the distribution system and, instead, allowed international forwarders to take the risk, making them bear the cost of construction of the nation-wide distribution network.

Table 2 is compiled on the basis of the United Nations Conference on Trade and Development (UNCTAD) database. Focusing on B2C e-commerce transactions, "the index measures an economy's preparedness to support online shopping."[17] The highest ranked Singapore merits special attention because the size of its national territory is the smallest among the countries listed on this table. E-commerce services which target domestic market is limited to such commodities as fresh grocery and fish. Almost all the available services are also provided to the international market at the same time. Singaporean consumers are free to choose international e-commerce companies of their choice. A similar situation is also observed in such small-sized economies as Hong Kong, Mongolia, Laos and Cambodia. On the other hand, large-sized countries like Korea, Japan, China, India and Indonesia have e-commerce companies which are specialized in domestic transactions.

Values of Table 2 can be said to positively correlate to per capita GDP in most cases. However, secure Internet servers index, which is an index of contemporary

[15]For the case of Vietnam, see Banomyong et al. (2020).

[16]UPU database, https://www.upu.int/en/resources/postal-statistics/query-the-database.html, last accessed on June 2, 2020. Since this database relies on self-report system, cross sectional and time series comparison may be called for.

[17]UNCTAD B2C E-commerce Index 2019 (UNCTAD Technical Notes on ICT for Development No. 14), p. 1. The index consists of four indicators, i. e., account ownership at a financial institution, individuals using the Internet, postal reliability index and secure Internet servers.

Table 2 B2C E-comerce Index, 2019

Country	World rank (2019)	Index value (2019)	Secure internet servers index (2018)	Postal reliability score (2018 or later)	Per capita GDP (2018) (US$)
Singapore	3	95.1	97	97	64,582
Hong Kong	15	90.5	85	92	48,676
Korea	19	89.4	67	99	31,363
Japan	21	87.6	81	86	39,290
Malaysia	34	81.9	75	86	11,373
Thailand	48	73.5	61	94	7274
China	56	68.8	55	85	9771
Vietnam	64	61.1	66	77	2567
Mongolia	72	57.4	66	47	4122
India	73	57.0	48	65	2010
Indonesia	84	50.1	64	48	3894
Philippines	89	48.6	43	57	3103
Nepal	112	35.4	48	14	1034
Laos	113	35.1	30	56	2542
Cambodia	122	30.8	41	20	1510
Myanmar	126	26.8	24	26	1326

Sources Per Capita GDP is from World Development Indicators 2019, others are from 'Table 5. UNCTAD B2C E-commerce index, 2019, World' in UNCTAD B2C E-commerce Index 2019

infrastructure, and postal reliability score, which is an index of traditional infrastructure, show inconsistency in some countries. In Mongolia, Indonesia, Cambodia and Nepal, the Internet index is higher than postal service index. These countries may have leaped like a frog, i.e. they are enjoying the benefit of digital network without investing in construction of conventional infrastructure. On the other hand, since Thailand, China and India have invested in construction of traditional infrastructure, they had to bear the burden of investing in the transformation from conventional to digital network.

2.3 New Forms of Enterprises

As the age of industrialization comes to a close, new forms of enterprises have emerged. They are called startups and unicorns. Startup is a newer form of business to succeed venture-backed company which is defined as a company supported by venture capital. The idea of venture capital dates back to the nineteenth century but,

today, it is typically perceived as investors who offer their funds to the companies specializing in the information and communication technology (ICT). A startup, on the other hand, is characterized by entrepreneurs with high ambition to enlarge new business. Its business environment is so full of uncertainty that their probability to survive may not be high. And among startups those which are privately owned and valued at over US$1 billion are specially called unicorns.

A startup is distinguished from conventional small to medium-sized company by several points. A startup, for instance, proposes a new business model mainly related to ICT. Traveloka in Indonesia provides online ticketing services for airlines and hotels. When it was established in 2012 by Ferry Unardi and his friends, who had returned home from the United States, there already had been companies which provided similar service. Its value added is generated from exclusive services that do not require customers to use credit card for settlement. Since few have credit cards in Indonesia, Traveloka allows settlement of the transaction with money transfer through banks and cash payment at convenience stores. Klook is a Hong Kong-based online ticketing startup which was established in 2014. Its advantage is simplicity in its usage via mobile phone. Using QR codes, customers can apply to discounted admission ticket of theme parks. Customers are provided with photo or movie images of sightseeing spots. Mafengwo is Chinese online ticketing company established in 2014, specializing in Free Independent Travelers (FIT). It constructs customers' community on its webpage and facilitates them to exchange information on the site.[18]

Many of startups depend on their technological advantage. An Indian startup, BharatPe, has know-how on integration of QR codes, which is a great advantage in India where various QR codes are posted in front of cash register at each convenience store. If a convenience store adopts QR codes, both customers and stores can save time and sidestep inconveniences. Tricog, a Singapore-born medical startup, is endowed with technology to analyze electrocardiogram by AI. The CEO and co-founder, Charit Bhograj, is an India-born medical doctor who had previously operated in India before he co-established Tricog Health Pte. Ltd. in Singapore with another medical doctor. The company collected over million cases of data on heart disease for AI and converted them into its business asset.[19]

Of the above-introduced startups, BharatPe and Tricog still remain startups, while Traveloka, Klook and Mafengwo turned to unicorns. Table 3 shows the number of Asian unicorns which are hopeful to lead the economic progress in respective countries after the end of the industrialization era. According to the original dataset, 477 unicorns are listed all over the world. Asia has 168 unicorn companies, which is 35.2% of the world total. Breaking them down by country, China has 122 such companies, which is 72.6% of the Asian total. Considering their levels of economic development, it has to be said that Japan and Singapore remain backward in this field.

[18]For Indonesia, see, Das et al. (2018) and Hinrich Foundation (2019).

[19]See, Subrahmanya (2017).

Table 3 Unicorns in Asia (Number of copany, as of June 2020)

Industry economy	China	Hong Kong	India	Indonesia	Japan	Korea	Philippines	Singapore	Total
E-commerce and direct-to-consumer	24	0	3	2	0	3	0	0	32
Mobile and telecommunications	14	0	2	0	1	1	0	1	19
Auto and transportation	13	0	2	0	0	0	0	1	16
Artificial intelligence	12	0	0	0	1	0	0	1	14
Supply chain, logistics, and delivery	7	1	5	1	0	0	0	0	14
Fintech	4	1	4	1	1	1	0	0	12
Hardware	11	0	0	0	0	0	0	0	11
Internet software and services	9	0	2	0	0	0	0	0	11
Edtech	8	0	1	0	0	0	0	0	9
Health	6	0	0	0	0	1	0	0	7
Travel	3	1	1	1	0	1	0	0	7
Consumer and retail	4	0	0	0	0	1	0	0	5
Data management and analytics	2	0	0	0	0	0	0	0	2
Cybersecurity	1	0	0	0	0	0	0	0	1
Other	4	0	1	0	0	2	1	0	8
Total	122	3	21	5	3	10	1	3	168

Source Yoshino compiled from CB Insights, *Full List of Billion Dollar Companies* (https://www.cbinsights.com/research-unicorn-companies accessed on June 25, 2020)

The decision whether a company should remain a unicorn or not depends on, firstly, its fund procurement strategy, secondly size of the market it serves its products and services, and, thirdly, the structure of the target market. If a company judges that it should become listed in the stock market to take advantage of stable flow of fund, it should no longer remain a unicorn. Other, non-Chinese companies are equipped with access to efficient and stable capital market. These companies have less incentive to remain unicorns.[20] Market size is an important variable when a unicorn plans to develop global market. In case of Mafengwo, customers feed their information in the Chinese language, linguistically limiting its market. It divides the world market with Airbnb in the United States, OYO Rooms in India etc. Since Chinese market is inherently huge, if unicorns have to operate only for the domestic market, they could still survive. In some industries, unicorns which were born in small-sized economies find it imperative to go outside, in which case they naturally face the walls of regulations and laws regarding international operation. The important determinant of the market structure is the competitors. For Klook, for instance, Airbnb and Booking.com are its competitors and it is quickly losing its advantage in using QR codes and displaying attractive photos and movies over its competitors.[21]

Thus, while the number of unicorns in an economy is not necessarily a direct index of rigor and prosperity of economy, it may still suggest the future image of that particular economy. As the era of industrialization comes to a close, digital-related economy is believed to become the next engine of growth. However, as far as Table 3 can tell, major unicorns appear to be concentrated in distribution, communication and transport businesses. It also appears that artificial intelligence, which may be the core of digital transformation, is more for established big businesses rather than unicorns. "Edtech" and health, which are directly tied to human welfare, do not appear to be prioritized businesses for unicorns.

As discussed in previous sections, mobile (devices?) have become a necessity for people's life today but it is only a substitute for mail. The net effect of its economic contribution seems to be limited. Nevertheless, its contribution to enhancement of human welfare is estimated to be huge. In this sense, it can be said to be similar to e-commerce, which is a substitute for shopping in the malls. Delivery of purchases through e-commerce by courier services creates employment but it may also lead to potential waste of labor. Although e-commerce seems to enhance human welfare, its net economic effect seems to be limited. The disparity between contribution to people's welfare, on the one hand, and economic performance measured by value added, on the other, is the matter to be discussed in the future.

[20] Honjo (2017) discussed the Japanese companies' decision on fund procurement from the viewpoint of technology.

[21] See, Jinzhi and Carrick (2019).

3 Conclusion

The first half of the present paper examines the closing of the era of industrialization, including why the industrialization has been prioritized as a policy target and why its accomplishment has been highly valued. The industry centered around manufacturing has high linkage effect, i.e., a unit of increase in final demand in the industrial sector induces more total productions in all sectors than any other sector. In turn, a unit of increase in final demand in the digital sector, such as e-commerce, telecommunications via mobile phones, and car hailing apps, has linkage effect.

As the share of industry in GDP declines, the linkage effect of whole economy also declines. While digitalization may dampen the economic rigor, people's economic welfare unmistakably increases with progress of digitalization. But, on the other hand, production increase is not easy to accomplish. Thus, disparity between welfare and production, one of the classical issues in economics, will continue to persist until a new welfare indicator independent of GDP is developed. In the course, when the process that digitalization departs from economic growth, the so called 'leapfrog' phenomena emerges. In Asia, developing countries such as Cambodia could enjoy digital devices without going through mature industrial development.

In the latter half of the present paper, current situation of digitalization in Asia is examined. At this point, it is beyond any doubt that mobile phones, e-commerce, and car hailing services have made people better off. However, it should be noted that these changes are accompanied by conventional economic activities. The delivery courier services, for instance, are complimentary with e-commerce. Similarly, driving services and automobiles are necessary for car hailing services. The effect of introduction of digital devise remains marginal.

In Asia, the wave of digitalization has not gone beyond distribution, communications and transport. Among the digitalization businesses, e-commerce has shown the most remarkable development. Digitalization gives rise to new forms of enterprises, i.e. startups and unicorns. Their permeation across countries and industries testifies that the upheaval of Asian business has been just started.

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Sustainable Employment Relations in Nepal: Beyond the Rhetoric, Ideal and Rational Human Resource Management

Dev Raj Adhikari

1 Introduction

Different forms of employment relations (ERs) emerged over the decades. During 1930–1950 many instances of exploitation of labor appeared. Subsequently, a labor relations (LRs) movement in the presence of unions and collective bargaining emerged and remained successful during 1935–1960 (Kochan and Chappelli 1984). In the late 1950s and early 1960s, the influence of trade unions reached to the extent that has created pressure in the role of personnel management (PM). In the 1950s, industrial relations (IRs) developed as a distinct area of study at universities. In the seminal work of John Dunlop (1958) 'Industrial Relation System', he describes that the IR system contains three groups of actors: workers and their organizations, managers, and their organizations and the government agencies concerned with the workplace (Kaufman 2004). The interaction of these actors determines the scope of the LRs. A conflicting interest and role of unions and personnel managers evolved in the US during the 1950s and 1960s. Drucker (1961) explains this situation stating that the tasks of personnel managers were managing worker and work, maintaining individual files on workers, imparting house-keeping jobs, and heading off or settling trouble from the union. Realizing this troubling situation, he suggests that "effective management must direct the vision and effort of all managers towards a common goal (269)." After Drucker, McGregor (Weisbord 1990) was perhaps the first psychologist to emphasize the strategic importance of personnel policies such as congruent values, cultures, procedures, systems, and training. He argued that human resource (HR) policies and programs must integrate with business objectives and employees should be involved to achieve those objectives (Armstrong 1990). Dessler (1997) states that human resource management (HRM) is becoming a more integrated part of every manager's job and thus, no matter whether one is a supervisor or president,

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sales manager or production managers, he or she should have HRM skills. From this discussion, it appears that the traditional role of PM (defined as a specialist function) has changed and HRM is the responsibility of all managers whether he/she is production or marketing or finance manager. The reason might be that every manager has to work in and around the people in the organization.

HRM has been a widely debated area in Anglo-Saxon literature in the last three decades. Much of the new enthusiasm for HRM has been credited to the publication of some important books in the early 1980s, which describe the importance of mutuality of culture and workers for the success of an organization. The books, *The Art of Japanese Management*, written by R. Pascale and A. Athos in 1981, and *In Search of Excellence*, authored by T. J. Peters and R. Waterman in 1982, sold in vast numbers. Pascale and Athos found that shared values of management and workers were the secret of Japanese success (Legge 1995). Similarly, Peters and Waterman named 43 successful companies in the US, which were driven by the managers' values and achieved productivity by paying close attention to the needs of their people (Koontz and Weihrich 1988).

The emergence of the new HRM theory and practice in the 1980s followed a persistent pressure on US industries in the 1970s from inside and outside competitors. There was an urgent need to gain competitive advantage revitalizing industries' productivity and quality (French 1986) and to minimize the effect of challenges posed by the process of globalization, rapid technological advances, shorter product lifecycles, and changing customer and investor demands. (French 1986; McKenna and Beech 1997). Prompted by these challenges, American business has begun to place greater emphasis on the management of human resources to improve productivity and quality and thus to be competitive internally and externally. By the early 1980s, some US scholars were writing about HRM and devising models and explanations for its emergence as a branch of knowledge to replace PM. Among the most important of these authors are Fombrun et al. (1984) present matching model and Beer and Colleagues (1984) present the Harvard model of HRM. Both groups of authors argued that the integration of HRM strategy with the strategic objectives of the business is the key to understand the new HRM. The matching model suggests that people in the organization managed according to organizational requirements of quality and effectiveness. Where organizations fail to follow appropriate HR strategy, they will beset by inefficiencies. Thus, the critical managerial task is to align the formal structure and the HR systems in such a way that they drive the business strategy of the organization. The Matching model assumes that the firms' strategy, structure, and HRM system should have a sort of 'tight fit', and these are virtually affected by the environmental factors, such as economic, political, and cultural forces. On the other hand, the Harvard model (Beer et al. 1990) assumes that historical problems of PM can be solved if general managers develop a philosophy or viewpoint about how they wish to see employees involved in and developed by the organization. The elements of this model are stakeholder interests, situational factors, policy choices regarding HRM, HR outcomes, and long-term consequences. The matching model represents the hard HRM evolved from 'pure' unitary framework whereas, the Harvard model,

known as soft HRM, recognizes the 'power of stakeholders' (government, management, and unions) and thus represent the pluralist framework, though its origins in the US (Poole 1990). Hard elements of HRM are less subject to the influence of cultural and environmental variations and can be applied immediately with little or no adaptation whereas, the soft elements of HRM are more culture-bound and context-specific, require more adaptation during the transfer (Fan 1998).

Over the decades, authors have contributed scholarly approaches to varied forms of ERs. Unitary and pluralist framework (Clegg 1975; Fox 1966; Purcell 1987), as discussed earlier, is a form of ERs widely discussed in management literature. To define it precisely, in a unitary framework of management, workers hold a common interest; in a pluralist framework, workers and management hold a different set of interests, and therefore, the conflict between management and workers is inevitable. Specifically, the pluralists recognize the legitimate right of workers and unions for collective bargaining and initiate their activities in the interest of union members (Clegg 1975; Fox 1966). Morgan (1986) argues that in every society, antagonistic class of interest exists, and thus conflict in organizations is inevitable if such different interests exist. Similarly, Marchington and Parker (1990) argue that instead of individualism and collectivism, it might be appropriate to say the investment orientation (to employees) and partnership orientation. Guest (1995) offers four different forms of ERs: a new realism—high emphasis on HRM and IRs; traditional collectivism—priority to IRs without HRM; individualized HRM—high priority to HRM with no IRs, and; the black hole—no HRM and no IR. Kaufman (2004) states that "HRM connotes an individualistic approach to employment relations, a management-led and—controlled set of employment strategies and tactics, and a non-union system of wage determination and workforce governance; IRs, on the other hand, emphasizes collectivist, institutional aspects of the employment relationship, the setting of wages and conditions through collective bargaining and joint governance, and the presence of a trade union as the independent representative of the employees" (p. 403).

Footing on these conceptual developments of HRM in the last three decades, HR scholars have desperately argued on HR-performance issues and attempted to establish relations between HR practices and organizational efficiency and effectiveness (Baker and Gerhart 1996; Guest 1997, 2001; Ulrich 1997; Kaplan and Nortan 1992). The issue relating to convergence and divergence paradigms can predict how far the HR practices are compatible or not in a country-specific context. Convergence paradigm advocates 'best practices', whereas the divergence paradigm advocates the existence of country-specific systems (Brewster 1999). However, with increasing international-type organizations in many developing countries, some researchers are trying to find the "best international HR practices" that might serve as a common denominator across different cultures and nations and be related to organizational effectiveness in different countries (Geringer et al. 2002). Ulrich (1998: 124) explains a new form of ER and states that "HR should not be defined by what it does but by what it delivers- results that enrich the organization's value to customers, investors, and employees." A large number of academic literature published convinces the researchers and practitioners that relations exist between HR practices (recruitment and selection, performance evaluation, reward, and training) to firm performance (e.g.

lower employee turnover and greater productivity and corporate financial performance) (Huselid 1995 e.g., Becker and Gerhart 1996; Kaplan and Norton 1992; Ulrich 1997; Guest 2001, 1997). The discussion up to this paragraph has suggested rational (strategic HRM based on environmental analysis) rhetoric (the theoretic identity of 'HRM', e.g., Caldwell 2004) and ideal (best HRM practices or convergence HRM approach) concepts.

Creeping in 1970, the concept of HRM arrived around 1985–86 in the UK (Hendry and Pettigrew 1990). There was pervasive use of 'Personnel Management and Industrial Relations' textbooks and scholarly research focused on the pluralist framework. At that time, the British industry was suffering from restructuring effects due to recession and loss of competitiveness. Anti-union legislation of the Thatcher government encouraged firms to introduce new labor practices and re-order their collective bargaining arrangements (Storey 1995; Hendry and Pettigrew 1990; Legge 1995). At the beginning of its arrival, British authors cautiously screening the American unitary framework of analysis to conceptualize European HRM. Shadowed by American HRM perspectives partially, British HR scholars published their report and articles shifting from the agenda of industrial relations to a short term HRM approach focusing on skill development and capacity enhancement (Hendry and Pettigrew 1990). A British author even said HRM as amoral, unprofessional, reactive, uneconomic, and ecologically destructive (cited in Strauss 1994). As time passes, the situation improved better. As Kaufman (2004) writes that "after the dust settled, the effect of the HRM invasion into British industrial relations appeared to be mixed as the 1990s drew to a close (p. 405)." Since then, several articles published in the joint authorship of British and US scholars with similar HRM methodologies. Some of the models developed by British scholars are the developmental- humanism approach of the ERs (Legge 1991). The Model of Strategic Change and HRM (Hendry and Pettigrew 1986), normative HRM Model (Guest 1997) and European HRM Model by Brewster (1995).

The debate on differences in personnel and HRM/SHRM begins in the early 1990s. Legge (1989) presents three differences between PM and HRM. She argues that PM aims at non-managers, attempts to influence the line managers, and was seen apart from the 'mainstream', whereas HRM is concerned to develop management teams in the organization, embedded with line management, and focuses on the development of organizational culture. Legge (1991) further states that human resources are valuable and a source of competitive advantage and therefore, they should be tapped most effectively by mutually consistent policies that promote commitment. Brewster and Hegewisch (1994) argue that a defining feature of HRM is its close linkage to business strategy. Brewster et al. (1997) offered a new perspective on how to organize HR practices in organizations. The parameters they used to describe such practices are integration and assignment. They argue that when HR experts from the department are invited and given opportunities to explain HR issues at the time of formulating business strategies, it is called integration. If HR practices are devolved or assigned to line managers rather than HR experts, it is called an assignment. Hendry and Pettigrew (1990) describe four strategic themes of HRM. They are the use of planning; a coherent approach to the design and management of personnel systems based on an

employment policy and manpower strategy; matching HRM activities and policies to some explicit business strategy, and; seeing the people of the organization as 'strategic resource' for achieving competitive advantage (p. 21). Pieper (1990) and Gaugler (1988) argue that the differences in HRM in different countries reflect differences between those countries' cultures and practices of state interference. They developed models within the European approach to management, which is characterized mainly by European integration, pluralism, tolerance, balanced stakeholder philosophy, and social partnership. Compare to the US, the management of the human resource in Europe influenced by factors such as a more restricted level of organizational autonomy, lower exposure to market process, greater emphasis on the role of the group over the individual, and the increased roles of management (Sparrow and Hilltrop 1997). In Australia, the term ERs used to value the interest of various stakeholders on HRM policies and practices (Palmer and Kane 1995). According to Gardner and Palmer (1992), potential external influences on HRM policies and practices are international and national economic changes, technological changes, national culture/traditions, industry/sector characteristics, legislation/regulations, actions of competitors, and actions of unions.

It is believed, HR practices have been developed over the decades to fulfill the specific needs of the corporate world. HR experts are bringing different perspectives, practices, and tools over the decades (Ulrich 1997). For example, in the 1940s, the popular HR practices were related to staffing and LRs. The training concept crept in the 1950s. During the 1960s and 1970s, HR practices such as regulation, compensation, benefits, and performance appraisal emerged. HRM policies and practices on health care, organizational design, teamwork, and communication developed in the 1980s. During the 1990s, HR practices focused on mergers, acquisitions, downsizing, and diversity management. In the 2000s, HR practices are more concerned with global competition, competitive advantages, cultural changes, adapting with new technology, talent management, leadership development, and knowledge management. However, it appears that HRM scholars as cited in Cooke (2018) are not truly satisfied with the results of researches undertaken over the last three decades. They argue that the HR research "has neither proved the causal link between certain types of HRM practices and organizational performance nor has this body of increasingly positivist-oriented research brought significant advancement in our understanding of the complexity of organizational life to make our research relevant to management practices" (cited in Cooke 2018: 3). Kaufman (2015: 396) further noted that in the last 30 years, the basic conceptualization of strategic HRM remains the same.

Realizing the increasing problems of differences in society, a new wave of HRM research begins to address sustainability and inclusiveness. In China, creating more and more employment opportunities is regarded as the main dimension of corporate social responsibility CSR (Xu and Yang 2010). The central government adopted a circular economy policy as an official development strategy in 2002 (Sarkis et al. 2011), aiming to protect environmental degradation and resource scarcity issues due to poor industrial practices. Indeed, in China, members of the general public may not even be aware of a company's CSR initiatives. For this reason, many CSR programs dovetail with the priorities of the local or provincial governments, such as education,

health care, and environmental protection (Mullich 2011). With the influence of Late Mahatma Gandhi philosophy, the pioneering efforts of CSR were made by the Tata-Group in the nineteenth century. The CSR activity in public sector enterprises has been encouraged by the Government by making provision to earmark 5% of their profits for CSR. But, there is always a problem of utilization and allocation of such funds properly because of various reasons (Venkataratnam et al. 2009). The study by Adhikari et al. (2016) finds that Nepalese industrialists believe that creating employment opportunities and providing employment are their main CSR activities. The study reveals that the "economic domain of CSR is emerging in Nepalese companies shifting from philanthropic toward focusing on their strategic intents. Although efforts from the side of government are there to achieve Millennium Development Goals (MDGs), companies in Nepal are knowingly or unknowingly contributing to achieving some of these goals (Adhikari et al. 2016: 683). Prompted from the concept of CSR, the idea of sustainable growth of business containing multiple stakeholders is highlighted in HRM research. Mariappanadar (2003) suggested that a "Sustainable HR strategy can be defined as the management of human resources to meet the optimal needs of the company and community of the present without compromising the ability to meet the needs of the future" (p. 910). The four pillars of sustainable HR are socially responsible HRM, green HRM, triple bottom line HRM, and common good HRM (Aust et al. 2018). Whereas socially responsible HRM is related to building social capital at the organization level through proper recruitment, training, and development, deployment, and release; green HRM-related to the HRM practices to improve the environmental records of the company. Triple bottom line HRM defined as balancing HRM activities for the economic, social, and business for the sake of people, profit, and the planet. Finally, common good HRM-related to 'the fundamental responsibility of business to "make an effective contribution to resolving the sustainability challenges we are collectively facing' (Dyllick and Muff 2016: 156). Footing on the UN Declaration on 17 Sustainable Development Goals (SDGs), HRM scholars are striving hard to link SDGs to business and contribute to the sustainable development of the organization and the country (Dyllick and Muff 2016). Aust and colleagues (2019: 2) argue that "a new understanding of the purpose of HRM is needed if it is to be effective in both designing and implementing sustainable HRM systems and contributing to solving today's "grand" societal challenges (the SDGs)" (Ina Aust (Ehnert), Brian Matthews, Michael Muller-Camenb 2019). The emerging challenges of HRM hitherto are to look for such an approach of research that represents the context of the HRM that could link to the SDGs. Cooke (2018) prescribes the multi-level approach-the descriptive, the analytical, and the subjective. The descriptive approach focuses on, for example, demographics and characteristics of the individuals/workforce, company, industry, and country. The analytical context comprises the analysis of, which often focuses on broader phenomena, such as the institutional, cultural, and structural context of the firm's HRM issues. Finally, the subjective approach related to the cognitive understanding of the conceptualization of facts and information.

As discussed earlier, HRM, as a distinct field of study, draws attention among researchers, students, and managers in Europe, America, and even in developing

countries after in the 1990s. Initiated by the Harvard and Michigan group of researchers, it has expanded its landscape and associated terrain in Europe and Asia. In India, since the 1990s, many articles were published locally and internationally on HRM shifting towards the unitary frame of reference. Kaufman (2004) states that active participation of researchers declined in IRs, and training and teaching on IRs have either eliminated or downsized in India. The interest of the students shifted from IRs to HRM. In Japan, the traditional form of employment relations has changed after 1990. Adhikari et al. argue (2010: 2414) "Over the past decade many changes have observed in traditional Japanese employment relations (ERs) systems such as an increase in non-regular workers, a move towards performance-based systems and a continuous decline in union membership. There is a large body of Anglo-Saxon and Japanese literature providing evidence that national factors such as national institutions, national culture, and the business and economic environment have significantly influenced what were hitherto three 'sacred' aspects of Japanese ERs systems (ERSs)." Turning to Nepal, the history of management education begins in 1954 with the enrollment of four students in Bachelor of Commerce (B. Com.) and 17 students at the Intermediate in Commerce (I. Com.) levels. But now, the management faculty enrolls the highest number of students (46.37%) in Nepalese universities (UGC 2018–2019). During the 1970s–1980, books authored by John Dunlop (Industrial Relations Systems), Edwin B. Flippo (Personnel Management), and Dale C. Beach (Personnel: The Management of People at Work) introduced at the master level. In the early 2000s, the subject title human resource management taught at the postgraduate and undergraduate courses. Reports and academic publications that appeared on Nepalese labor and union issues are either from international organizations or from non-government agencies in the 1990s. At the postgraduate and undergraduate levels of business schools, a unit of labor act, trade union act, and industrial relations offered in the HRM course content. American and European perspectives on HRM taught in M.Phil. seminars. By and large, there is a rising influence of American and European literature on HRM in Nepalese business schools. Largely influenced by Western management literature, the approach adopted in the curricula is to teach the 'unitary' frame of HRM. Adhikari and Mueller (2001: 100) argue that "on the one hand, the Nepalese culture fosters the adoption of traditional managerial practices such as centralized management and administration, but, on the other, it is quite open to modern Western-type management practices."

About changes in economy and business, national culture, and institutional perspectives over the decades, there is an urgent need to initiate an academic discourse on to conceptualize ERs in the Nepalese context. In the mid-1980s, Nepal adopted the policy of economic liberalization. Immediate after the 1990 'People's Movement' brought an end to the absolute monarchy and thereafter liberalization and privatization movement speed up in its transition to a free-market economy. Since the country embarked on a basic economic reform program it begins privatizing public enterprises, feeing trade and prices, establishing a convertible currency, and revitalizing the stock market. In this situation, the understanding of Nepalese contextual factors provides a strong base to conceptualize the Nepalese form of ERs. Therefore, this paper comprises three-fold objective: to analyze economic and business environment,

national culture and institution; to investigate the impact of these factors in the shaping of employee relations, and; to discourse on the form of ERs for Nepalese organizations to achieve the milestones of Sustainable Development Goals (SDGs).

2 Economy and Business Environment

Geographically, Nepal is a landlocked country that lies between two emerging economies—India and China. Since its unification in the eighteenth century, Nepal has been an independent kingdom. Unlike India and other countries in South Asia, it never colonized. During the autocratic rule by the Rana family, from 1816 to 1951, foreigners were generally not allowed to enter the country, so Nepal was almost completely isolated from the outside world. In 1951 Nepal became a constitutional monarchy, however, the real power remained with the King. Although the Constitution theoretically guaranteed freedom of speech, the police apparatus was not publicly accountable, and political activists were arrested and tortured. The party-less Panchayat system ruled the country for 30 years under the absolute monarchial system. In 1990, a pro-democracy movement motivated by political freedom, economic problems, and discontent with corruption, forced the King to end his rule, and a multi-party democracy established. Since then, the King has retained certain powers but has dissociated himself from direct day-to-day government activities (Europe Publications 1999).

Nepal passes through several political upheavals in the last three decades. Starting from 1990, Nepal beset with political instability and turmoil. In 1990 joint civil resistance lunched by the alliance of United Left Front, and the Nepali Congress overthrows the party less Panchayat system. The Communist Party of Nepal-Maoist (CPN-M) lunched civil war against the state lasted for ten years. The Royal massacre that happened in 2001 killed the whole family of King Birendra. King Gyanendra seized the power in 2005, and the ruled the country directly for 14 months. In 2006, with the signing of a 12-point memorandum of understanding (MOU) between the Seven Party Alliance (SPA) and the CPN-M peace and the democratic process starts. During 2007–2015 three Madesh Movement erupted. In 2015 the new Constitution of Nepal came into effect replacing the Interim Constitution 2007. The Constitution declared the country as "an independent, indivisible, sovereign, secular, inclusive, democratic, socialism oriented, federal democratic republican state (Constitution of Nepal 2015)."

Since 1990 Nepal has been struggling to establish a stable government. Frequent changes in government in the country gave rise to political instability and uncertainty. The government has changed 27 times between 1990 and 2018. This situation has favored none other than short term politically motivated promises for holding power at the expense of long term investments. Moreover, during 2007–2017 with such long-lasted instability Nepal's growth rate remain lowest in the region (American Embassy, Kathmandu 2019). In 2018 the United Marxist-Leninist won the majority of seats in Parliament and formed the government. There has been increasing expectation among the people that country should remain stable politically for its growth and development.

Another factor that has had a significant impact on the Nepalese economy and business is the deregulation of the economy. In 1991, the government started economic reforms aimed to move the country towards a free market economy. The influence of major foreign donors such as International Monetary Fund (IMF) and the World Bank played a vital role in the adoption of the economic reform program, widely known as Structural Adjustment Program (SAP) with a view to economic development and growth similar to other developing countries. Public expenditure was cut by reducing subsidies, introducing a value-added tax, privatizing companies, and laying off civil servants. The reform program has included freeing of trade and prices, the elimination of public monopolies, the introduction of a convertible currency, and the revitalization of the stock market (American Embassy Kathmandu 2000). With the liberalization of the economy, the government aimed to encourage trade and foreign investment. After decades of protectionism, Nepal has opened its doors to international investment. Foreign investments in joint venture operations with Nepalese partners or as 100% foreign-owned subsidiaries are allowed. Investment procedures simplified to attract foreign capital. However, experts and industrialists are not satisfied with the restrictions in doing business and not fulfilling the promises by the government. One of the industrialists indulges that in a case, the government has not provided electricity, and the company has to build the road on its own to approach the factory (Shrestha 2019). Except for a few procedural hurdles, Nepal experienced remarkable growth after the 1990s in the key areas of the economy, such as industry, trade, foreign investment, communication network, and finance and international transactions (Nepal-India Chamber of Commerce and Industry 2011). Market-oriented economic policies have encouraged private sector participation in economic activities, limited the government's role to that of a facilitator and developer of prerequisites, supported the private sector to become more efficient and competitive.

Nepal's total population estimated 29 million, of which 71.5 (20.7 million) percent are at working age (15+ year), and the unemployment rate is 11.4% (GoN/ILO 2017–2018). Around 500 thousand people are estimated to enter the Nepalese labor market annually. However, in the lack of the required level of skills of the labor force and job opportunities, a large number of the workforce remains unemployed. The employment-to-population ratio and labor force participation rate are 34.2 and 38.5, respectively. Of the total employed working force, 80% having education below the secondary level, and only 9.4% have tertiary education.

In the last two and a half decades, a shift noticed in the population living in rural and urban areas. In 2017, almost 37% of people resided in rural areas that were 90% in 1990; 63% of people reside in urban areas that were only 10% in 1990 (GoN/ILO 2017–2018).

Employment opportunities in urban areas attracted a large number of rural populations to live in urban areas. Due to the lack of employment opportunities in the country, attraction for foreign employment is high. Although the government figure reveals 4.30 million have gone abroad as migrant labor formally, over 6 million Nepalese are estimated to be working in Gulf countries, Malaysia, India and many other countries. The country has received $7.22 billion in remittances in FY 2017/18,

equivalent to 25.1% of GDP-(American Embassy, Kathmandu 2019). The remittance money had substantially contributed in raising the per capita income to $1085 in 2019 (GoN, 2019–2020) from $210 in 1997. There is no uniformity in the skills of these Nepalese migrant workers. Of these migrant workers, skilled workers are 1.5%, semi-skilled workers are 24%, and non-skilled workers are 74.5% (GoN, 2019–2020). The amount of remittance money could have increased substantially if these manpower properly trained before joining the foreign employment.

Even today, a large number of children are at work. A total of 7.2 (29.6) million children aged between 5 and 17 years are estimated to involved in at least one activity related to producing goods for their final use (GoN/ILO 2017–2018). People are still suffering from poverty, as 25% of the population lives below the poverty line, on 50 cents per day. It makes the country the poorest in the world. Nepal's adult literacy rate is 67.9% (Knoema.com 2019) and population growth of 1.09 (2018)% per annum. Disease, malnutrition, and child mortality are high (ADB 2020). The birth rate is 1.97%, and the mortality rate of 5.6 per thousand (tradingeconomics.com). Since the last few years, Nepal's situation of human capital development has been moderately improving in the SAARC region. The country's HDI value was 0.579 in 2018, which put the country in the medium human development category (UNDP 2018).

Similar to other South Asian countries, Nepal remains largely an agrarian economy. Majority of the economically active population work in the agricultural sector. It employs 70% of farmers and, the aggregated contribution of this sector is 27% in GDP. Some of the serious problems facing the agriculture sector are, heavy dependence on the monsoon rain, lack of fertilizers, and scarcity of new land, continued environmental degradation, and lack of skilled agriculture technicians.

In terms of capital investment, there are three types of industries—a large industry with fixed capital more than NRs. 250 million, medium scale having fixed capital more than 100 million, up to NRs. 250 million, and small industries having fixed capital up to NRs. 100 million—are in operation (GoN 2018–2019). The share of the small, medium and small industries is 86.5%, 8.9%, and 4.6%, respectively. The Ministry of Industry, Commerce, and Supplies defines eight categories of industries—agro-based and forestry; construction; information, communication and transmission; energy-based, manufacturing, mines-and mineral-based; service, and; tourism. Nepal is the 153rd largest export economy in the world (GoN 2018–2019, Industrial Statistics). Top ten export produces are readymade garments, pashmina products, leather and leather products, pulses, handicrafts, spices, floriculture products, medicinal herbs, and essential oils and tea and coffee.(https://oec.world/en/profile/country/npl/). The aggregated contribution of industry and service sector is 15.2% and 57.8% in GDP, whereas employment share per aggregated sector is 13% and 17%, respectively (ES 2018–2019; World Bank 2017). It indicates that the growth of the service sector has a significant contribution to GDP. Moreover, the industry mainly depends on agricultural products, and most of the industrial outputs are from traditional cottage industries such as basket weaving and the production of cotton fabrics. The small manufacturing industries and the service sector cannot meet the demand for work. Employment generation expected to stand at 75 on an average in Nepalese industries. A large number of workforces have to work in the informal

sector, e.g., street vendors, domestic servants, and day laborers. Where the system of the employment contract and job security does not prevail. Tourism is the most vibrant sector in terms of income and employment. It has a 7.9% contribution in GDP and supports one million jobs (Konema 2019). Similar to other Third World countries, Nepal has a dualistic economic structure, where a pre-capitalist economic system and a small industrial sector co-exist (Bean 1994: 215).

Turning to foreign trade, the major trade partners are India, China, the USA, Germany, and, United Kingdom. Nepal's economy tied up to India as the major trading partner. Major import products are minerals fuels, oils, distillation products; iron and steel, machinery, nuclear reactors, boilers; vehicles, electrical, electronic equipment, cereals; pearls, precious stones, metals, coins; and plastics (tradingeconomics.com). Principal export items are hand-knitted woolen carpets, ready-made garments, and soap products. Carpet and garment exports expanded dramatically in the late 1980s and early 1990s. Due to problems such as poor quality, trade restrictions, and increasing hostility in the West to the use of child labor, these industries contracted after the 1990s. The growth in craft industries, foreign aid, tourism, and remittances from Nepalese working abroad account for 50% of foreign-exchange earnings.

Tourism and hydropower are two potential sectors that could support the economic growth of the country (Europe Publications 1999: 793). Nepal can potentially produce over 80,000 megawatts (MW) of hydropower. Currently, it is producing 1355 MW electricity (GoN, 2019–2020) and, expected to reach 2397 MW by 2030 (GoN 2018–2019). The total revenue is estimated to generate up to $28 million per year in 2030 just by exporting electricity to neighboring countries if the country can harness hydropower potential. In 2019 the balance of payment recorded at $1.01 billion surplus (NRB 2020). The increasing import of petroleum products, vehicles/spare parts, electrical goods, and steel and iron has widen the deficits in the balance of payment in the past (https://nepaleconomicforum.org/neftake/balance-of-payment-a-perspective/). In 2017, Nepal imported $9.6 billion and exported $803 million resulted in an $8.75 billion trade deficit (https://oec.world/en/profile/country/npl/).

Although improvements noticed in the Doing Business Index and the country has implemented some policies and regulations to attract foreign and domestic investors, the target volume of investment has not achieved so far. According to the World Bank Group (2020) Nepal scores 63 in doing business and 86.3 in starting a business. In terms of getting credit, dealing with construction permits, and trading across borders, getting electricity, registering property, enforcing the contract, and resolving insolvency Nepal's rank position is better than the regional average. To achieve the Sustainable Development Goals and to become a middle-income country by 2030, Nepal has to attract domestic and foreign investors. Whereas commitment for foreign investment was $491 million and $211 for 2017–2018 and 2018–1019, the country receives only $169 million and 115 million in the respective years. The past report shows that 17.81% of the GDP was in domestic saving, the trade deficit was 37.36% of GDP, and FDI net inflow was 0.55% (tradingeconomics.com). Almost 70.5% of GDP was for household consumptions. It reveals the fact that domestic investment in Nepal was remained low and could bring a challenge in the future to achieve the

target to become a middle-income group country by 2030. The GoN admits that the main problems in the growth of the industry, commerce, supplies, and tourism are: lack of entrepreneurial mind-set; difficulty in finding productive areas and capital for investment; lack of cost-competitive and quality industrial products; and production of quality exportable goods (NPC 2019–2023). Fewer initiatives from the private sector to manage capital and skills in the micro and small-sized industry, lack of high-tech industrial facilities, lack of public-private-partnership (PPP) for the development of industrial value chain, and short-term profit motives of industrialists have also barricaded the smooth operations of the industries. Although liberalization and privatization policies have been supported by all major political parties and their governments, a compatible fiscal and monetary policy is lacking. Whereas center or center-right governments have moved more rapidly into the direction of liberalization, communist-dominated governments have favored relatively more state control and interference in the economy. The investment climate distorted by bureaucratic delays and inefficient government administration. Also, problems exist such as lack of direct access to seaports, few raw materials, inadequate electricity, difficult land transport, and inadequately developed and enforced legislation.

3 National Culture

Nepal is a secular state located in the Himalayas, and its culture largely influenced by India and China. It shares border 1880 km to India and 1415 km to China. In the process of early settlement in the country, the Newar and Tharus were believed to have an early settlement followed by large scale migrants from Tibet and Indo-Aryan people from northern India and had produced a diverse linguistic, ethnic and religious pattern (https://www.britannica.com/place/Nepal). India, in particular, has had a profound influence, as Indian migrants brought the Hindu caste system to Nepal. Hindus comprise 81.34% of its population, the remainder mainly consisting of Buddhists (9.04%), Islam (4.38%), Kirat (3.04%), and Christianity (1.41%) (CBS 2014). The population of 29 million further divided into 125 castes/ethnic groups (CBS 2011). Although some cultural and religious rigidity of the caste system (upper and lower casts) has eroded by the Constitution, still few scattered incidents of differentiation notice in the Nepalese society. Some correlation between the caste hierarchy and the socio-economic class hierarchy exists (Savada 1991). In Nepalese culture, caste and status are intertwined and thus contribute to defining a system of social hierarchy and deference. As described in Lonely Planet (2017), "caste determines not only a person's status but also their career and marriage partner, how that person interacts with other Nepali and how others react back." This system of hierarchy extends to the family, the civil service, and even in the informal sector. For example, in the past, most posts in the civil service, the army, and the police were held by members of the two highest Hindu castes, and these castes also dominated the political parties (Early 2018). In the informal sector, there are instances of discrimination based on gender, caste, disability, religion, sexual orientation and gender identity,

and HIV-positive status (US Department of State 2017). From 2007 an inclusive approach of appointment is followed. According to the civil service rule, 33% of the position holds for women, and 27% for indigenous nationalities. Similarly, for Madhesis, the Dalits, downtrodden persons with disabilities and candidates from backward regions, 22%, 9%, 5%, and 4% positions were held for the appointment, respectively. Even after the adoption of an inclusive approach, as Early (2018) writes, "Brahmins and Chhetris constitute more than 50% of candidates recommended for jobs in 2017, despite representing around 29% of the Nepalese population." Organizations partially or fully owned by the government, universities, and schools are also following the inclusive system of appointment at the entry level of job. With the principle of inclusiveness in public sector jobs, women's participation increased in the last ten years. Their participation rises from 8% from a decade ago to 23% in 2017 (Early 2018). This rule of inclusiveness, somehow, provides justice to women workforce participation since their population size is larger than males.

According to the Central Bureau of Statistics (CBS 2018), of the total population, 49.6% are male, and 50.4% are female. Almost 57% of the women were literate in 2015. In terms of employment, 66.5% of women and 59.7% of men are in the informal sector (GoN 2018–2019). Women are often described as lower in social status than men and occupy a secondary position in business, work, and even at home due to cultural legacy. There is a difference in earnings between male and female managers. Male managers earn NRs 34,162 per month whereas female managers earn 29,342 per month (Shrestha 2019). Similar is the situation in elementary jobs where men are earning NRs. 15,194 and females are earning NRs 10,580 (Shrestha 2019). Government, private sector organizations, and NGOs are working closely to break this challenge empowering women. Interestingly, in recent days the freedom and opportunities enjoyed by women vary in different castes. The lower caste women are more outspoken, greater mobility, and playing wage-earning role compared to the higher caste women who are conscious of their reputation and family status (https://www.everyculture.com/Ma-Ni/Nepal.html#ixzz6Nu1QookU). Of the total employed, women represent 1.5% in the informal sector. This figure does not match the proportion of female participation in higher education institutions. In terms of enrollment in higher education, of the total number of students, 52% are female (UGC 2017–2018). In 2017 the proportion of female participation in the National Parliament was 30%. (https://codefornepal.org/2018/03/women-nepal-2018/).

During 30 years of the party-less Panchayat system, the country structured into 14 Zones and 75 Districts headed by Zonal Officers and Chief District Officers, respectively. For the top-level positions, mostly those people appointed who favored by the Royal Families. Since the 1960s, most of the secretaries of the government and Chief Executives in the public enterprises selected from among the most favored persons following the cabinet decision. Most of the appointments based on compliance with the ruling political system less considering to professional qualification. Employee placements were done not according to the professional qualifications of the jobholders. Power-sharing and decentralization of decision-making authority are selectively made and there was no system of performance-based management. The government formulated development plans, but the implementation process was ineffective

due to ambitious targets and, highly centralized administrative culture. Myrdal (1968) stated that plans in Nepal poorly implemented because of poor technology, underdeveloped institutions, imperfections in the authority of the government, centralized governance system, corruption, and low efficiency and standards of integrity in public administration. Furthermore, this cultural legacy, as anecdotal evidence shows, may have contributed to a tendency of management to avoid decision-making (Agrawal 1975) and responsibility (Shrestha 1980).

Even after the political change in 1990, the system of political appointments continued in government organizations. Although the merit-based system adopted in the appointment of CEOs, the influence of the ruling party cannot be ignored even today. In particular, to be recruited at the top position of organizations, getting promotions and being selected for overseas training participation, political affiliations, and connections are the important determinants. The government suffered from widespread corruption and political and administrative officials often rely on bribes to supplement their income (https://www.everyculture.com/Ma-Ni/Nepal.html#ixzz6Nu1QookU). In a recent survey by the Transparency International in 17 Asian countries it was revealed that 58% of Nepalese citizens think that corruption increased in the past 12 months (TI 2020). The Report also states that "People's growing frustrations with government and apathy towards corruption have spurred the "Enough is Enough" campaign, COVID-19 street protests and support for Dr Govinda K.C.s medical-sector reform agenda" (p. 9).

In the public sector, especially in civil service, public enterprises, universities and schools, government hospitals, and other government organizations there are transparent rules and regulations. However, including private banks, recruitment in privately owned manufacturing and service organizations is not transparent. Although some private banks are getting services from independent recruitment agencies for shortlisting potential candidates, in the lack of a transparent recruitment system, the fairness in the selection process could not be assured. Job hopping is pervasive in the private sector even in the case of top-level managers. Most of the private sector manufacturing organizations owned by the family and corporate authority will transfer ownership and management from generation to generation.

From this explanation, it reveals that even after the dramatic political and economic changes of the early 1990s, the long-standing national culture of centralized administration and management has not changed. Some of the rules and regulations of the *Panchayat* system were in effect for a long time even after 1990. Nepalese decision-makers still prefer to hold power rather than to delegate and devolve it. The overwhelming belief among them is that the more power you hold, the more you are recognized in society (Adhikari 1999). In the Hofstede cultural dimensions, Nepal scores high (65) in power distance, has a medium-low preference for avoiding uncertainty, and considered as a collective and feminine society (https://www.hofstede-insights.com/country/nepal/). According to Hofstede Insight, Nepalese organizations are hierarchic that reflect inherent inequalities, centralization of power, subordinates expect to be told what to do and the ideal boss is a benevolent autocrat.

However, Nepalese culture does not remain unchanged. Over the last decades, Western materialism has exerted influence on Nepalese culture, particularly in urban

Nepal such as Kathmandu, Pokhara, Biratnagar, Bharatpur, and some other cities. It can be partially attributed to the rising interest among upper-middle and higher class youth to go for higher education in the West. Moreover, Bollywood and Hollywood movies and songs, watching different TV programs, increasing connectivity through email, internet, Facebook, and other social media, an increasing number of foreign tourists also have influences among Nepalese youths. A large number of middle higher income groups of people go for holidays out of the country annually and exposed to western fashion, food, and influenced by their cultures. Foods like pizza, burger, spaghetti, and a few others are getting popularity in Nepalese restaurants among the youths. Western fashion and dress are popular among urban and rural youth. Copying Western culture and consumerism has had a profound impact on Nepalese middle and upper-class families in major cities.

4 National Institutions

The importance of the English language felt very late in Nepalese Schools. After a visit to England in 1850, Prime Minister Jung Bd. Rana (1846–1856) realized the importance of the English language for communication and has called two British teachers to teach English to his sons (Sharma 1990). During his regime, he established the first school named Durbar High School (Palace High School) in 1854 exclusively for ruling Rana family members. Later, this school opened for the public in 1902 (https://en.wikipedia.org/wiki/Durbar_High_School). Only the ruling elite had access to education; the rest of the population remained largely illiterate during the Rana regime. They suspect that social reform and institutional development might be a threat to their regime. However, despite their isolation policy, English education had gained a higher status. Three years after 1951, a landmark political change happens in Nepal. The National Education Planning Commission created to assess the educational status of the country, identify needs for education, and recommend developmental reforms. The Commission finally, with the help of an expert team, reported the then education situation of the country.

According to the Commission's report, the literacy rate was about 2% in 1952 (https://photius.com/countries/nepal/society/nepal_society_education_since_1951.html). The major recommendations of the Commission were on basic literacy education for all young children as well as for adults, vocational secondary education, and competitive higher education relevant to the geography of the country, cultural heritage, and socioeconomic conditions. In the 1960s, primary education became free for all. As of 1987, there were 17,816 schools (Sharma 1990). After the 1990s, priority given to increasing access to school education, and therefore, many community based and institutional schools were open. The number of schools has doubled in 2017 and reached 35,591 (29,035 community and 6,566 institutional) (MoEST 2017). Albeit student enrollment increased at the primary level, the number of students substantially decreased once they reach to the higher secondary level. Government of Nepal (GoN) candidly admits the fact that of the total students

enrolled in primary education, only 24% attain the higher secondary school (GoN 2018/2019).

In the 1970s, vocational training introduced in high schools. Latter, due to problems in managing vocational education in schools, it was closed. In 1989 with a mission to develop skilled and competent manpower to meet the international and national skill needs, Council for Technical Education and Vocational Training (CTEVT) established. It offers education and training programs—engineering, agriculture plant/animal, health and nursing, humanities, and hospitability. Few other training institutes in private sectors are also providing standardize training and academic programs to develop the vocational skills of people. In the first eight months of the current FY 2018–2019, a total of 13,059 students attained vocational education. Among them, 3509 were females and, 9550 were males who have received the skill development training. This number was 20,066 in the last year (GoN 2018–2019).

The development of higher education in Nepal had its earliest beginnings with the establishment of Tri Chandra College in Kathmandu in 1918. In 1959, the first university in the country, Tribhuvan University, was established. The University Grants Commission established in 1994 aiming to coordinate among universities; allocate and disburse government grants to universities and higher educational institutions, and; take appropriate steps for the promotion and maintenance of standards of higher education in Nepal. To coordinate among universities and to enhance the quality of higher education in Nepal, the Commission plays the key role.

A total Eleven universities, 4 deemed medical universities, and 1432 colleges (147 constituent, 538 community, and 747 private) are offering higher education programs in management, science, humanities, engineering, medicine, law, agriculture, education, and forestry streams (UGC 2018–2019). The emphasis of higher education is on developing institutions of higher learning in the areas of science and technology, agriculture, forestry, and national cultural heritage (including Nepalese architecture, arts, and crafts). Seven universities are running M.Phil. and Ph.D. programs. These universities contributing by producing human resources in different disciplines required for national development. Universities employ approximately 10 thousand teachers and enroll 0.41 million students (UGC 2018–2019, GoN 2018/2019). Even though the quantity of universities and colleges has increased, the quality of higher education remains the main challenge. As of 2020, only 49 (approximately 3%) higher education institutions are accredited (UGC 2018–2019). The country had ranked in 59th position among 129 countries in terms of enrollment, graduate in science and technology, and inbound mobility. (GII 2019) in tertiary education. A few numbers of research institutions and centers established in universities. Tribhuvan University has four research centers, namely, Centre for Education Research, Innovation and Development (CERID), Centre for Economic Development and Administration (CEDA), Centre for Nepal Asian Studies (CNAS), and Research Centre for Applied Science and Technology (RECAST). In the government and non-government sector International Centre for Integrated Mountain Development ICIMOD), Institution for Integrated Development Studies, New ERA (P) Ltd., Martin Chautari, Nepalese Administration Staff College, Nepal Health Research Council (NHRC) and Local Development Training Academy engaged in research and training programs. The

UGC provides grants to research the academic faculties in different headings—small research grants, faculty research grants, collaborative research grants, and Ph.D. and M.Phil. fellowship. Regarding scientific publication, a total of 27 articles published in 2019–2020 in international index journals (Nature Index 2020). Of the UGC funded research, 144 articles published in refereed journals (UGC 2020) in the last four years. Of which, five articles rated as quartile one (Q1) ranked by the SCImago journal. In Nepal, 176 journals are registered in NepJOL in which 19,551 articles are available in full text (Nepal Journal Online 2020, (https://www.nepjol.info/). In respect of performance outcomes of universities, Nepal ranked in the 92nd position in terms of research and development out 129 countries (GII 2019). According to Global Competitive Index 2019 (Schwab 2019), concerning research institution prominence, the country is ranked in 87th position among 140 countries. However, the impact of these publications has not thoroughly assessed. Particularly, regarding university-level research, as Khatiwada (2018) states that Nepalese universities lack imminent researchers and academicians. He further goes on to argue that "the majority of the senior faculties (at universities) are not accustomed to conducting research and publication during their entire career and also find it very difficult to start at their later stage. Ironically, some of them want their work to get published only to obtain academic designation and leave forever (p. i)." It might be the reason why the country is behind in comparison to other countries in creating and disseminating knowledge. Globally, in terms of knowledge and technology outputs and creative outputs, Nepal is ranked in 118th, and 112th positions respectively, among the 129 countries (GII 2019).

In 2015 the Constituent Assembly promulgated the new Constitution of Nepal replaced the Interim Constitution 2007. The Constitution clearly states that Nepal is an "independent, indivisible, sovereign, secular, inclusive, democratic, socialism-oriented, federal democratic republican state" (Constitution of Nepal 2015, Article, 4) and structures the country into three levels—Federation, State and Local. Similarly, seven States divided into 77 districts and 753 local units. The roles and responsibilities of political bodies explicitly defined by the Constitution. According to the Schedule 5 of the Constitution, central planning, central bank, finance policies, monetary and banking, monetary policy, foreign grants, aid and loans central universities, central level Academies, universities standard and regulation and central library; federal civil service, judicial service, and other government services; Intellectual property (including patents, designs; trademarks and copyrights); and laws relating to the Supreme Court, High Courts, District Courts and administration of justice are under the Federal power. Whereas Schedule 6 provides power to the State on agriculture and livestock development, factories, industrialization, trade, and business, transportation; state universities, higher education, libraries, and museums; State Public Service Commission; and State Civil Service and other government services. Both Federal and State levels share the power on social security and employment; trade unions, settlement of industrial disputes, labor rights and disputes related matters; legal profession, auditing, engineering, medicines, veterinary, industries and tourism; insurance business operation and management; poverty alleviation and industrialization; scientific research, science and technology, and human resource development,

and; employment and unemployment benefit. The local government is responsible for cooperative institutions; management of the local services; local level development plans and projects; basic and secondary education; local market management, environment protection, and bio-diversity; management of Village Assembly, Municipal Assembly, District Assembly, local courts, mediation and arbitration; management of senior citizens, persons with disabilities and the incapacitated, and; protection and development of languages, cultures and fine arts (Constitution of Nepal 2015). The new Constitution provisions for different high-level constitutional organs. The Commission for the Investigation of Abuse of Authority (CIIA) is an apex body to investigate corruption cases and control. The Auditor-General is responsible for auditing public accounts to ensure transparency, accountability, and integrity. The Public Service Commission (PSC) constituted to recruit meritorious candidates to serve in the GoN. In addition, three major organs are the National Human Rights Commission, Election Commission, National Natural Resources, and Fiscal Commission. The Constitution also constituted different commissions, such as the National Women Commission, National Dalit Commission, National Inclusive Commission, National Aborigines Commission, Madhesi Commission, Tharu Commission, and Muslim Commission. As the Constitution divided the role into different political levels, the issue of promulgation and implementation of regulation remains challenging. Still, compatible rules and regulations with the Federal institutes neither formulated nor implemented. For a few years ahead, this could bring problem in coordination of power and responsibilities and imparting good governance in three political levels.

A total of 39 public enterprises are in operation owned either fully or partially by the GoN. Among these enterprises, two are closed, 13 are running in loss, and 26 are running in profit (GoN 2018–2019). Few public enterprises sold to the private sector in the 1990s closed afterward due to the inability to produce a quality product, high cost of production, frequent strikes, and lockdowns. Altogether 175 banks and financial institutions are in operation that comprises 28 commercial banks, 32 development banks, 24 finance companies, and 91 micro finance, and one infrastructure development bank. Besides, 40 insurance companies and 34,737 cooperatives (GoN 2018–2019) incorporated in different parts of the country. In the private sector, as of mid-March of FY 2018–2019, the share of the large, medium, and small industries is 13.8%, 21.7%, and 64.5%, respectively. Many institutions are established in the service and manufacturing sectors. Among these 1592 public companies, 206,066 are private companies, 2304 are non-profit companies and, 243 are foreign branch/liaison offices (GoN 2018–2019). In the hospitability sector agencies, a total of 3518 travel agencies, 2649 trekking agencies, 129-star hotels, 1225 lodges and resorts, seven casinos, and 324 homestays have been in operation, and the total number of beds reached 40,856 in different types of hotels (ES 2018–2019). According to the SWC source (2016), 254 INGOs and 50,358 NGOs registered in Nepal.

There are institutions to work for labor welfare constituted by the GoN. The Department of Labor and Occupational Safety (DLOS) is responsible for the enforcement of labor laws and provisions. Its main objective is to eliminate unemployment

through skills development and to ensure occupational health and safety in industries. Under the Chairmanship of Minister of Labor, Employment and Social Security (MLESS), The National Advisory Board (NLAB) formed to help the government to develop or amend labor-related laws and policies. This Board comprises members from trade union and employer associations. Constituted by the GoN, The Minimum Wage Fixation Committee (MWFC) recommends the minimum wages. This Committee comprises representatives from the government, employer associations, and trade unions. In case the Committee cannot recommend the minimum wage, the GoN can fix it. The Social Security Fund Management Committee (SSFMC) is a government body that decides on social security schemes—maternity, sickness, employment injury, and medical—consulting with social partners. Besides, there is a dispute settlement system structured internally in the enterprises to resolve personal and collective disputes, 10 Quasi-judicial Bodies under the government in different parts of the country, and a Judicial Body (The Labour Court) resolving the disputes (Trade Union Act 1992).

In the private sector, a number of institutions established as an apex body to look after the interest of industries and businesses. The Federation of Nepalese Chamber of Commerce and Industry (FNCCI), Confederation of Nepalese Industries (CNI), The Federation of Nepal Cottage and Small Industries (FNSCI), Nepal Chamber of Commerce (NCC), the Hotel Association of Nepal (HAN) and so forth. For the development of entrepreneurship culture and provide training on entrepreneurship, some training organizations constituted. National Entrepreneurship Development Centre (NEDC), Micro-Enterprise Development Programme (MEDEP)/UNDP, and Industrial Enterprises Development Center (IIDS) contributing to the entrepreneurship and enterprise development programs. They are also providing vocational training. For the promotion of exports, Nepal is a member of the World Trade Organization (WTO), The Agreement on SAARC Free Trade Arrangement (SAFTA), and The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Including India and China, the country has expanded the scope of a trade by making bilateral trade agreements with foreign countries.

The government has aggressively set policies and promulgated acts in order to secure employment, transfer technology, encourage investment, and expand trade and business in the country. The National Employment Policy 2016 and Foreign Employment Policy 2012 are in effect. The government has expressed its commitment to sustainable development goals at the international level and for safe and secured employment through the International Labor Organization (ILO) Convention. To fulfill the commitment, various programs lunched with the strategy of enhancing productivity, promotion of domestic employment, and the abolition of forced foreign employment. Technology Transfer Act, 2019, Special Economic Zone Act, 2019, Public-Private Partnership and Investment Act, 2019, Industrial Enterprise Regulation, 2019, and Directives for Establishment and Operation of Industrial Centers have been implemented. The Labor act 1992 replaced by the new Labor Act 2017. The Right to Employment Act 2018 set provisions for the establishment of the Employment Service Center (ESE) at all local levels. It ensures at least 100 days of employment for an unemployed person. At the same time, Prime Minister Employment

Program came into effect. This act makes provision for minimum employment days for an unemployed person. It helps to minimize dependency on foreign employment, promote employment opportunities domestically by promoting entrepreneurship, and contributes to reducing poverty level. Enactment of the Social Security Act 2017 is an important covenant to protect the socio-economically deprived and vulnerable section of the people and for the social security of laborers. This Act does fill the gap in addressing the employment security problems in the informal sector. Almost 2195 employers have been enlisted in the process of social security fund (GoN 2018/2019).

The history of trade unions in Nepal starts with the establishment of the All Nepal Trade Union Congress (ANTUC) in 1946 and the Biratnagar Workers Union (BWU) 1947. However, there was no act governing employment relations at that time. In 1951, both the large unions ANTUC and BWU were unified. With the enactment of the Factory and Factory Workers Act in 1959, first labor relations activities were enforced by the government making provisions to organize workers in trade unions. With the political takeover by the then King Mahendra in 1960 and the introduction of *the Panchayat System*, all political organizations were banned together with the trade unions' activities. However, after such political suppression, except for a few scattered underground union activities, union activities were completely banned for the next 29 years. After a long history of underground struggle, the political environment was made a little freer in 1979, and during that period a few unions came into existence and continued to organize. The General Federation of Nepalese Trade Unions (GEOFNT) came into existence in 1989. Federation had played a key role to organize workers during the movement to restore democracy in 1990. Nepal Trade Union Congress (NTUC) came into existence in 1990. Just after the restoration of democracy, the Factory and Factory Workers Act was replaced by the Labor Act 1992. Then, unions structured into three levels: confederation, federation, and enterprise-level unions. At the same time, the Trade Union Act 1993 promulgated in order to streamline trade union activities. Following the promulgation of these acts, the Labor Regulations Act 1993 and Trade Union Regulations Act 1993 came into effect. In 1998, another confederation called as Democratic Confederation of Nepalese Trade Unions (DECONT) granted legal status. Immediate after signing of the Comprehensive Peace Agreement between the Maoist and the State in 2006, the All Nepal Federation of Trade Union (ANTUF) formed. Nowadays, multiple trade unions, such as employee unions, craft unions, white-collar unions, and, enterprise-based unions are active in role. In about 1000 enterprise-level unions, approximately 1.8 million workers organized (Labor Market Profile 2019). Over a decade or so, with the effect of political instability and civil war, strikes and lockouts were very common in Nepalese industries. Total Man-Days lost in the industrial sector peaked up during 1991–1999. In 1996–1997 total Man-Days lost due to strikes, and lockdowns were 93,878. This number reaches a peak in 1998–1999 above 210,000 Man-Days and zero in 2009–2010 (Nepal et al. 2013). The situation of strikes and lockouts improved over a while. Of the total strikes that occurred during 2008–2013, only 0.2% initiated by the trade unions. The remaining percent of strikes organized by political parties, rebellion groups, transport unions, and local communities. In different years during 2008–2012, a 860 total of 66 national level strikes occurred due to political

reasons, and average days lost in a year was 1797, and GDP growth rate loss at 1.52%, whereas the total loss in GDP growth during 2008–2013 from these strikes estimated between 0.59 and 2.15% (Shrestha and Chaudhary 2013). Recently, due to an effective mechanism for social dialogue as provisioned in the Labor Act, and Collective Bargaining Agreements (CBAs), initiatives at the enterprise, and industry levels, the number of strikes decreased substantially. Study shows that in 2018, three trade union federations in ITUC-NAC registered 149 CBAs covering 4.4 of the total member, conducted at the local level (LMP 2019). In FY 2018/2019, 259 labor disputes resolved through CBAs (ES 2018–2019). This number was 166 and 213 in FY 2016/2017 and 2017/2018, respectively. Unionization also prevails in civil service, public enterprises, and public and private banks of Nepal.

Study shows (British Academy 2018) that less than a quarter of civil servants are the members of the union. Personal and political connections in the civil service organizations are some factors considered in transfers and promotions. Furthermore, this study finds that union in the civil service, as opined by civil servants, could play a role to stop unwanted transfers, to protect from dismissal, and to advance position in the future. However, there is no incidence of strikes in civil service except for a few rallies.

Nepalese economy, in conjunction with poverty, at least partly explains why child labor is still a problem in Nepal. After the restoration of the multi-party democracy in 1990, Nepal ratified the UN Convention on the Rights of the Child and ILO Convention related to the 138 rights of working children. As a result, Nepal adopted the Child Labor Act 2000 that provides legal protection for children in the workplace, and the Labor Act of 1992 prohibits the employment of children under the age of 14. However, both of these Acts remained less effective at the time of implementation. In the rural economy and the informal sector, child labor is a widespread problem. Approximately 38% of children are estimated engaged in hazardous work (Labor Market Profile 2019). Most of these child labor are working in areas, such as subsistence food processing/production, manufacturing household goods, fetching water, collecting firewood, and construction of or major repair of own dwelling (NLFS 2019). The mechanism of law enforcement is not effective in Nepalese industries to ensure the quality of work-life through labor legislation. Adhikari and Gautam (2010) argue that "In the past, the GON, to a large extent, remained inefficient to develop a proper mechanism to monitor and supervise workplaces ensuring fair practices, such as standardized wage system and implementation of child labor standards. Although the government enacted different acts in the past, it is not found to be very successful for their enforcement at the organization level (p. 47)."

Nepal ratifies the Sustainable Development Goals and set the milestones to reach the status of developing country in 2030. The set of milestones includes: eliminate poverty; ensure inclusive and equitable education and promote life-long learning for all; achieve gender equality and empower all women and girls to ensure access to affordable, reliable, full and productive employment and decent work for all, and; build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (GoN 2017). However, without a sound institutional base, it is hard to achieve these milestones.

5 Discussion and Conclusions

Over the last three decades, the number of ERs forms debated. From the traditional PM and IRs, the focus shifted towards strategic HRM, strategic HRM, and recently, the sustainable HRM. In Western literature, there is no unanimity in the HRM framework. Some HR scholars argue in favor of the contextual approach, whereas other claims universal approach to HRM. The debate on the unitary and pluralist frame of HRM still valid to study and research on HRM. In this paper, as many as literature has been reviewed to initiate and provoke research in ERs.

This paper assumes that the economy and business environment, national culture, and institutions will have a significant impact on shaping the ERs practices in Nepalese organizations. In the previous section, it has argued that the Nepalese business and economic environment shaken by frequent changes in government, incidents, and movements, and the increasing role of foreign donors. In the last 30 years, frequent changes in government destabilized the country and thus created chaos for the smooth and sustained growth of manufacturing industries. The government attracts foreign investors by promulgating compatible legislations, however lack of skilled workforce, limited access to market, and bureaucratic system creating hurdles for its growth. There has been remarkable growth in the service sector, leaving behind the contribution of manufacturing sector in terms of GDP growth. However, the increasing number of the labor force could not be accommodated in these sectors annually. Therefore, a large number of semi-skilled and unskilled workers leaving the country to work as migrant workers. In search of opportunities, workers are moving from rural to urban areas. One the one hand, this has created a shortage of labor force in agriculture farming in rural areas, one the other hand, small-sized manufacturing, and service sector could not provide employment opportunities. As a result, a large number of the workforce employed in the informal sector. Hydropower and tourism are two viable sectors providing employment opportunities and ensure the growth of countries. But it needs a huge investment that could not be supported by the current volume of domestic savings and foreign investment. The increasing trade deficit created pressure in the national treasury. The earnings from remittances mostly spent on consumables. There are improvements noticed in the Doing Business Index. However, the current level of poverty, school completion rate, domestic and foreign investment, and workforce skills, the motivation of entrepreneurs, and bureaucracy could probably remain the most hindering factors reaching the status of developing countries in the next ten years.

In the forefront of the economic and business environment, the Nepalese ERs theory has to evolve from the viewpoint of creating employment opportunities, reducing poverty, eradicating child labor, attracting foreign and domestic investors, minimizing the gap of the balance of trade and balance of payment, development agro-based industries, minimizing bureaucratic hassles, developing human resource, and production of quality products. The GoN together with the private sector has to be committed to increase investment in hydropower, tourism development, increase domestic saving and investment, develop entrepreneurship and human capability,

incentivize the value-adding high-tech business and follow an aggressive economic and business diplomacy with the neighboring countries.

Turning to Nepalese culture, Nepal is a secular country with the highest Hindu population. Amidst this situation, the challenge is to protect interests of other religious groups of people too. In a multi-ethnic society, the dominance of a few castes could create differences and disregards the voices of different groups of people. Considering this situation, in the last decade, the GoN has adopted a policy of inclusiveness to hold some positions for ethnic and disadvantaged groups of people in public administration. As a result, the participation of women, different ethnic communities, and disadvantaged groups have been on the rise in civil service, army, police force, and public sector enterprises. At the entry-level merit-based system prevails. However, for promotion and job assignments, a culture of favoritism still exists in organizations. Some appointments, including university authorities, secretaries, and CEOs are seldom merit and professionally designed. But the situation of the private sector is different in this matter. In the private service sector, the middle-level managers are finally appointed by the owners or through the connections with some interest group of people. In manufacturing, the appointment process is not transparent. The increasing number of educated Nepalese youths is prone to cross-cultural interests. Social media playing a vital role to make people conscious of caste system and surface the voices of the voiceless and contributed aware people on 'good' and 'evil' of social, political, and administrative culture. Nepalese youth increasingly having patriotic feelings and aggressively participating in business activities.

The exposure of Nepalese professors and youths in foreign universities has influenced conceptually and practically in the Nepalese ER practices and academic research. HR scholars embrace to apply Western literature and research tools and techniques.

The national culture of power distance originates from different regimes, family systems, caste systems, feudal attitudes, and extended in public administration and private sector administration. Nepalese high-rank decision-makers in the civil service embrace power distance and engage in getting political favors. A servant leadership approach is lacking among high-profile civil servants. This trend has been continued generation to generation at different hierarchy levels in Nepalese public administration. The main goal of a servant leader is to serve by sharing power, to put the need of the people first, and to create an environment to ensure the contributions of people as much as possible. Because of the lack of such feelings among the leaders, there are inherent inequalities, centralization of power, subordinate expects to be told what to do, and the ideal boss is a benevolent autocrat. The report by the British Academy-UK (2018) states that politicized and nepotistic civil service leaders and management resulted in a low level of job satisfaction, trust, and the ethical behavior of the civil servants. In the private sector, ERs practices influenced by investors, owners, and their family members. ERs system, in private organizations, is less professional, and management policies are owner regulated.

Interestingly, female student enrollment is higher than the male counterpart in higher education in the last three years. This trend could have a significant impact on changing the culture of how women should be treated at home and work in the future.

A kind of demonstration effect is there among the female population for enrolling in schools and colleges and joining formal sector jobs. From this discussion, it appears that the changes in national culture will have an impact on the ERs system. In this situation, the choices of the ERs system are on to manage high power distance culture; to control dominance of limited castes of people; to increase representation of multi-ethnic people at work; to harass nepotism, favoritism, and undue elite connections; to control corruption, and to make the management system more professional.

Concerning institutions in Nepal, the school system starts very late due to a long feudal mentality of the Rana regime that has ruled the country for 104 years. In the last two decades, the number of school doubles and student enrollment is on rising accordingly. However, the quality of the teacher and the level of transfer of knowledge is less than expected. In a recent examination of primary school teachers, only 8% out of 66,562 attendants deserved to get a teaching license (Online News, June 25, 2020). GII weakly ranked the country in respect to knowledge, technology and creative outputs (GII 2019). The number of students completing a higher secondary level is below the ratio of enrollment in primary education. Many children left schools at an early age due to their inability to continue to study further.

Except for three specialized universities—Nepal Sanskrit University, Lumbini Buddha University, and Agriculture and Forestry University, the rest of the universities are offering similar nature of courses and degrees. The quality of higher education questioned by different corners of society. As of 2020, only 3.4% of HEIs accredited. The students receiving technical degrees are attracted either to work or to study abroad. As a result, the country suffering from a situation of brain drain on the one hand, and scarcity of trained and skilled workers one the other.

The interest in vocational education, especially in nursing and medical areas, has been increasing. However, due to a lack of employment opportunities, this trained workforce expedites to go abroad for better job and career opportunities.

The volume of scientific research and publications is meager (UGC 2020). The country lacks highly trained researchers, and therefore, only a few research works have published in internationally reputed journals. The country is behind the developed and emerging countries in terms of quality of education, research institute prominence, and research outcomes.

The turning point came after the Constitution structured into seven states and 753 local bodies. The Constitution has defined the power-sharing model among three constituencies, and this process follows a number of the central authority power to decentralize or share, or devolve it. The model of the power-sharing provisioned by the Constitution among three political levels is complex. They share the power on ER dimensions, such as social security and employment benefit, trade unions, settlement of industrial disputes, labor rights, and other disputes related matters. Further, Federal institutions share power in case auditing, industries and tourism, insurance business operation and management, poverty alleviation and industrialization; scientific research, science and technology, and human resource development, and; employment, and unemployment benefits. Implementation of these power-sharing initiatives requires political commitment and institutional arrangements. The State governments also share responsibilities with the local government in different matters. All of these

responsibilities imparted only if civil servants from Ministerial level to the local level work in coordination. Since institutional culture in Nepal is highly bureaucratic, and the degree of power distance is high, cooptation among these levels is at high risk. The state of confusion is prevailing in the matter of decentralization, devolution, and power-sharing among these levels and thus creating possibly an institutional barrier. In the Federal structure of the country, if government institutions, at all political levels, fail to plan and coordinate activities in time, it is hard to reach sustainable goals. Study on Nepal Civil Service and Restructuring of the State (GoN/UNDP 2014) describes that civil servants prefer to work at convenient places and at the center, there is no performance-oriented culture, their performance is not linked to the incentives, and they have a tendency of avoiding accountability. Schloss (1980) noted that lack of planning information, poor supply of skilled manpower, poor communication system, the mismatch between planning and financing, lack of coordination among administrative units, and a high degree of centralized decision making as some of the major causes of planning failure in Nepal. This situation still prevails in Nepalese administrations from federal to the local level. Thus, a sustainable ERs system is required to grow and run organizations from Federal level to the local level in order to remove these barricading factors.

Corruptions and irregularities are reported frequently in international reports, online news, newspapers, and social media. Whatever is the volume of corruption prevails, will not justice a large number of unemployed and migrant workers. Nepal Corruption Report (2017) states that "pervasive corruption is a major challenge for foreign companies in Nepal. Kickbacks and facilitation payments are widespread in public procurement and when registering a business." Corruption reduces competitiveness and significantly increases the costs of starting a business. Further, the courts plagued by corruption. The Prevention of Corruption Act is the country's principal anti-corruption law; it criminalizes corruption, bribery, money laundering, abuse of office, and facilitation payments in the public and private sectors. However, implementation and enforcement are inadequate, leaving the levels of corruption in the country unchallenged." According to Transparency International (2019), the country stands in 113th position out of 180 countries in corruption record. Corruption practices not only sensitizing the media but also frustrating people in general. To an extent, the CIIA taking few measures to control corruption in government sector organizations. However, unless a strong political commitment is built-up, it is unlikely to control corruption. There is a need to strengthen CIIA from the central level to the local level with adequate and qualified manpower. At the same time, behavioral change of high profile civil servants is imperative.

A large number of public sector enterprises have sold out to the private sectors in the 1990s. Some of the public enterprises already closed, and some are not performing well to recover the accumulated losses. Except few, these enterprises neither present the model of professionalism to the private sector nor adding value to the product. For a long time, they remain as 'white elephant' for the State.

Private sector institutes, including cooperatives and small business units, are not transparent in their management system. These institutes managed by the personal whims of the entrepreneurs. Perhaps, due to the short term interest of the owners

and, managers professionalism not developed in their management system. Local and international NGOs are also not so transparent in their management system. The government aggressively promulgated several acts and regulations to promote the transfer of technology, attract foreign investors, develop entrepreneurship, to prohibit child labor and to provide social security to the workers in formal and informal sectors. In the Doing Business Index, Nepal is in a good position among SAARC nations. Now the time has come to improve efficiency at the firm level. Child labor problems still exist, threatening fair trade practices. Despite efforts from the government, institutional effectiveness is not satisfactory.

Although Nepal claims of achieving almost all of the Millennium Development goals (2000–2015), its impact is varied across different geographic regions, communities, and gender (GoN 2017). The country has now challenge to achieve 17 Sustainable Development Goals to transform from the status from the least developed country into a developing country.

Regarding the trade union movement in Nepal, evidence indicates that Nepal passes through active trade union movements over the past five decades. There are pros and cons of union movements in Nepal. On the one hand, unions contributed to the political moment to support political parties to change the country politically, and protecting the interest of their members; on the other hand, because of such moments, the country had suffered back in the process of industrial development. In recent years the union disturbance is declined in the private sector. Soon after the promulgation of Trade Union Act 1992, the union became free, and union domination over management increased in such a degree, no one could stop them. At one time, the union dominance reaches to the point that even their members observe a kind of the 'union aristocrats' emerged in Nepalese organizations. There are records of misuse of power by union leaders both in the public sector and private sector organizations where union leaders influence management at the time of promotions and transfers.

During 1991–1999 political instability provided foul playing opportunities, and industries suffered from strikes and lockouts. Even political parties and interest groups engaged in organizing strikes and resulted a loss in the GDP growth.

After 1990, a large number of institutes are created and having a significant impact on the development of human resources. These institutes supported the restructuring of the country, developed research and development culture, enhanced vocational competency of the people, offered vocational courses, and created peace and harmonious industrial relations. However, anecdotal and recent evidence indicates that further improvement and reform initiatives are imperative to transform institutes from central to the local government to make them ready to achieve SDGs.

What course of ERs that Nepalese organizations should take to achieve SDGs in the next ten years? The situation of Nepal is quite different from the West in light of the economy and business environment, national culture, and institutions. The unitary framework neglects the interest of multiple stakeholders because by nature and focuses on union-free employment relations (e.g., Fox 1966). Since unions are active in Nepalese organizations, the interest of the unions and management differs. Moreover, unions are closed to political parties and working as their sister organizations. In such a situation, it is difficult to overlook their interests. The hard HRM

is said to be culture-free and expects a 'tight fit' between corporate strategy and HRM strategy. In the Nepalese institute, complete hard HR practices will not be recommended due to non-strategic influences from institutional and political forces (e.g., Wright and McMahan 1992). A hard approach of HR will have the short-term orientation, emphasizes investment in individual capacity enhancement, and rewards provided based on performance results. Nepalese employers are short-term focused, and traditional technology requires not highly trained workers. This situation hitherto justifies the previous study (Adhikari 1992) that jobs are routine, and non-motivating an overall picture of the relationships of job design dimensions is not satisfactory in the workplace. The traditional type of technology constraining the need for job difficulty and variety, thus not motivating for employees to go on learning. The Enterprise Survey (IFC 2013) reveals that only 5% of the Nepali firms identified the trained workers as the constraints, and 8.8% of firms offer formal training that is far less than in neighboring or comparator countries. A large percentage of workers just have completed higher secondary education. Adhikari (2009) reveals the following performance-related challenges in Nepalese organizations: Lack of corporate culture, unproductive staff, lack of mechanisms to implement prevailing Labor Act, disintegrated business functions, and lack performance-based system, the distorted flow of communication and information, low pay level and rising absenteeism, and proliferating unionism. Such challenges clearly demand both hard and soft HRM practices. Since the GoN policies, rules, and regulations will have directly or indirectly impacts on HRM practices, it is hard to disobey the mandatory provisions related to CBAs and child labor and minimum wages. With keeping in mind some institutional arrangements in the provisions of the act, the government knowingly or unknowingly controlling HRM activities. With these regulations and control mechanisms, only an imperfect fit between HRM practice and corporate strategy could justify (Wright and McMahan 1992).

The implementation of exclusive soft HRM is not in practice in the sense of how Western literature explains. The soft HRM is associated with the human relation movement, the utilization of individual talents, and McGregor's Theory Y perspective on the individual. Past studies suggest that employees will commit to the work if they are trusted, trained, and developed and if they are allowed to work autonomously and have control over their work (e.g. Guest 1987; Handry and Pettigrew 1990, Legge 1991). However, the weak level of motivation at the different levels of management and administration, lack of coordinating approaches, increasing politicization in administration, lack of servant leadership approach of the top and middle managers weakening the level of employees' commitment in Nepalese organizations. As discussed earlier, the HRM practices, such as kinship management, power distance culture, and attitude of the employees to wait for the orders from the senior employees are creating hurdles for the perfect implementation of soft HRM practices. Perhaps, this situation has resulted in low-level employee commitment, poor communication, and feudal leadership styles at all levels of the organization.

Since Nepal ratifies SDGs, all three contextual factors should consider predicting the Nepalese ERs system in achieving milestones set forth to reach the status of developing countries by 2030. Both government and private sector organizations

have to opt for the HRM system and strategy concerning the interest of multiple stakeholders. The government has to regularize capital expenditure and increase the spending capacity of its institutes. It directly affects the employment and job security of workers both in formal and informal sectors. The quality of education should increase by the training and development of teachers and, at the same time, the research capacity of universities strengthens to produce impact making researches. The government has to invest to train and build human capital preparing for employment inside and outside the country. Equal employment opportunities related to acts and policies should strictly reinforce to ensure equality, inclusiveness, and decent work for all. Depending on the physical and human infrastructural base, both capital and labor incentive industries are required to develop. For the next ten years, priorities should be given to good governance, to strengthen the quality movement in schools and HEIs, to grow the agriculture-based and livestock industries, to develop entrepreneurship, to mobilize youth population, to enhance the capacity of industries, and to produce competitive workforce. Organizations have to integrate their goals and strategies to the SDGs. Therefore, sustainable employment relations policies and strategies recommended for Nepalese institutions. The goal of collectivity, inclusiveness, life-long learning, gender equality, productive employment, employment security, employees' integrity, motivation, and decent work for all could achieve through sustainable ERs. To address these SDGs milestones, institutions have to discourage administrative hurdles and corruption and extend cooptation and collaboration. For this, commitment required from all stakeholders, including political institutions from Federal to Local levels. It could be possible only when SDGs contained by the employment relations system of the public and private sectors. To make it more clear, considering the impact of environmental factors, the future employment relation framework of Nepalese organizations should contain the SDGs in their objectives, policies, and strategies. Nepalese HRM scholarships are, hitherto recommended to discourse on sustainable ERs philosophy attuned to our realities that go beyond the rhetoric, rational, and ideal HRM debate as discussed earlier. Only the sustainable ERs could emancipate the country from the status of the least developed country in the next ten years into the developing country and is the best approach for our organizations.

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Inclusive Business and Sustainable Rural Development in India: A Case Study of the AMUL Community-Based Food Chain

Naoto Shimokado

1 Introduction

In recent years, much attention has been paid to Base of the Pyramid (BOP) business, social business, and inclusive business. These are approaches to poverty reduction and sustainable development in developing and emerging countries. By integrating disadvantaged groups into the value chains of multinational corporations or local organizations as small-scale consumers, producers, distributors, or retailers, inclusive business contributes to poverty reduction through the creation of employment (Jenkins et al. 2010). However, while contributing to poverty reduction and economic development, these approaches are inadequate for sustainable development because they fail to take the development of local communities into consideration. To achieve the goal of community-based sustainable development, it is necessary to establish a community-based business in which BOP and local communities can be rewarded. Cooperative societies are one of the autonomous organizations that run community-based businesses involving the BOP. Their purpose is to meet social needs such as employment creation, education, training, and returning profit to the BOP through its business (Fauqet 1951; Pestoff 1992).

This paper investigates how community-based inclusive business, demonstrated in this case study of AMUL, the largest dairy cooperative in India, contributes to poverty reduction and sustainable development through effectively returning profit to the BOP.

Most studies of AMUL have been based on two perspectives. The perspective of cooperative movements considers AMUL a successful example of a cooperative society in rural development (Heredia 1997; Kurien 1997; Rajendran 2004; Chawla 2007; etc.). The managerial perspective, which regards AMUL as a rapidly growing producer in the fast-growing dairy market, reveals its competitiveness in marketing

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management and supply chain management (Chandra and Tirupati 2003; Bowonder et al. 2005; etc.). However, while these studies reveal the characteristics, significance, and advantages of AMUL in rural development or in the marketplace, they failed to bring these perspectives the solution to social problems in rural area and the managerial achievement in the market together.[1] Therefore, this study attempts to ascertain the mechanism by which AMUL realizes sustainable rural development by comprehensively considering rural development and the market from the perspective of the food chain and agribusiness. In addition, this study also investigates the differences among community-based AMUL, multinational corporations, and local companies.

2 The Movement Toward Sustainable Development

2.1 BOP Business, Social Business, and Inclusive Business

Besides profit making, solving social problems is also important for the survival of a business in developing and emerging countries. In terms of poverty reduction, several approaches, such as BOP business, social business, and inclusive business have been emphasized.

For example, by regarding BOP as self-reliant consumers and partners of co-creation, BOP business has made it possible for the BOP to participate in the market economy and to shake off poverty (Prahalad 2009; London and Hart 2011). Social business is a business model that aims to solve social challenges and meet the needs of the BOP by establishing autonomous management (Yunus et al. 2010). Inclusive business achieves poverty reduction by integrating the BOP into the value chain of a multinational corporation or a local organization (Jenkins et al. 2010).

These approaches intend to solve social problems, including poverty reduction. Yet, they focus mainly on economic development and are probably not sufficient to achieve sustainable development that includes the development of local communities.

2.2 Sustainable Development and Cooperative Societies

2.2.1 What is Sustainable Development?

Sustainable development is defined as economic development, community development, and ecological development (Fig. 1), and a balance of these three aspects is necessary (International Council on Local Environmental Initiatives 1996; Newman and Kenworthy 1999). In order to realize sustainable development in developing and

[1] Several studies refer to the importance of AMUL's system that connects small-scale producers and the market, e.g., Prahalad (2009).

Fig. 1 The consept of sustainable development. *Source* International Council on Local Environmental Initiatives (1996) and Newman and Kenworthy (1999)

emerging countries, it is insufficient to focus solely on BOP business, social business, or inclusive business. Overall poverty reduction requires a business model that simultaneously achieves development in all three aspects of business.

2.2.2 Cooperative Societies as a Plural Sector

It is widely acknowledged that multinational corporations, governments, and international organizations (e.g., the United Nations) have a great influence on the realization of sustainable development. For instance, many multinational corporations are carrying out creating shared value based management (Porter and Kramer 2011), and the UN adopted the 2030 Agenda for Sustainable Development.

However, regarding social problems and sustainable development, the balance of the government sector, the private sector, and the plural sector is of critical importance (Fig. 2). The plural sector consists of such entities as cooperative societies, nongovernmental organizations, non-profit organizations, and social movements. Because no sector is infallible, problems such as government failure, market failure, and community failure should be prevented by giving full assistance to all three sectors and maintaining the balance between them. Most important, to achieve sustainable development, the business or actions of the plural sector based in the local community is indispensable (Mintzberg 2015).

For India, in accordance with the concept of sustainable development and Mintzberg's discussion, rural poverty is a serious problem, and the realization of sustainable rural development is crucial. Social and inclusive business approaches carried out by the plural sectors based on local communities are thereby expected to be effective.

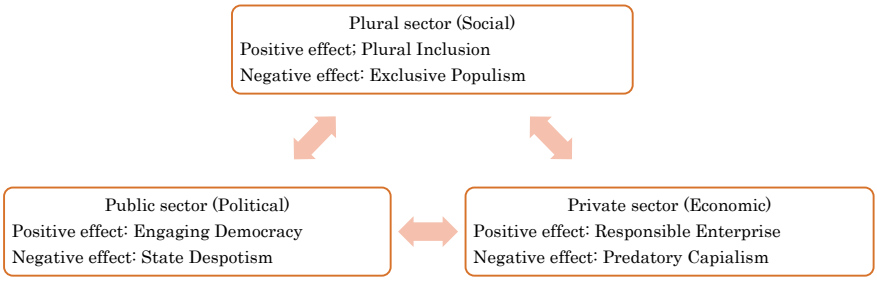

Fig. 2 Balance between the plural sector, the private sector, and the public sector toward sustainable development. *Source* Mintzberg (2015)

Local community-based cooperatives that satisfy basic human needs and play a major role in tackling social challenges in rural areas are an important part of the plural sector. Some, if not all, cooperatives that specialize in dairy and sugarcane have made remarkable achievements and have grown into large-scale agribusinesses by organizing small-scale farmers in India. Consequently, in this study we will focus on dairy cooperatives. Our discussion starts by considering the local community-oriented food chain.

3 Local Community-Oriented Food Chain and Dairy Cooperatives

In the rural areas of India, one of the major organizations in the plural sector is a cooperative society organized by agricultural producers, most of whom are small-scale producers and the BOP. Because the main rural industry is agriculture, producers' cooperatives, as subjects of agribusinesses based on an inclusive business approach, contribute to rural sustainable development. In order to make this type of business successful, a local community-oriented food chain must be constructed by reforming the existing agricultural product market.

This food chain has two features (Fig. 3). First, the agribusiness should adopt an inclusive business approach that involves small-scale producers into its value chain. Second, the agribusiness should also construct a food chain system that promotes returning profit to the producers and leads to local economic and community development. In other words, this cooperative food chain should serve as one of the most important and impactful approaches to facilitating poverty reduction and sustainable rural development.

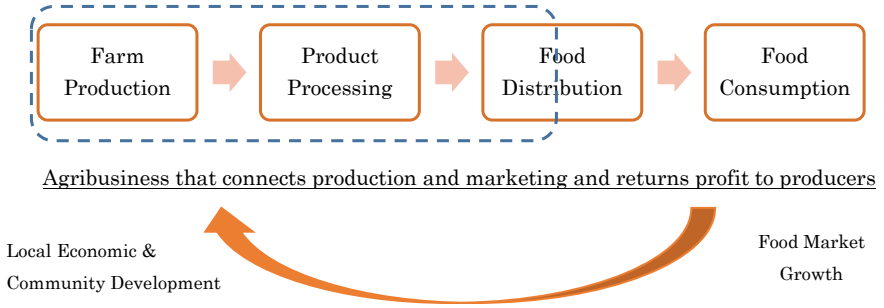

Fig. 3 Concept of a local community-oriented food chain

4 Objectives and Methodology

The purpose of this study is to examine the impact of cooperative businesses on poverty reduction and sustainable rural development using the example of AMUL, the largest dairy cooperative in India. The study adopts interviews and case study as its methodologies. The data concerning AMUL was collected from interviews and primary sources such as annual reports and publications.

5 The Case Study of AMUL

5.1 Basic Facts of AMUL and the AMUL Model

AMUL is the largest dairy cooperative group in India. It was established in 1946 in Gujarat State in west India as a Kaira District cooperative milk producers' union. AMUL's sales turnover, milk procurement, and producer members have continuously increased (Fig. 4). Its sales turnover boomed after the mid-2000s with India's economic growth. AMUL procures a daily average of 23 million liters of milk from producers in village dairy cooperative societies, and its sales turnover in the year 2019–2020 was 385 billion Indian rupee (Rs.) (Table 1). Accordingly, AMUL is now the largest dairy cooperative federation and dairy manufacturer and has the highest market share of dairy products in India.[2]

AMUL was a pioneer in dairy cooperatives in India. In particular, AMUL has built the AMUL Model, the business model that efficiently collects milk from numerous small-scale producers and sells dairy products in the nationwide market. In addition, by becoming a channel captain in dairy distribution, AMUL has established the system that returns most of the sales profits to producers (Kurien, 1997). In 1973, AMUL and other district cooperative milk producers' unions in Gujarat established

[2]MarketLine Industry Profile; Dairy in India June 2017.

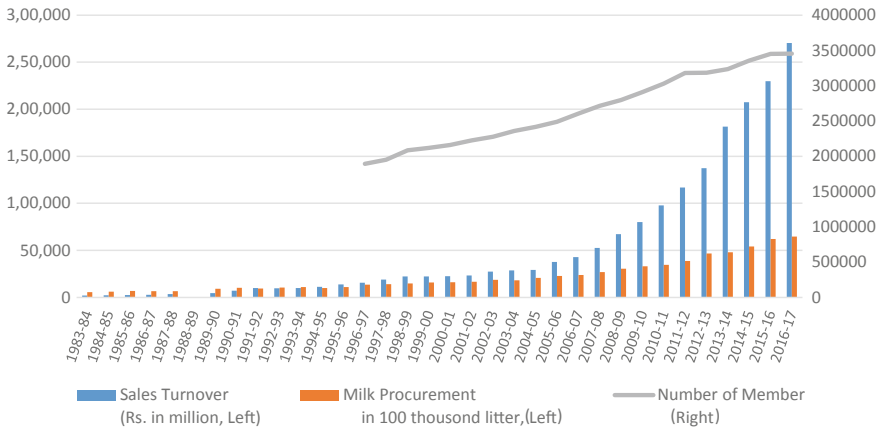

Fig. 4 Overview of AMUL's growth from 1983 to 2016. *Source* GCMMF Annual Reports

Table 1 Overview of AMUL in 2019–2020

Sales turnover	Rs. 385 billion (US$5.1 billion)
Milk procurement (in 2018–19)	Avg. 23 million liters/day
No. of producer members	Approx. 3.6 million
No. of district unions	18
No. of village dairy cooperative societies	18,600

Source GCMMF web (https://www.amul.com/m/organisation; 2020/05/31)

Gujarat Cooperative Milk Marketing Federation (GCMMF). Through GCMMF, AMUL was able to organize a vertically integrated federation that consists of three layers (Fig. 5).

1. Village Dairy Cooperative Society (DCS) to which producer members belong;
2. District Cooperative Milk Producers' Unions that process dairy products and provide support programs to producers; and
3. GCMMF as a marketing organization for AMUL.

For the small-scale producers, mass production and marketing are integrated and the agribusiness returns most of the profit to the producers.

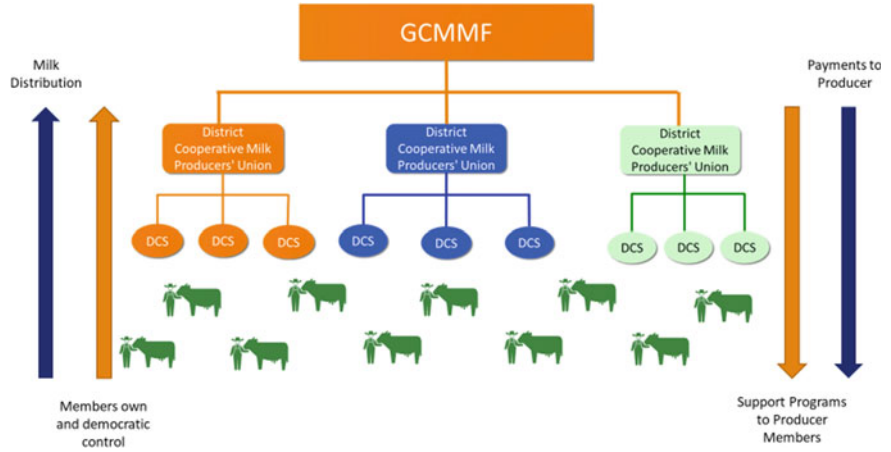

Fig. 5 Concept of the AMUL model

5.2 AMUL's Business and the Impact of Local Economic and Community Development

AMUL's major business in rural areas is the procurement of raw milk from producers through DCS, and it has a significant impact on rural poverty reduction. It aims to reduce poverty by creating opportunities for dairy farmers to improve their incomes, especially small-scale producers.

In order to secure and increase a stable income, assured access to sales channels and the achievement of fair milk prices are crucial issues. In the case of AMUL, the terms and conditions of the milk trade between AMUL and the producers must be considered. It is important for producers whether the milk prices offered by AMUL are higher or lower than that of other buyers such as local middleman and private dairy manufacturers. This section discusses how AMUL is trying to solve these issues.

We first focused on most producers' sales difficulties. In other words, the focus is on the operations of village dairy cooperative societies under AMUL. In AMUL, milk is collected not only from members, but also from non-member producers in the local communities where DCS have been established. The two groups are treated equally regarding the purchase conditions and price. Furthermore, if the milk meets quality standards, all perishable milk brought by the producers is purchased by the district cooperative milk producers' unions through DCS. Accordingly, Indian dairy farming is dominated by small-scale producers with approximately one to five head of livestock. The DCS, which has established a system that purchases all milk from any producers, are essential for them to solve the problem of selling their milk.

In addition, milking cows or buffalo must be milked every day. Therefore, collection centers operated by DCS are open every day, including weekends and holidays. For example, DCS under AMUL basically collects milk twice a day, in the

Table 2 Overview of DCS operations in AMUL

DCS	Paneshvar (Vankal Village)	Kudsad (Kudsas Village)	Adalaj (Adalaj Town)
District Union	Sumul Dairy (Surat Dist.)	Sumul Dairy (Surat Dist.)	Madhur Dairy (Gandhinagar Dist.)
Milk Collection Time	6:00–8:00 a.m 6:00–8::00 p.m	7:00–8:00 a.m 5:30–7:00 p.m	5:30–6:30 a.m 5:30–6:30 p.m
Procurement Amount per Day (average)	7000 L	1000–2000 L	N/A

Source Interviews with each DCS

morning and evening (Table 2). Furthermore, because milk is collected every day, dairy processing plants operated by each district union also operate 365 days a year.

Second, we focused on the issue of the purchase price of milk. The continuous increase in the number of members and the amount of milk procured form the basis of AMUL's growth. It is considered that the rise in the purchase price of milk is the main reason why membership is increasing. The price by GCMMF has risen continuously from Rs. 183/kg fat in 2000–2001 to Rs. 680/kg fat in 2016–2017 (Fig. 6). However, the price depends on the determination of each district cooperative milk producers' union and differs slightly with district unions. For this reason, in order to achieve a higher purchase price than that of competitors such as middlemen and private dairy manufacturers in the region, each district union's flexibility determines the price according to its competition.

Table 3 shows milk purchase prices between the Kaira District Union and the Surat District Union in AMUL and Nestle India. The prices at Kaira District Union (Rs. 475/kg fat) and Surat District Union (Rs. 511/kg fat) are relatively higher than those of Nestle India (Rs. 375/kg fat). Hence, although there are differences in milk

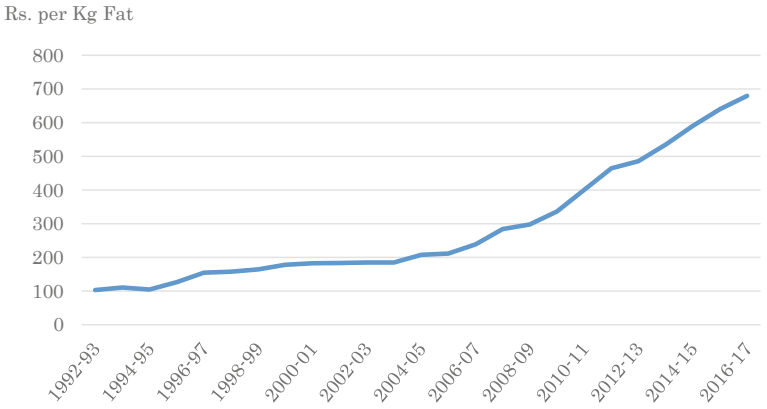

Fig. 6 Milk purchase price by GCMMF from 1992 to 2017. *Source* GCMMF Annual Reports

Table 3 The milk purchase price of each organization, 2012

District Union	Kaira Dist. Union	Surat Dist. Union	Nestle India
Milk Purchase Price (Rs./kg fat)	475	511	375 (approx.)

Source Each District Union's Annual Reports and Biswas et al. (2013), p. 25

production areas, AMUL's business in rural areas may have a greater impact on producers than that of Nestle.

Finally, besides the purchasing system, AMUL also provides many programs that assist its members in enhancing their management capability and the skills required in milk production. There are also interest-free loans for members attempting to increase productivity. This comprehensive membership support has contributed to community development by encouraging self-reliance.

Therefore, the operations of DCS under AMUL has helped producers sell milk, create opportunities to earn income, and improve their income through rising purchase prices. Moreover, AMUL's agribusiness in rural areas makes a significant contribution by reducing poverty among producers and increasing rural development.

5.3 AMUL's Strength: Mass Marketing

AMUL brand products are sold through 59 sales branches owned by GCMMF, 10,000 independent distributors, and 1 million retailers. So far, GCMMF has established sales branches in 26 states and 3 union territories among India's 29 states and 7 union territories.[3] Its powerful marketing channels cover the whole country, including the areas without modern retailers.

Figure 7 illustrates the overview of GCMMF's marketing channels and its sales share between small retailers and modern retailers such as supermarkets and hypermarkets. Small-scale retailers, most of which are traditional mom-and-pop stores,

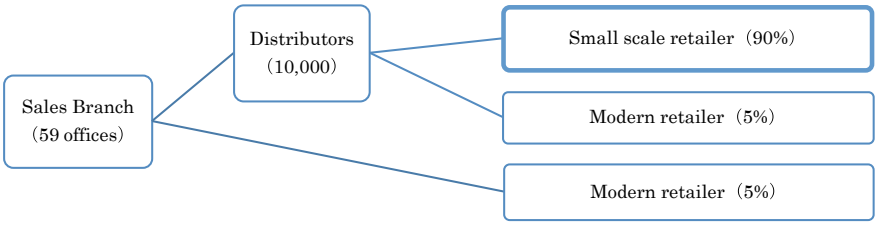

Fig. 7 GCMMF's marketing channels and sales share. *Source* Interview with GCMMF personnel

[3]GCMMF Annual Report, 2016–17.

make up 90% of total sales. Accordingly, because the distribution systems of India and some other developing countries are dominated by those traditional and small retailers, it seems that GCMMF has constructed marketing channels suitable for India.

By virtue of this powerful nationwide marketing network, AMUL realized long-term growth by purchasing all the products of its member and non-member producers. Moreover, its growth resulted in sustainable development of both the economy and local communities by increasing the purchase price of milk and providing programs to enhance the management capability and skills of its members.

6 AMUL, Multinational Corporation, and Local Companies in the Dairy Market

By comparing the profitability of AMUL with that of multinational and local dairy corporations, the characteristics of AMUL's agribusiness model becomes quite clear. Besides AMUL, there are also multinational dairy corporations in India such as Nestle India and local dairy companies such as Hatsun Agro, one of the largest private dairy companies in India. While purchasing milk from the farmers, these two corporation types also provide financial and technical support to improve milk productivity[4] and act as contributors to sustainable rural development (Vandeplas 2013). However, compared with the multinational and local companies in the private sector, AMUL in the plural sector has a fundamentally different pattern of returning profits to producers. As illustrated in Table 4, Nestle has a gross profit margin of 56.5% and Hatsun Agro's is 27.9%. In sharp contrast, the profitability of each district union in AMUL is from 7.7 to 15.0% and this lower profit margin is worth notice. It is caused by a purchase price is much higher than that of its competitors, especially

Table 4 Profit rate of each organization

	Gross profit margin (%)	Operating profit margin (%)
Kaira Dist. Union	7.7	1.4
Surat Dist. Union	15.0	1.8
Gandhinagar Dist. Union	8.7	0.9
Nestle India	56.5	17.0
Hatsun Agro	27.9	4.4

Note Sales turnover of Nestle includes not only dairy products but also other products
Source Annual Reports of Kaira, Surat, and Gandhinagar district unions, Nestle India, and Hatsun Agro

[4]For example, Nestle provides the following supports; https://www.nestle.in/csv/rural-development/milk (Nestle).

Table 5 Distribution of net profit of each district union in 2017–18, (Rs. in Lakhs)

	Kaira Dist. Union	Surat Dist. Union	Gandhinagar Dist. Union
Reserve fund	622.67	171.50	55.76
Education fund	3.00	3.00	3.00
Dividend	970.35	102.75	33.13
Dividend equilization fund	671.00	81.74	–
Cooperative education publicity fund	–	20.43	–
R&D fund	–	81.74	–
Member welfare fund	–	–	33.45
General fund	178.93	183.93	97.70
Charity fund	44.73	40.87	–
Total net profit	2,490.68	686.00	223.06

Note Rs. 1 lakh = Rs. 100,000
Source Annual Reports of Kaira, Surat and Gandhinagar district unions

Nestle's. Furthermore, the difference in the operating profit margin between them is outstanding. The operating profit margin of AMUL, Kaira, Surat and Gandhinagar district unions, is less than 1% or 2%, while that of Nestle is 17.0%.

AMUL is a cooperative society. It not only has a low gross profit margin and operating profit margin, but it also spends most of its net profit on producer members. In other words, each district union distributes the net profit as dividends to its members according to the amount of milk they supplied, or it uses its profits to reserve funds for capital investment and education for the membership (Table 5).

AMUL's competitors, the multinational dairy corporations and the local dairy companies do have differences in profitability, but they still have one thing in common. That is the pursuit of profit. On the contrary, AMUL, as a cooperative in the plural sector, has built a business model that gives high priority to meeting the needs of the producers. One of its principles is returning most of the profits to its members, and even to non-members, instead of to shareholders. Due to this fundamental difference in organizational policies and philosophy, it seems obvious that the companies in the private sector could not return as much profit to producers as AMUL does.

7 Conclusion

There are several implications of this case study. First, a three-layer association called the AMUL Model, allows small-scale producers to join a system that integrates mass production and marketing. Additionally, AMUL has experienced long-term growth

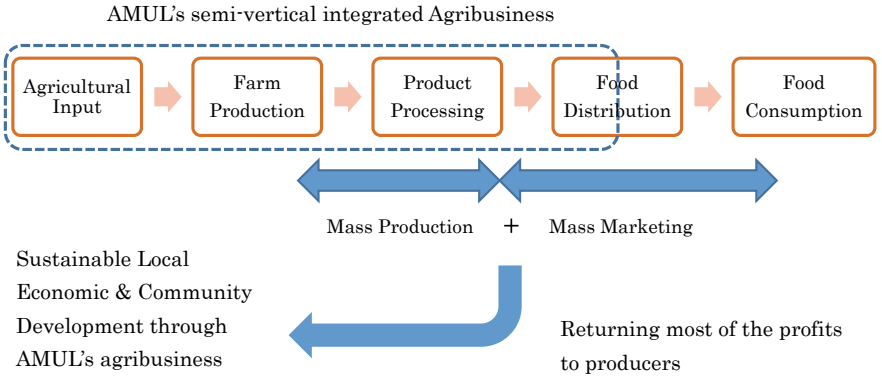

Fig. 8 Relationship between AMUL's agribusiness and local sustainable development

and provides both a higher purchase price and enriched support programs to its members.

Second, AMUL has established the agribusiness model that returns the most profits to small-scale producers in rural communities by building nationwide marketing channels. As a result, the producers obtain benefits, such as maximized profits from big agribusiness and support programs that lead to self-reliance.

Finally, AMUL is a cooperative society in the plural sector. Compared with a multinational or local commercial corporation in the private sector, producers rather than shareholders benefit most.

Consequently, it is possible to conclude that through employment creation, poverty reduction, and satisfaction of producers' needs in rural areas, AMUL's agribusiness model has contributed to sustainable rural development, especially the development of local economies and communities (Fig. 8).

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Sustainable Brand Development by Product Personalization: The Attitudes of Russian Customers

Gennady Azoev, Vasiliy Starostin, and Ekaterina Sumarokova

1 Literature Review

Mass customization was anticipated by Toffler (1970), defined by Davis (1987), and further explored in 1990s. Pine and Joseph (1993) described it as "*the mass production of individually customized goods and services*". As companies adapted broader and deeper customizing techniques, customers would receive more individualization.

The world of goods and services is not stable any more. The process of controlling becomes more complicated in terms of operation efficiency. When a company encourages its business with a new management methods and new technologies, they could find a way to a new system of doing business.

"*Customization, the ability to provide individual customers with tailor made products, has become possible because of programmable automation and flexible manufacturing, coupled with information technology advancements that enable marketers to collect personalized information*" (Kotler 1989; Pine and Joseph 1993).

This is the situation of product personalization when the organization supplies their customers with personal products which relate to a particular customer. There are not the average products any more (Fig. 1).

Demand fragmentation represents the tendency towards increasing of popularity of customized products. The market used to be an aggregate of mass products that were demanded by the majority of consumers. But as soon as customized products were provided, the market fragmented into a great number of heterogeneous

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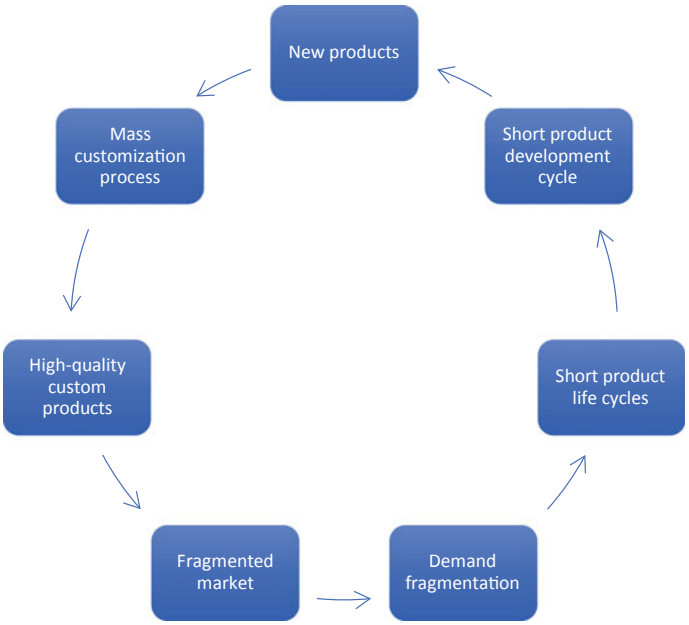

Fig. 1 The paradigm of mass customization (*Source* Pine and Joseph 1993)

segments that desired a particular product with particular number of features (personalized products). "*Creating a high level of variety in production can not be accomplished through the specialized mass production techniques; creating variety requires flexibility in manufacturing processes*" (Pine and Joseph 1993).

In order to change the production system, Pine suggests to use a "Market turbulence" as an indicator. Market turbulence is an unpredictable change in market environment and the significant level of uncertanty in such variables as demand factors, competitive rivalry, supply conditions, substitutes etc. According to the rate of "Market turbulence", Pine suggests to provide a customization strategy.

The competitive activity is increasing day after day. "*Today it's almost impossible to develop product or service without seeing a competitor offering the same within a few weeks*" (Lindström 2002). Consequently, the strategic preference of customization cannot be overestimated in terms of condition in the current market. Application of the strategy of customization also depends on the industry. It should be noted that some markets are more exposed to customization than others.

Content analysis of consumer interests revealed customization in four major types which are based on degree of product transformation (see Fig. 2). During the time, corporate production strategy passes through the several stages: mass production, mass customization, individual customization.

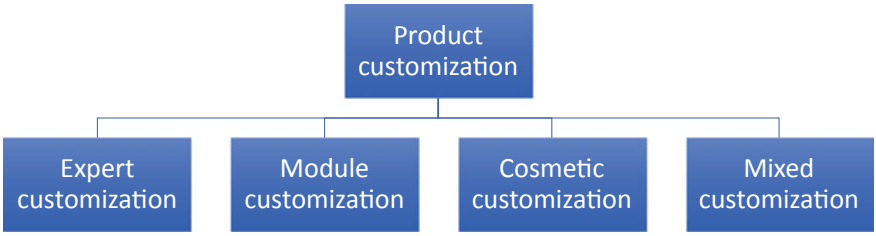

Fig. 2 Extents of customization (*Source* The authors)

1.1 Expert Customization

This is one of the most complicated types of customization. The rate of customization is based on the experts' opinion of what will fit customers' expectation more accurately. Customization levels are defined by the manufacturer. This type of personalized products requires a wide range of market research, especially analysis of the customers' needs. Expert customization supposes the high rate of product changing and personalization. In other words, consumers receive totally personalized product. It should be noted that expert customization requires the highest level of price premium, because of the complexity of the work.

1.2 Module Customization

Module customization also allows consumer to order a quite personalized product. Mass customization divides the manufacturing process into the several modules in order to create different final configurations. Effective module customization allows to keep prices for this type of products on the level of mass products. This is one of the main advantages. The main thing that distinguishes module customization from expert customization is that in this situation a consumer can choose the specification by himself. There are several modules that could be used in a particular product model. But this concept is reasonable only in a situation when the potential buyer is aware of peculiarities of certain components.

1.3 Mixed Customization

Mixed customization combines the elements of expert and module customization. Some of the product elements are based on the customer research and presented by the manufacturer. Other features are chosen by the final consumer. In other words, there are several product variants that could be completed with a range of different features that are chosen by buyer.

1.4 Cosmetic Customization

This type of customization is the simplest, but allows customers to feel that they are involved in product development. Cosmetic customization means the minimum changes in external appearance of the product. It could be packaging, colors changes or some minimum design configuration. However, the fact that consumer receives personalized product, creates the additional value for the brand.

But scientific knowledge requires the support of practical results that assert the validity of theoretical issues. The main purpose of current research is to explore how the product personalization affects brand-value and what is the role of customizations in the brand-building. Are the personalized products more valuable for the consumers and why?

The aim of current research is to obtain and analyze empirical cases in order to check the vitality of the theory. The main research objectives should be supported by collecting the evidence in real life.

The research field lies in the industry of musical instruments and is focused on the electric-guitars production. But as the field of the research is very wide, four major players of this industry were chosen. These are:

- Fender Musical Instruments Corporation
- Gibson USA.

These companies have a significant range of brands that are highly valuable on the market. However, two brands were selected to provide further research:

- Fender®
- Gibson®.

The goal of current study is to examine these two brands from the perspective of customers' personalization and analyze how the custom electric guitars affect the value of the brand from the Russian consumers' point of view.

The main expectations of the research could be formulated as follows:

- Analyze the significance of the product personalization in the guitar industry
- Find the evidence that customization of the instruments creates brand value
- Define what are the underlying motives of purchase of custom-made guitars in Russia
- Explore the extent of the customization demanded and valued by customers in Russia
- Identify the correlation between customers' groups and different extent of product customization?

But it should be also mentioned that all these research expectations are just underpinning sub-objectives which allow to gain main research objectives which are already stated.

The main research hypothesis could be formulated as:

H1: Product personalization affects brand's value in such a way that personally customized products and services are more valuable for customers in Russia.

2 Research Design

The overall philosophy of positivism is the most appropriate for the nature of the current research and for the vision of the author. The analysis of empirical evidences should be combined with theoretical findings and hypothesizes. The research process tends to be independent of any subjective drivers and the way of getting qualitative and quantitative information is under the control of the researcher.

The current study is based on the deductive approach which states that a theoretical hypothesis is a primary impetus and research design is provided in a way to support theoretical ideas and findings. The deductive approach is usually applied in by the philosophy of positivism and characterized by the rigorous testing of the theory. Current study is directed to combining the theoretical concepts with practical data. The theoretical review helped to develop several hypothesizes that are based on the scientific concepts. There is a strong need to explain the relationships between the variables and bring together theory and practice to ensure the validity of data.

The major forces that influence the research design are research questions and research objectives. In order to achieve objectives, the research design is developed.

The preliminary Research Design Structure contains the following (see Fig. 3).

The obtained information was divided into two parts according to the nature of data. Primary research provided data for current study, but the idea of secondary research was to obtain the existing sources of information.

The choice of the research strategy is influenced by the approach which is being used and by the results that is going to be obtained. The choice of the research strategy is influenced by four main factors:

1. Expected costs
2. Time needed
3. Research questions
4. Skills of the researcher.

Taking into consideration the research field and title of the study "Product personalization as a brand added-value" the major research questions are formulated as following:

- How does the product personalization affect brand values?
- What is the preference of providing customization as an instrument of personalization?

The theoretical review has shown a number of academic finding on current research field. Thus, research questions were raised in order to explore the problem into practice and check its validity.

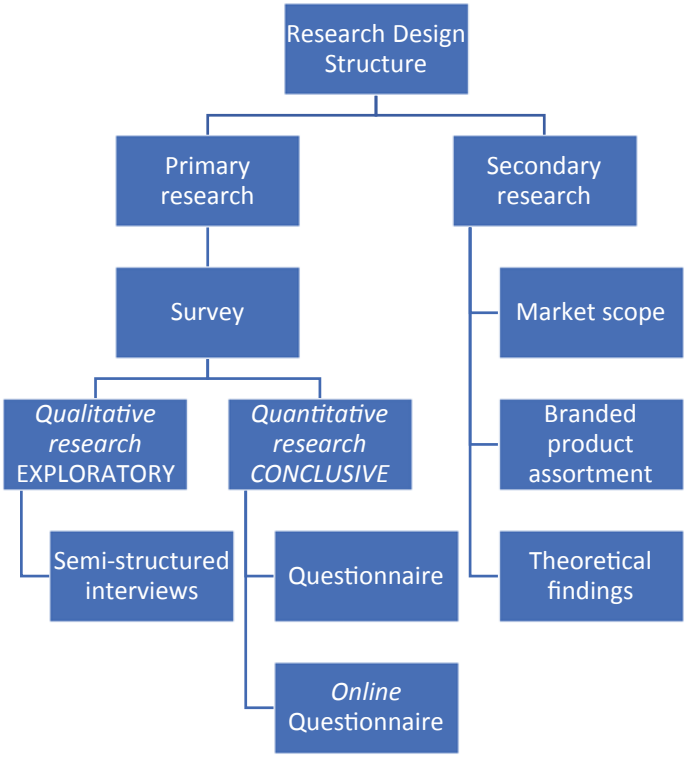

Fig. 3 Research design (*Source* The authors)

The role of the objectives is to direct the research process to a right way and to specify the venue of the investigation. They are linked together with a research questions and mirror the field of the study.

Current Research objectives are:

- To explore the role of product customization in the process of value creation
- To demonstrate that personal products are highly valuable for the customers in Russia
- To analyze the guitar industry from the perspective of product personalization.

3 Results and Discussion

Authors mention, that basically practical research has supported all theoretical hypothesis and academic findings which have been formulated. Research has been provided with a methodological plan. The research objectives have been gained, but the further need is to analyze the results from the point of view of academic theory in order to make conclusions which bring together the theory and practice.

Qualitative research was conducted in the form of personal face-to-face interview. All respondents in Russia demonstrated a similar nature of answers. The crucial fact was that the responses supported the hypothesis of the research and confirmed the theoretical issues.

The following results have been collected:

1. *Guitars ownerships and general preferences and expectations of the instrument*
   The main characteristic of an instrument is its sound and playability. In most cases it is the most powerful driven force for buying a guitar. Playability and sound are the most desirable features of an instrument and the absolute majority of guitar players expect these crucial characteristics to be appropriate.
2. *Attention to particular brands and reasons for that*
   Famous guitar brands are still given a priority by the first choice most musicians. They used to pay attention to them and trust their quality and history. They strongly believe, that a famous brand does take care of all instruments it produces, and each particular musician can be sure that instrument of a certain brands has a strong quality background. Very often the fact of the ownership is a significant motive to play this or that branded instrument.
   Another point that should be mentioned is that the absolute majority of owners of some famous brands, in fact identify themselves with the society of professional musicians and with lifestyle, which is represented by that brand.
3. *Guitar as a private instrument, personal attributes*
   There is some evidence that guitar is treated by musician as a private and individual instrument. To some extent the guitar becomes a part of the appearance and image of the owner. According to the research findings, respondents consider the instrument as a personal attribute, which doesn't just play the music, but represent the individuality of the musician.
4. *The idea of uniqueness of the musician (user) and linkages with a personal instrument*
   Practice shows that musicians expect the companies to treat them as individuals. They normally consider themselves as unique players, who have individuality. Unique style was not important. You must be a personality, and only then a musician. In this case the idea of personal instrument is vital. All respondents are interested in owning a personalized instrument, which characterizes them as individuals.
5. *Self-expression and self-esteem through the musical instrument*
   Guitar is not just a tool of creating music. To some extent it is an accessory of musician. And as long as each musician is unique, he or she expects to look different. Respondents have supported the idea that the owner of the instrument expresses himself through the guitar. The instrument should suite the owner not only in terms of the sound it creates, but in the way, it correlates with the nature of the musician. Customization gives an opportunity to create this value.
6. *Customization which brings the value to the guitar*
   Customization definitely adds value to the instrument. The idea is vital and finds the positive feedback from the respondents. In most cases, customization is a

feature which adds the individuality to the product. Most of respondents believe that only a strong and famous producer can make a successful attempt to create customized products.

Quantitative research has been conducted in a way of survey, using self-administrated online questionnaires. The results basically support the theory but vary in more extent than results from qualitative analysis. Sample size consists of 107 respondents with a following characteristics:

- Nationality: Russian Federation
- Sex: Male and Female
- Age: 17–60 years old
- Attributes: Guitar owners, collectors, musicians
- Occupation: students, music students, individual entrepreneurs, office workers
- Guitar playing: Intermediate, Upper-intermediate, Advanced, Professional.

Consumers face the situation when they could fully rely on the highest quality of certain brands. Thus, some other values come to the front and to create the preference for a particular brand. Consequently, the goal for producers is to draw attention to other product features which will create the brand value (see Fig. 4).

Analysis of qualitative content of preferences shows the distribution of customers' group according to the type of customization (see Fig. 5). Professional musicians mostly prefer fully personalized product. It means that Self-esteem and Self-actualization needs are coming to the front especially for this segment of buyers. Moreover, professional experience allows them to specify their requirements in technical language in order to have a personal product.

Expert customized instruments (manufacturer's specification) have a second rate of popularity. The main target audience which prefers this type is experienced players. They fully trust the manufacturer and rely on the brand appearance which in fact is

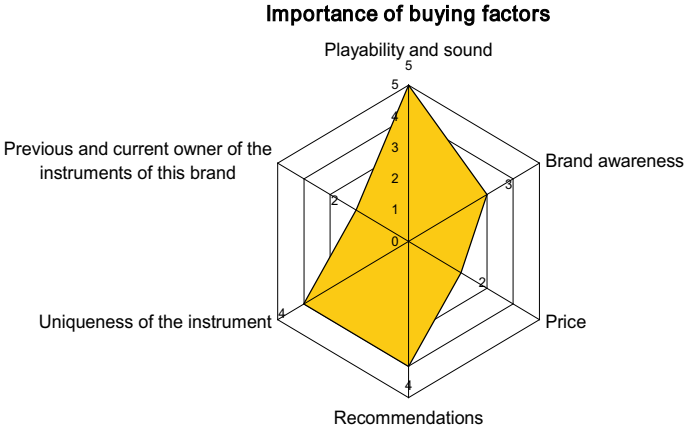

Fig. 4 Importance of buying factors of musical instruments (*Source* Survey results)

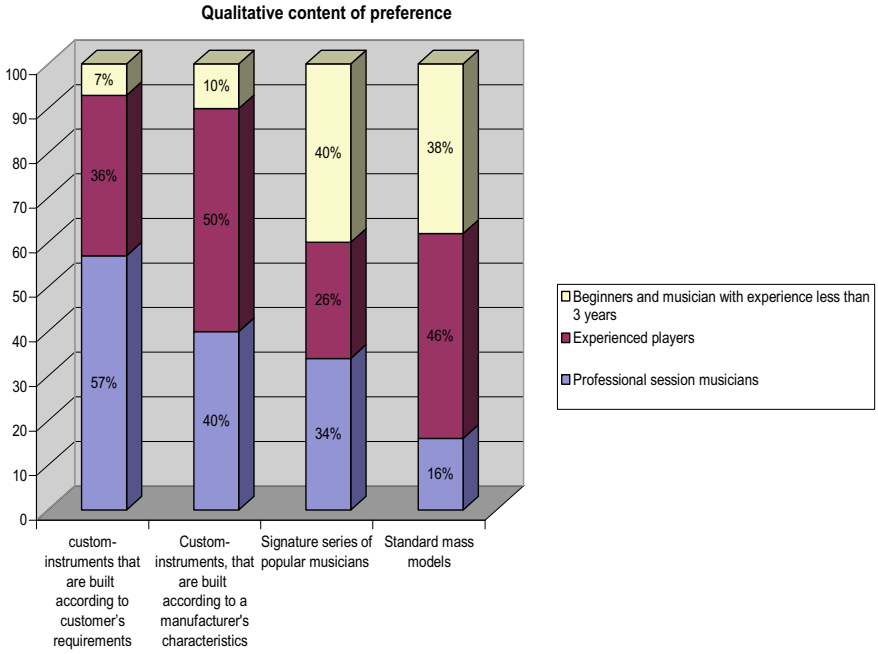

Fig. 5 Qualitative content of preference

as added-value. Signature series get added value from the reference-group effect. Beginner-players are more influenced by this effect. That is why the biggest part (46%) of all respondents who prefer signature models refers to this segment. Brand value for them is generated by two major factors: brand personality and personalization (see Figs. 5 and 6). Beginners still would like to be a part of musicians' world and choose the signature custom models. The physical product is less relevant for them as long as they prefer the particular lifestyle and aura.

The ability of the brand to deliver personalized product creates a value. These are intangible brand's characteristics which satisfy Self-esteem and Self-actualization needs of customers (see Maslow 1987). The musicians esteem themselves by owning a famous well-known brand (like Gibson or Fender) but at the same time they could enjoy the personally customized product. This sense of individuality is developed by using a personalized brand.

4 Developing the Added Value by Product Personalization

Empirical evidence which is supported by academic findings demonstrates that the nature of added values and benefits of product personalization are interlinked (Starostin et al. 2016). Brand values could be divided into different categories, but the

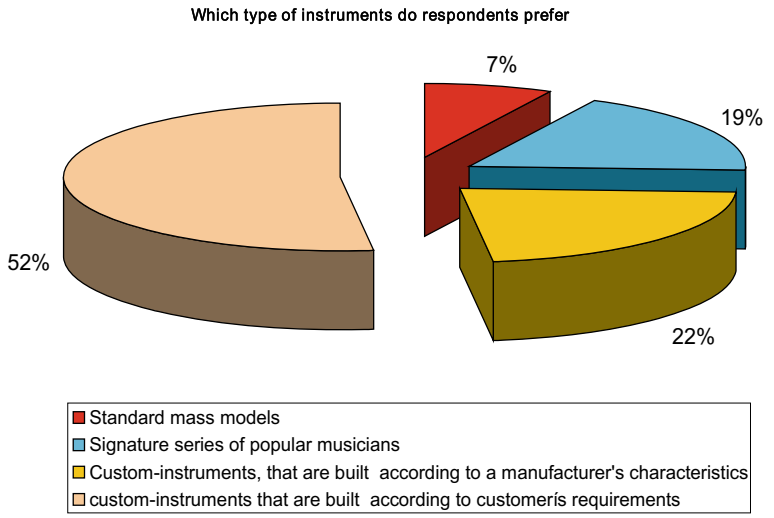

Fig. 6 Which type of instruments do respondents prefer? (*Source* Survey results)

personalization will be considered as an added-value in most of the cases. Customization is an instrument of personalization and the popularity of different extends of customization depend on customer group. In case of electric-guitar industry, product personalization is highly valuable by consumers (Fig. 7).

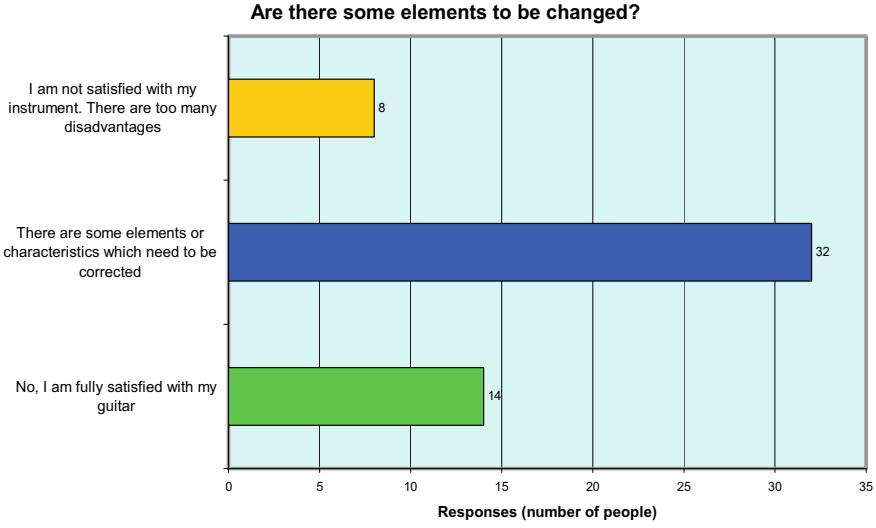

Fig. 7 Element to change in musical instrument (guitars)

The scale of purchase factors and factors that generate the brand's opinion show, that personal experience, physical characteristics, rate of popularity and reference group effect play the most important role in perception of brand values. In fact, all these factors are hidden added-values that is why they are so significant. Consequently, it is reasonable to say that Added-value from product personalization is interlinked with other known added-values.

Figure 8 illustrates the rate of integration between added-value from the Product personalization (in fact—product customization) and other added-values (adapted from de Chernatony 2001). It is reasonable to mention that added-value from personalization cannot exist without others. There are at least two possibilities of how it functions.

- Added-values from the appearance, reference group, effectiveness and experience will create a new added-value from product personalization. But it is possible only if the management of the company decides to involve customers in brand building and follow the strategy of personalization. In this case all other types of added-values will help to create a new value and then will help to accelerate its significance.

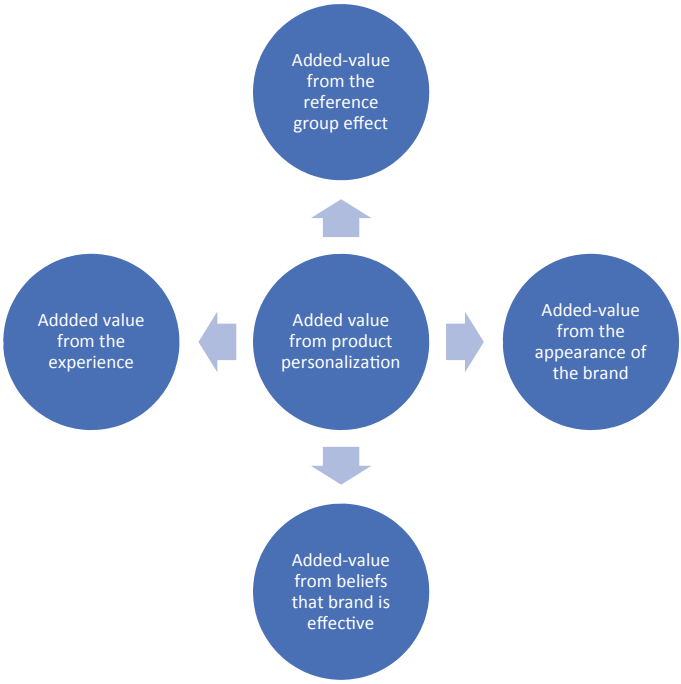

Fig. 8 Added value from product personalization (*Source* The authors)

- Added-value from Product personalization creates all other added-values because in fact it consists of all of them (see above). When the process of customer participation is managed properly with the result of added-value for the brand, it will automatically create all other added-values. Participation through customization will provide effectiveness, experience, performance and reference for the brand.

Focusing of electric-guitar industry, tailor-made products also add values for the brand from the customer involvement into product development. In fact, customer takes part creating of their own instrument and it allows him to be proud of owning it.

Value perception could vary from customer to customer. But value, which is created by the particular customer for himself will be considered as an ultimate benefit of the brand. "Me selling proposition" also acts as a purchasing motivator (Lindström 2004). Brand which is performed through customized product will have additional advantage from the customers' perspective. It will create additional competitive advantage for the company in terms of differentiation of the brand.

5 Conclusions

The industry of musical instruments is highly suitable for the personalization. As long as the target customers are very self-expressed individualities, the idea of customized product is very crucial. Electric-guitar market has a significant range of customized products that enable customers to satisfy self-esteem and self-actualization needs. Not all guitar brands give the opportunity to customize instrument. But those producers, who offer such option, are highly valuable for target audience. In other words, the value, which they create, is different from others. Fender and Gibson brands are on top of the popularity. This situation is very much created by brand's ability to offer individual value to each customer. Physical product is still relevant. In this meaning, personalized electric guitar provides enhanced technical characteristics and the sense of individuality for the owner.

All the findings reflect the content of research and objectives of the current study. It is reasonable to mention that goals have been achieved and questions were answered. Answering to the first research question it could be mentioned that product personalization affects brand values in such a way that it indirectly creates different types of values, which reflect the consumers' attitude toward the brand. Summarizing the answer to the second research question, the customization should be regarded as a tool or instrument which states to generate the personalized product. Customization should not be considered as a corporate strategy, but at the same time it is reasonable to use this idea on operational level. Customization enables companies to create close relationships with a target audience by keeping the contact with each particular customer. Customization as itself is not a value for the audience, but the personalization which is created by customization is an ultimate purchase motive.

All objectives of the project are gained. The role of customization is explored and the musical industry has been analyzed from the perspective of product personalization. Practical evidence demonstrates that personal musical instruments are highly valuable for customers and encourage them to show the rate of loyalty to the brand.

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An Analysis of Multinational Apparel Enterprises' Sustainability Focusing on Fast Retailing

Kanako Negishi

1 Introduction

In recent years, the world has started looking towards companies to bring forward solutions to various challenges, such as those pertaining to the environment and poverty alleviation. The call by the United Nations (UN) to companies in 2000—especially multinational enterprises (MNEs)—to form a Global Compact (GC) was the first action of its kind. This effort is in line with the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) of the UN. Although the participations in such a global legitimate action by MNEs has been a subject of debate and is sometimes criticized as blue wash, the GC, MDGs, and SDGs requested the MNEs to participate in the multilateral discussions as an important global actor. Nowadays, around four in ten sustainability reports from large companies make a connection between their activities and the SDGs (KPMG International 2017).

Against the background of such a 'cooperative' relationship between the UN and MNEs, there are failures regarding the UN Code of Conduct on Transnational Corporations, which aims to monitor and control MNEs' global operations and the problems faced by MNEs such as Nike in 1980s and 1990s. The case of Nike triggered the argument for global sustainable business models of MNEs (Ruggie 2013). It demonstrated the difficulty regarding who is responsible for implementation, and how to implement such a model in the global production system of MNEs between developed and developing countries. Although many visible MNEs recognised the responsibility, which has now become one of the norms in good corporate citizenship, the setting up of an effective way to be responsible is still based on trial and error (Vogel 2005).

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MNEs have, either directly or indirectly through their operations, caused many of the problems inherent in the GC, MDGs, and SDGs (Kagata 2006). The economic power of MNEs has both a positive and negative impact on the world. They have efficient large-scale production capacity backed up by advanced technological capabilities, networking ability to connect suppliers across the country, labor absorption ability to provide employment, and marketing method with high-profile brands. MNEs contribute to the economic development of countries (Sekishita 2017). On the other hand, their management has resulted in various problems globally: low wages, poor working conditions, overdevelopment, tax havens (Sekishita 2017; Jones 2005).

In particular, the apparel industry has the characteristic of being labour-intensive, and labour and environmental issues have occurred in some developing countries where companies can take advantage of cheap labour (ILO 2019). In April 2013, a factory in Bangladesh used by some apparel companies from developed countries due to cheap outsourced labour collapsed. The industry came under criticism again and the issue was raised globally in the OECD and the G7. The business model is considered unsustainable (ILO 2019).

What form of business model should MNEs practice, under such circumstances? MNEs, in particular MNEs in the apparel industry, are no longer acceptable the world over. They have now implemented corporate social responsibility (CSR) and sustainability. Furthermore, creating shared value (CSV) (Porter and Kramer 2011), social business (Yunus 2009; Demise 2018), and BOP business (Bottom of the Pyramid) (Prahalad 2005; Hayashi 2016) have now become essential practices in their global businesses. The UN has offered some platforms and ideas to encourage them to solve and implement sustainability voluntarily, not through monitoring and control.

The activities regarding sustainability are multi-dimensional in nature (Vogel 2005). While the apparel MNEs implement sustainability through initiatives such as partnerships and donations, they have faced criticism about working conditions and environmental pollution. Depending on the degree of business model innovation, Schaltegger et al. (2012) divided sustainability strategies, case drivers, and business models into three: defensive, accommodative, and proactive. From the Nike's case and the accidents in Bangladesh and regarding the arguments, how the MNEs modify their business models in terms of sustainability?

Many arguments focus on MNEs from Europe and the United States, and there is a lack of research on Asian apparel MNEs. This study focuses on Fast Retailing (FR), which is the one of the largest fashion Japanese apparel MNEs that has grown rapidly after Nike's fiasco. It has a widely distributed production system in Asia including many outsourcing factories. This study clarifies how FR modified its business model and what stage it is currently in.

2 Sustainability in the Apparel Industry

For apparel companies that employ a specialty store retailer of private label apparel (SPA) in particular, the main problems are the poor working conditions and environmental burden. Both problems are strongly related to the competitive business models of the MNEs. SPA is a business model that manages the entire clothing manufacturing process from design to manufacturing to retail. However, some companies outsource their manufacturing. Gap Inc. first adopted outsourcing as its business model in 1987. Other typical examples are FR, Zara, and H&M (The Senken Shinbun 2018).

While the domestic apparel market size has declined from 15 trillion yen during the bubble period to 10 trillion yen, the supply volume has nearly doubled from 2 to 4 billion in 2016 in Japan (Ministry of Economy, Trade, and Industry 2018). There is oversupply in the market because of the mass production and mass disposal model of fast fashion. While this change is in the consumer's favor, it causes an environmental burden (Tokoro 2010). Additionally, since general clothing, such as men's clothing, ladies' wear, and children's clothing is prioritized on fashionableness, the combination of materials is complicated, the design is not uniform. Therefore, compared with uniforms, recycling of general closing is delayed. There are difficulties in collection and recycling, but there are some companies like FR are addressing the problem (Tokoro 2010).

Working conditions in the outsourcing factories in developing countries have also been criticized. The Nike case of poor working conditions and child labor had triggered the debate on sustainable business model of MNEs. The case questioned the scope of responsibility in the world production system that is large competitive advantage for MNEs. When Nike was criticized, it replied that the conditions in the outsourcing factory was out of Nike's scope of responsibility because the factory did not belong to Nike. After facing severe criticism from consumers, NGOs, and media, Nike started to audit and monitor the factories, educate and train the workers, and public disclosure of the information on its factories as part of its solution to the problems (Scheiber 2015; Doorey 2011; Park 2006; Vogel 2005; Tulder 2001).

The problem of poor working conditions in the factories is rooted in the power gap between the factory workers in developing countries and retail buyers in developed countries (Perry et al. 2015). Apparel manufacturing is labor intensive. There is little room to save on textiles, which constitutes the largest single cost. This means that the cost of cutting, and stitching clothes is key to overall production costs and ultimately, profits (The Guardian 2014).

In 2013, a fire broke out in a Bangladesh clothing factory. In the building there were five apparel factories that had been commissioned for outsourcing by brand companies. This second incident occurred within six months of the collapse of Rana Plaza that housed several clothing factories and where more than 1100 people had died (CBC news 2013). These accidents once again fueled the debate on the responsibility for the supply chain of brand companies. "Responsible supply chain" was the agenda at the G7 Ellmau Summit held in 2015, confirming the role of the G7

countries in promoting labor rights, certain level of working conditions, and environmental protection in the global supply chain (Ministry of Economy, Trade, and Industry 2018).

While there have historically been severe problems in the apparel industry, they contributed to economic growth and job creation in the eighteenth and nineteenth centuries in newly industrialized countries in Europe (ILO 2019). In the recent year, the industry and the outsourced production is essential for some developing countries in Asia. For example, FR outsources its products to factories in China, Bangladesh, Indonesia, and Vietnam. The major export items for Vietnam are firstly, phones and parts, and secondly, sewn products. Japan is the third major export destination, after the United States and China. Focusing on the relationship with Japan, the sewn items occupied the first place from 2009 to 2017 in Vietnam (JETRO). This shows the importance of the product in export for the countries. Therefore, the problem of working conditions in developing countries is a deep-rooted structural issue; it is not merely a regulatory matter.

Furthermore, apparel industry is still a growth industry. Globally, the market size has expanded from 1306 billion USD in 2015 to 1598 billion USD in 2018. It is forecasted to expand to 2714 billion USD in 2025. The winning model in this market is divided into three types: the high value-added type, global SPA type, and category killer (Roland 2017). In the Japanese market, the spend is decreasing every year. The annual expenditure per household was 137,673 yen in 2017 (from 206, 742 yen in 2000). However, only the both categories low purchases of "less than 3000 yen" and "high price purchase of 20,000 yen or more" is increasing (Ministry of Economy, Trade, and Industry 2018).

This paper focuses on FR, ranked 3rd in the apparel industry. FR was not affected directly from the Nike incident at the time like Gap and Levi's were, as it has grown rapidly in the 2000s globally. How does FR implement sustainability in its management? Its business model in its global value chain is highly regarded. While FR outsources its production, it has strong ties with its factories (Porter Prize 2009). One of the competitive advantages for outsourcing model is the low cost of production from their production system. This entails large profits as well as poor working conditions in the supplier factories (Kasai 2016). Kasai suggested that FR is under the risk noted above, because they cannot solve the stocks. They postpone the order to the factories as much as possible. It causes too much overwork (Kasai 2016). In fact, while FR invests a lot in Bangladesh; they established joint venture with Grameen healthcare trust in Bangladesh in 2010 to construct SPA there (Tsuboi 2012), they were criticized for the working conditions of their outsourced factories by NGO in 2015.

However, FR's sustainability actions as a whole are not clear enough yet. This paper explores the transition of FR's sustainability model historically and by a contents analysis of the sustainability reports focusing on working conditions to contribute to sustainable development in Asia's production system.

3 Fast Retailing Co., LTD.

3.1 Overview

FR was established in 1963. It employs 52,839 full-time employees (consolidated) as of August 31, 2018. It has a paid-up capital of 10,273 million yen. It owns the brands UNIQLO, GU, Theory, Comptoir des Cotonniers, Princesse tam.tam, and J Brand (FR homepage). At the end of August 2018, UNIQLO Japan had 827 stores and 1241 stores internationally, including 726 in Greater China (Mainland China, Hong Kong, and Taiwan), 186 in South Korea, 198 in Southeast Asia and Oceania, 78 in Europe, and 53 in North America. New store openings have been especially rapid in Greater China and Southeast Asia. Although FR's sales were just 20% of Gap's sales in 2000, they were roughly the same by 2015. FR is in the 3rd largest company in the apparel after Inditex and H&M (FR 2017). It is estimated that UNIQLO is in the 8th in Japan Brands 2018 in brand value (Interbrand 2018).

UNIQLO procures its own materials and initiates joint fabric developments. However, the company does not own any factory. FR's worldwide sales now exceed 500 billion yen, and the maker has tied-up with only 70 long-term-partner companies that comply with UNIQLO's quantity, delivery, and cost standards to produce at their factories (Porter prize 2009). In addition, FR has formed teams of craftsmen, who have retired from leading Japanese sewing companies with over thirty years' experience, to transfer know-how to the factories. These craftsmen are involved in every process from thread inspection to shipment of finished products (Porter prize 2009).

Figures 1 and 2 show the change in net sales from 1992 to 2013 and from 2014 to 2019. Although the sales revenues have fluctuated slightly, overall, it shows growth. Recent growth, in particular, is supported by growth of overseas markets (Fig. 3). The first UNIQLO International store opened in the United Kingdom in 2001. By August

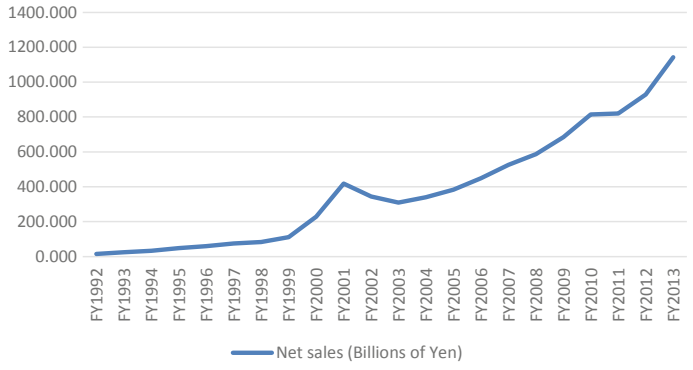

Fig. 1 FR net sales from 1992 to 2013. *Source* Fast Retailing homepage. https://www.fastretailing.com/eng/about/business/aboutfr.html (2019, Jan. 9 last accessed)

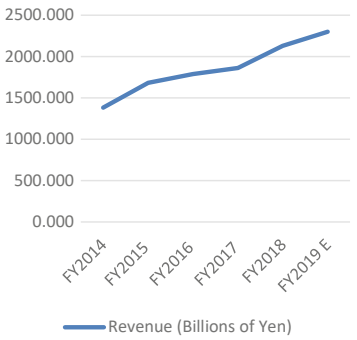

Fig. 2 FR net sales from 2014 to 2019. *Source* Fast Retailing homepage. https://www.fastretailing.com/eng/ir/financial/segment_5yrs.html (2019, Jan. 9 last accessed)

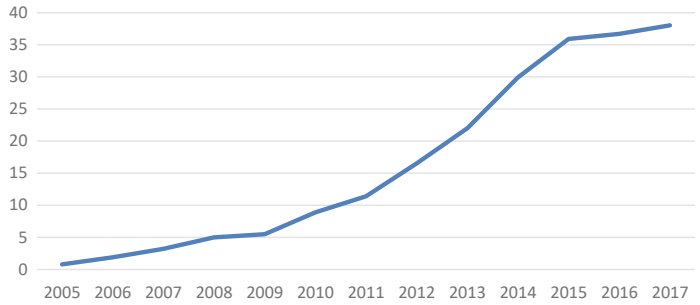

Fig. 3 UNIQLO Overseas operation (%). *Source* Fast Retailing homepage. https://www.fastretailing.com/eng/ir/financial/segment_5yrs.html (2019, Jan. 9 last accessed)

2018, UNIQLO International accounted for approximately 51% of total UNIQLO sales, with 1241 stores (vs. 827 stores in Japan). The Asian countries show strong growth (Fast Retailing, homepage).

FR adopted IFRS in the fiscal year 2014. The JGAAP data presented for fiscal 2014 is not subject to audit by the independent auditors of the company. 2019 figures are estimated as of 11 October 2018 (Fig. 3).

The principal shareholder of FR is Tadashi Yanai. Although his shareholding has decreased from 26.68 to 21.67% in 2012, he still remains the largest shareholder. In the holdings by shareholder type, Japanese individuals and others have had the highest share since 2002, but their shareholding is decreasing gradually. Until 2004, foreign investors, with the highest holding after Japanese individuals and others, have passed the Japanese financial institutions since the following year. The ratio of Japanese financial institutions has since risen (FR 1997, 2018).

4 Sustainability

When Nike was criticized for its business practices from 1980 to the 2000s, some of the other companies that employed a similar model were also criticized. However, FR did not face any criticism. FR first listed its shares on the Tokyo Stock Exchange and opened its Shanghai office to enhance production management in 1999. The company's rapid growth started around 2000. This suggests that, before 2000, FR did not get much international attention as Nike and Gap. In fact, FR's sustainability management information disclosure started from 2005 as shown in Table 1.

Table 1 The chronological table of FR's sustainable actions from "News & Updates"

2005	Support for the natural disaster
2006	Issued the first CSR report
2007	Recycle campaign, CO_2 emissions
2008	Recycle campaign, support for natural disaster
2009	Recycle campaign
2010	Recycle campaign, social business, a partial report on the working environment at the supplier factory
2011	Support for natural disaster, FR and UNHCR launch partnership agreement
2012	Social business, support for natural disaster, recycle start in overseas
2013	Support for natural disaster, Grameen UNIQLO in Bangladesh, FR Signs the Accord on Fire and Building Safety in Bangladesh, FR Supports the Empowerment of Women in Bangladesh Donates to Asian University for Women, and Launches Girls' Soccer Project
2014	Support for natural disaster and refugees, Strike at UNIQLO Manufacturing Partner in China
2015	FR and UNHCR announce new agreement, support for natural disaster, Independent Inspection of Working Conditions at factories in Cambodia, Advances Working Conditions at its Production Partners, Updates on the Strike in China, Statement on Working Conditions in Cambodia factories, refugees, in Response to Working Condition Claims at UNIQLO suppliers in China, FR takes action to improve working conditions in China
2016	Support for natural disaster, refugees, Statement on employee dispute at UNIQLO factory in Cambodia
2017	About the FR group Sustainability Policy and disclosure of UNIQLO Core partner factory List, About the Disclosure of GU core partner factory List
2018	Recycle, support for natural disaster, FR Group develops innovative to cut water usage, Regarding the bankruptcy of former UNIQLO supplier in Indonesia, Statement on labor dispute in Cambodia, a former UNIQLO supplier in Cambodia, Regarding results of audit factory in China, Progress on improving conditions at production partner in China, FR becomes UN GC signatory, Update on meeting in Indonesia with trade union representatives of former supplier, FR publishes list of core fabric mills

Source FR homepage, https://www.fastretailing.com/eng/sustainability/news/ (2019 Jan. 09)
Note The table focuses on the working conditions, environment, support for refugees, and the people affected during natural disasters. The natural disasters include domestic and international earthquakes, floods, cyclones, and so on

The distinctive effort of its sustainability is in recycling of its products, refugees, and working conditions. The All-product Recycling initiative was started in 2006. The initiative delivers clothing aid to refugees though a partnership with UNHCR (the Office of the United Nations High Commissioner for Refugees). The company has donated 25.58 million secondhand clothing items collected in their stores worldwide (FR 2017).

FR has an established Partner Factory Code of Conduct and it works with its manufacturing partners to ensure that the factories where UNIQLO clothing is made are safe and has appropriate working environments. UNIQLO began monitoring working conditions in primary factories in 2004. This was extended to include working conditions and environmental impact at the fabric supplier level, which constitute 70% of UNIQLO's production volume in 2015. FR encourages factories to appoint specialized inspectors and create proper inspection systems to improve the monitoring of working environments. UNIQLO sends 170 of its own people to monitor and provide guidance to these factories with regard to manufacturing quality, safety, trueness to the design, and manufacturing volume (FR 2017).

Table 1 shows the brief chronology of FR's sustainability efforts. FR published its first sustainability report in 2006. This was relatively later compared to other Japanese manufacturers, but not too late compare to their international competitors. H&M published its first report in 2002 (H&M homepage). Inditex published its report in 2003 (Inditex homepage).

In the holdings by shareholder type, foreign investors held the second largest share until 2004. However, together with Japanese investors and Japanese financial institutions, the share has been more than 59% from 2002 to 2018. Yanai owns 26.28% until 2011 (21.67% after 2012). Additionally, UNIQLO's overseas revenue accounts for only 0.8% (Japanese operation is 95.1%) in 2005 (FR 1997, 2018). This could be because the external pressure from overseas was not strong at that time.

Further, FR is now increasing its focus on other issues. Until 2012, most efforts were in the area of disaster relief and recycling that is regarded to their subjective actions and it is placed in the philanthropic responsibility (Carroll 1991). The accident occurred in Bangladesh in 2013. FR had already started its social business practices in 2010. From 2013, it scaled up its efforts.

Many incidents have come to light from 2014 to 2018 related to FR's outsourced manufacturing system in China, Cambodia, and Indonesia. They were criticized for their working conditions by NGOs in 2015. SACOM (Students & Scholars Against Misbehaviour) had published a report claiming issues with working conditions in FR factories (SAMCOM 2015). In response, FR stated that it was monitoring its factories.

As their business has grown, the problems of working condition have increased in FR's factories in Asia. With this, the company has responded to these quickly. Typical example is the sufficient support in Bangladesh. In essence, FR's response is the same as Nike: audit, monitoring, and disclosure. Similar problems have been experienced already by sports apparel companies before 2000. Although FR has been successful in constructing a distinctive business model, it has had a defensive stance regarding sustainability.

5 Content Analysis to Sustainability Reports

This paper examines their sustainability reports from 2006 to 2018 by content analysis to extract words and capture the relationship between the words (co-occurrence) to clarify more details of their sustainability. The analysis method can be defined as "an observational research method that is used to systematically evaluate the symbolic content of all forms of recorded communications" (Kolbe 1991). In particular, researchers can transfer communication content into data that can be quantitatively compared by using this it (Paisley 1969). One of the content analysis' advantages is that researchers can capture extracted words automatically and obtain a whole picture and explore the features of the data without prejudices of researcher (Higuchi 2016).

Content analysis is used widely in research to analyze sustainability reports to extract and compare the features and trends (Landrum 2017, 2018). It clarifies the difference of disclosure between family and non-family companies (Campopiano and De Massis 2014). By the content analysis, this paper clarifies the transition of the company's interest in the sustainability field.

6 Results

Table 2 shows the top 5 frequency in the reports. Although FR does not have any of its own factories for production, the word "factory" (工場) is ranked. In particular, the word ranks in the top 3 from 2010 to 2017. The ratio of overseas sales increased in 2010 (3.4%, 0.5 in 2009). Furthermore, both the word "factory" and "environment" (環境) was in the top 5 from 2010 to 2017.

Table 2 The top 5 of frequencies by each sustainability report

	2018	2017	2016	2015	2014	2013
1	事業	環境	環境	環境	工場	商品
2	店舗	工場	工場	工場	環境	工場
3	従業	取引	活動	従業	従業	従業
4	商品	労働	事業	グループ	事業	社会
5	環境	事業	グループ	取引	取引	環境
	2012	2011	2010	2009	2008	2006
1	商品	商品	工場	商品	店舗	グループ
2	生産	工場	商品	お客様	商品	店舗
3	工場	店舗	従業	店舗	環境	商品
4	活動	環境	環境	グループ	グループ	従業
5	環境	企業	支援	企業	社会	社会

The word related to sustainability was always found “society” (社会), “labor” (従業), “recycle” (リサイクル), “monitoring”(モニタリング), “refugees” (難民) in top 150 in Table 2. “Recycle” can be found many times, but it is relatively less than the other words as noted above. “Social business” has not been dealt with in the reports in the top 150.

Next, it is investigated the co-occurrence of the words. “Environment” sometimes uses various meaning and co-occurrence various the word. A company interest in the solution of pollution in automobile industry, “environment” often used with “burden” (Negishi 2018).

We can find that FR use the word “environment” meaning workers environment in the factory, not suggest natural environment mainly as shown in Figs. 4 and 5.

It is also found that “working” (労働), “factory,” “monitoring,” and “environment” relates strongly in Fig. 4. Comparing with Figs. 4 and 5, the words appear similar, but co-occurrence and frequency are not similar. “Factory” is separated “environment” and “working” in Fig. 5. The trend of co-occurrence like Fig. 4 shows strongly from 2010 as the words have been increasing. Focusing on the word “social (社会)” which also included various meanings, the results suggest “social” do not include labor, factory, human right, and their business directly.

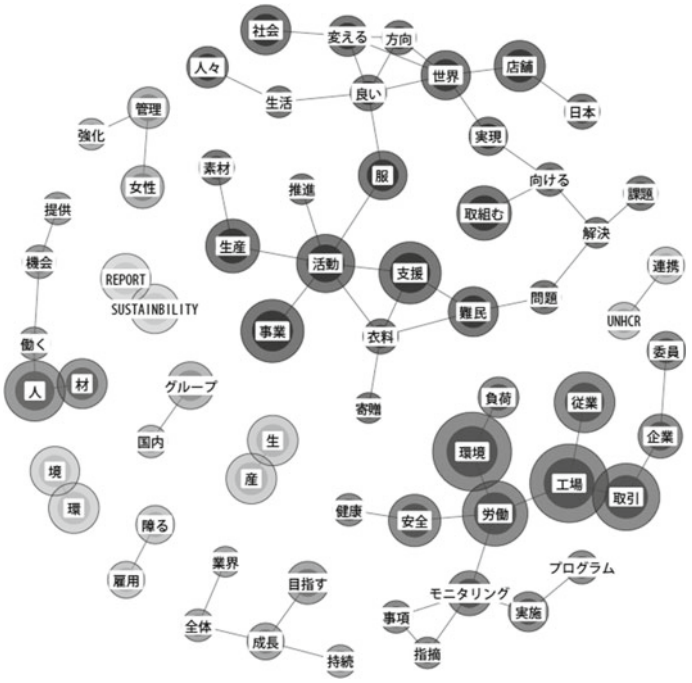

Fig. 4 Co-occurrence network of FR Sustainability Report 2017

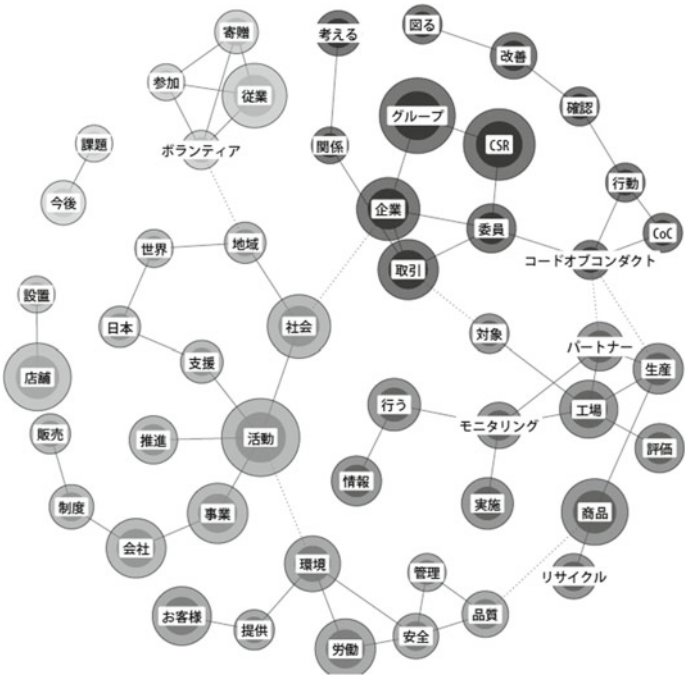

Fig. 5 Co-occurrence network of FR Sustainability Report 2006

From the result, we can see that FR's largest concern is their factories' working conditions. The tendency becomes strong from 2010 onwards. The word "environment" means worker's conditions in a factory in FR from before 2013 when the accident occurred in Bangladesh and the conditions had been one of the largest agenda for their sustainability.

7 Considerations

There are many differences between industries in the concerns and implementation of sustainability. In the automobile industry for example, in the backdrop of pollution problems, the word "environment" still mainly means the natural environment (Negishi 2018). Unlike other industries, the work in apparel manufacturing is labor intensive, and the industry have been criticized for it. The result is reflected from it.

While the implementation regarding natural environment and resources has become generalized, because it could lead to cost reduction and creation of new markets, it is usually difficult to do so as labor and human rights tends to raise costs (Vogel 2005). Additionally, monitoring and audit is costly because of outsourcing to the numerous factories (Vogel 2005). FR has implemented sustainability practices

in its overseas expansion and as a response to disputes from the factories. There is a possibility that cutting down on its list of 70 factories could make them cut costs. The strong ties between them also make it possible. There is also a possibility that they pass on the price decrease partially to consumers. FR differentiates Inditex and H&M in contrast to their focus on fast fashion (FR 2017).

On the other hand, the criticism faced by Nike and other sports apparel industries for their business model since the 1990s has not affected FR much. For example, Nike and Levi's started their disclosure on supplier list in 1995, but FR did so in 2016 after facing criticism by NGOs in 2015. Furthermore, FR's implementation to solve the problems have been the same as Nike's.

They have competitiveness on their supply chain in Asia. It is quite difficult to change it fundamentally in Asia. Hence, FR has responded to the problems by strengthening their continuous effort. Although there is a possibility that they can cut their costs of monitoring and audit, it will not create new value. FR follows a defensive and/or accommodative sustainable business model, and not a proactive model that would redesign their business model (Schaltegger 2012). The efforts with regard to working conditions in factories, support for refugees, and recycling, do not make or relate to profit. No doubt that sending recycled products for refugees is a meaningful activity, but if the items create new value, and can be categorized in the "create value from waste" (Bocken et al. 2014), it will have a significant impact on recovery rates as well.

8 Conclusion

This study examines how FR implemented initiatives to address poor working conditions in outsourcing factories in Asia. They should have been able to develop sustainability efforts based on the lessons learned from Nike.

The result clarifies that their main concerns have been the working conditions in factories and strengthening its implementation. The large number of contractors in compliance monitoring in the apparel industry is suggested as the large problem (Vogel 2005). However, by narrowing the number of contractors (only 70), FR achieves continually both economic growth and monitoring. It is the one of the possibility about sustainability in the global supply chain. On the other hands, the implementation that the monitoring, audit, disclosure of the factories is defensive. The ways of implementation followed is similar to what Nike has implemented. Their implementation is response for the incidents and it does not in itself create new value. One of the reasons is that there is less pressure from the outside, that is, from shareholders and consumers in their primary market. There is the possibility to increase the efficiency with a partnership with others that are an important part of the SDGs. For further research, it should be compared with the practices of Indetex,

H&M and Gap. Additionally, it more investigations are required each practice by FR in its factories.

Notes

FR's sustainability report was not published in 2007. The reports 2006 period is September 2005 to August 2006. The report 2008 period is September 2006–August 2007. 2009 is September 2007–August 2008. The Japanese report of description is the same as English version.

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Vocational Training Policy for Ethnic Minority Labour in Transitional Countries: The Case Study in the Northwestern of Vietnam

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1 Introduction

Located in the western mountainous region of Northern Vietnam, the Northwestern region consists of 6 provinces, including Lao Cai, Dien Bien, Lai Chau, Son La, Yen Bai and Hoa Binh, accounting for 15.3% of the country's area, and shares borders with Laos and China. The terrain is high and deeply divided, but it is a strategic location which is especially important for national defense and security with a large amount of natural resources.

In 2019, the population of the Northwestern was 4.7 million, accounting for 4.9% of the country's total population, 74.6% of which are ethnic minorities. The regional ethnic diversity is great with 50 different groups, of Vietnam's 53 total groups being represented. The majority of the regional population live in rural areas (82.8%) and the population density is sparse (9319 people/km^2). Thai, Muong and H'mong are the 3 largest groups in the region, making up over 2.6 million people, 43% of which are of Thai ethnicity. As many as 32 groups have a population of under 5000, with only a handful of people from certain groups living in the region. Therefore, the Northwestern region is usually known as the cultural space of the Thai people, famous for «xoe hoa» dance, or the precious cultural dance done with fans.

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With regards to the population structure of ethnic minorities in the Northwestern area, the labour force (aged 15 and over) accounts for a high proportion (69.2%). More specifically, the 15–44 age group accounts for 49% of the working age population. This is an essential resource for regional socio-economic development. However, the proportion of those who are formally employed here is very low. Therefore, the Northwestern region has the highest rate of poor ethnic minority households nationwide. As many as 22 out of 85 the poorest districts in Vietnam which receive assistance attentively from the State are located in the region (The Prime Minister 2018).

In recent years, the State of Vietnam has issued many policies towards vocational training and employment issues to support ethnic minority workers and particularly those in the Northwestern mountainous areas so that they can actively participate in the labour market, and gradually and sustainably overcome poverty. The implemented policies have helped many ethnic minority households settle down, discard their nomadic cultivation and gradually improve their material and spiritual life. However, the employment quality and labour productivity of ethnic minority workers remain low, even though the demand for vocational training is still very high while the resources for policy implementation are limited. Many vocational training policies have not achieved the desired results, or have not taken into account local characteristics and regional differences.

By synthesizing findings of research and policies with the published statistics of the General Statistics Office (GSO) and the Directorate of Vocational Education and Training (DVET), this study provides an overall picture of central and local vocational training policies enforced in the Northwestern region. Simultaneously, the impacts of the policies on vocational training institutions and ethnic minorities in the Northwestern region are also analyzed and evaluated, which shall prompt appropriate policy solutions. The findings of the study are not only of academic value but also lay a foundation for central and local governments to direct vocational training in the context of the sector's economic structure being altered to achieve sustainable poverty reduction and to boost the socio-economic development of the Northwestern region.

2 Literature Review

Williams (1963) argues that while university education is associated with theoretical or academic issues, vocational education is practical. Vocational education prepares individuals "for an immediate entry into the labour market" (Beilmann and Espenberg 2016). Vocational education comprises home economics, general work, and life skills industrial arts (Cantor 1989). Vocational or technical education is designed to educate participants with the practical skills and the know-how to implement them in a particular situation (UNESCO 2003). Vocational training as "provides people with the skills and learning required by enterprises and industries" (Moodie 2002).

Instead of providing a broad field of knowledge comparable to social sciences, physical sciences, and the humanities, vocational education aims to transmit exploitable knowledge to manpower participating in the labour market (Feinberg 1983).

Technical education training, therefore, provides not only technical skills for the professional (Sabates et al. 2012) but also general and useful skills for daily activities (Speake 2007). Vocational education training enhances skills and confidence of learners in workplaces and the self-esteem of learners as well (Tennant and Yates 2005). Vocational education training is also linked to the development of personal confidence as well as the desire for further education (Gendron 2005). It is said that, being well prepared for their profession provides the chance for individuals to control their work and affords them opportunities to move to another industry (Field and Malcolm 2010). In the context of expansive urbanization, vocational education training creates not only opportunities for individuals, but also the local areas because it is expected to meet the demands of manpower and the local authorities. Vocational education training provides chances for educated labour to move into both industrial and service sectors but also enhances "rural farmers' capacity to use science and technology as well as marketing knowledge to work effectively on the farm" to produce agricultural products for commercialization (Shan et al. 2015).

Vocational schools can be managed by the local educational authorities, private organizations or the Ministry of Labour. Training courses are provided by one of three kinds of institutions, state-owned, collectively-owned, or privately-owned institutions (Elson-Rogers and Westphalen 2000). Models of vocational training comprise school-based vocational training, apprenticeship training, and in-service training (Lauglo 1993). Different nations have different systems of vocational education employing various sorts of teaching methods. Vocational education and training regulations are influenced by state control, corporatism, and free-market models. The state plays a crucial role in concern with social partners and other labour market actors (Souto-Otero and Ure 2012). The scope and objectives of vocational education and training are differentiated from each other (Ulimwengu and Badiane 2010). Many countries, outside of the Anglosaxon system, "have extensive vocational programs at upper secondary level," while Anglosaxon countries tend to arrange such programs for post-secondary level (OECD 2010). The corporatist model of Germany is considered to be the most effective as "individual company identities are embedded in, rather than hostile to, the corporatism of German business life" (Crouch 1992). The financial support mechanisms for participation in vocational education and training courses differ from each other. The vocational courses could be funded differently, from state-led funding, social partner funding, demand-led funding: (i) state-led funding offers subsidies for enterprises and/or employees to encourage participation in training according to the policy priorities of the time; (ii) social partner schemes focus on specific objectives such as training lower-skilled workers, even unemployed people; (iii) demand-led funding "may be targeted or universal" as they "may be funded by the government (central/local/regional), by social partners (including individual enterprises) or mixed funding" (Elson-Rogers and Westphalen 2000). Individual funding could also be included (Westphalen 1999).

Cooke (2005) indicates several problems related to vocational training providers, including administrative issues, student recruitment problems, training resource and provision problems and employment problems for graduates. Beilmann and Espenberg (2016) indicate that some individuals prefer to take part in a practical career with their hands rather than sitting in class. Many participants drop out because of their increasing dissatisfaction, as they had a clear idea of what they wanted to learn, but they were not allowed to so. They realized that the chosen specialty was not adequate. Also, in the labour market, there are several jobs that can be obtained without any qualification requirements, and going to school, and acquiring proper education was a waste of time. Also, the connection between training and work would never be neglected (Lauglo 1993).

A minority is defined as "a group of people who, because of their physical or cultural characteristics, are singled out from the others in the society in which they live for differential and unequal treatment, and who therefore regard themselves as objects of collective discrimination" (Wirth 1945). Brubaker (1996) defines the three main characteristics of national minorities: (1) the demands of ethnic minority groups to an ethnocultural nation differs from others of their own country; (2) the ethnocultural nationality of ethnic minority groups need to be recognized separately by the state; (3) the demands of these people on certain cultural and political common rights depend on their ethnocultural nationality. The existence of a minority in a society implies that their social status and privileges are lower than that of dominant groups in the society. Minority groups hardly participate in all activities of the society (Veres 2015). Many people from ethnic minorities, all over the world, experience similar hurdles such as poverty and lower schooling, accommodation, unsecured employment originating from their ethnocultural nationalities, irrespective of a number of supportive policies enacted by their governments (Phillion et al. 2012).

Ethnic minority groups normally have disadvantageous geographical and economic conditions, and hence, the labour force in these groups tends to face more difficulties in the labour market. Specifically, ethnic minorities have an inferior academic background; thus, they mainly find employment in simple, low-skilled jobs that are not only underpaid but also unstable and unsustainable. In the context of automation and technology changes in the world economy, it is said that educational and technological skills must be advanced to succeed, which creates even more challenges to ethnic minority groups (Do et al. 2020). Globalization has resulted in numerous diversification strategies related to the livelihoods of minorities (Caouette et al. 2009). Livelihood diversification of minorities results in direct or indirect changes through the adjustment to on-farm or off-farm activities (Niehof 2004). Changes in on-farm activities, under globalization and multi-national agricultural industries, link to improvements in labour-skills concerning agrarian intensification and diversification. In contrast, variation in off-farm activities leads to an increase in labours associated with non-farm activities, leading to "rural-urban migration and de-agrarianization" (Trincsi et al. 2014).

Training in general and vocational training, in particular, plays an important part in improving job opportunities and wages for workers in ethnic minority groups. This would require a suitable public policy on vocational training for the ethnic minorities.

Public policy is defined as a course of action that the government chooses to do or not to do (Anderson 2014). Policies on vocational education training address the search for productivity of participants, satisfy the hunt for skilled manpower from employers and enhance the connection between training and work. This means that polices on vocational education have to deal with difficulties in recruiting and maintaining "teachers with relevant industrial experience" and keeping the curriculum updated with "changing labour market conditions and work requirements" (Lauglo 1993). A number of regulations have been issued by the state to assist and guide the operation of vocational training institutions (Cooke 2005). Furthermore, vocational education training policies aim to (i) inform the youth about their capabilities before entering the labour market; (ii) offer the youth some practical skills in particular situations; (iii) inform the youth about the mechanism of the labour market and how work is organized; (iv) provide counseling and personal assistance; (v) assist the youth in understanding the relationship between school, work, and society before making decisions (Zarifis 2000). Policy-makers should not only pay attention to participants and provider institutions, but also enterprises, as "giving adequate scope to individual companies would need, not a quick fix of direct government intervention, but a patient encouragement" (Crouch 1992).

In light of mentioned works, in this paper, polices on vocational training for minorities, therefore, are the choice for governments in dealing with vocational and technical education for minorities, related to problems of policies on vocational training providers, participants (minorities), and enterprises as well.

3 Overview of Vocational Training Policies for Ethnic Minority Labour in the Northwestern of Vietnam

In the national education and training system, vocational education in general and vocational training, in particular, play a critical part in delivering Vietnam's socio-economic development strategy. Thanks to the orientation and policies of the Communist Party and Government of Vietnam, especially ethnic policies, vocational training for ethnic minority groups has had a significant impact, contributing to the ethnic regions and the country's socio-economic development. Accordingly, the Government has emphasized job creation for ethnic minority groups through various policies, including the system of policies on vocational education for ethnic minorities. This system consists of central and local policies, which are promulgated in laws by the National Assembly, decisions of ministers, heads of ministerial-level agencies, and decisions by People's Committees and Resolutions by People's Councils in provinces. Vocational training policies include general policies applicable to all subjects, policies for rural workers (including ethnic minorities) and dedicated policies for ethnic minorities.

Up until now, vocational training policies for ethnic minorities have been expressed in various forms, such as programs, policies, or projects through various

textual formats such as resolutions, decrees, and decisions. However, these vocational training policies are mainly integrated into general policies of the central government, such as Program 135, Program 30a, the National Target Program on sustainable poverty reduction in the period of 2016–2020, or education policies for ethnic minority regions and ethnic minority people.

The statistics reveal that central policies on vocational training for ethnic minorities are expressed in 15 basic policies, including 13 general policies and 2 dedicated policies for ethnic minority labour, and are classified into 3 groups: (1) policies to support trainees, (2) policies to support vocational teachers and (3) policies to support vocational training institutions. Most of the central policies on vocational training for ethnic minority labourers are presided over by the Ministry of Labour, War Invalids and Social Affairs; others are chaired by the Ministry of Education and Training, the Ministry of Agriculture and Rural Development, Committee for Ethnic Minority Affairs, the Ministry of Finance and the Central Vietnam Women's Union and some dedicated policies are led by the Ministry of Planning and Investment. Almost all of the vocational training policies for ethnic minorities in the Northwestern region (Tay Bac) are issued by the People's Councils and People's Committees of provinces based on central policies. Policies of each province in the Northwestern region are mainly issued based on natural conditions; scale and quality of rural labour force; teachers, managers, and facilities in vocational training; rational of local economic development in each region (See Table 1).

Trainee supporting policies: most of the trainee supporting policies focus on providing financial support for ethnic minorities to participate in vocational training. Specifically, Decision 1956/QD-TTg dated 27 November 2009 of the Prime Minister on "Vocational Training for Rural Labourers by 2020" stipulates that ethnic minority people (together with people with disabilities and people whose land has been acquired) receive funding for short-term vocational training (elementary level, less than 3 months) with a maximum of 03 million VND/person/course (the amount may vary according to trained occupations and actual course duration); food stipend at 15,000 VND/day of training/person; travel expenses at the price of public transport ticket which is no more than 200,000 VND/person/course for trainees who live more than 15 km from their home. The National Fund for Employment under the National Target Programme also provides loans for labourers in ethnic minority areas to access the labour market after finishing vocational training. In addition, Decision 81/2005/QD-TTg on policies supporting short-term vocational training for the rural population also identifies funding policies for the working age rural population who have no formal training, or are in need for vocational training, or are eligible for short-term vocational training courses, and that those under preferential groups and of ethnic minority background are prioritised. The maximum support level is 300,000 VND/person/month and no more than 1,500,000 VND/person/vocational course. However, specific funding for each course is determined by people's committees of cities and/or provinces according to the local budget and conditions. Money is allocated and distributed to the local vocational facilities rather than directly given to trainees. As for trainees of ethnic minority background studying at boarding schools, the Prime Minister's Decision 267/2005/QD-TTg on vocational training policies for

Table 1 Number of policies documents on vocational training for ethnic minority labour issued by the central and local government valid in 2020

No.	Organization in charge of policy implementation	Number of policy documents	*In which*		Impact fields		
			Policies for Ethnic Minorities	General policies	Supporting vocational trainees	Supporting vocational teachers	Supporting vocational training institutions
Central level							
1	Ministry of Education and Training	1		1		X	
2	Ministry of Planning and Investment	2	1	1	X	X	X
3	Ministry of Labour—Invalids and Social Affairs	5	1	4	X	X	X
4	Ministry of Agriculture and Rural Development	1		1	X		X
5	Committee on Ethnic Minority Affairs	1		1	X		
6	Ministry of Finance	1		1	X		
7	Vietnam Women's Union	1		1	X		
8	Co-leading units	3		3	X	X	X

(continued)

Table 1 (continued)

No.	Organization in charge of policy implementation	Number of policy documents	*In which*		Impact fields		
			Policies for Ethnic Minorities	General policies	Supporting vocational trainees	Supporting vocational teachers	Supporting vocational training institutions
Local level: People's Council and People's Committee of provinces							
	Lao Cai province	5	1	4	X		
	Dien Bien province	3	2	1	X	X	X
	Lai Chau province	1	1		X		
	Son La province	1	1		X	X	X
	Yen Bai province	1	1		X	X	X
	Hoa Binh province	3		3	X		
Total		29	8	21			

Source Synthesized by the Research Group

boarding ethnic minority students stipulates that graduate students of boarding ethnic minority secondary schools and high schools are able to receive boarding vocational training at a public vocational training institution that is eligible for boarding vocational training for occupations with a training period of 3 months or more. These students are entitled to scholarships, social allowances, and other policies as boarding high school students of ethnic minorities. Therefore, after graduating from boarding ethnic minority secondary schools and high schools, they are given priority and support to continue their vocational training to ensure that after graduation, when returning to their localities, they will be qualified and skilled enough to participate in the labour market.

Vocational teacher supporting policies: Decision 1956/QD-TTg dated 27/11/2009 of the Prime Minister on approving the "Vocational Training for Rural Labourers by 2020" project stipulates that vocational training teachers and managers who need to go to villages and hamlets in areas with exceptionally difficult socio-economic conditions to provide vocational training in 15 days or more within a month are entitled to travel allowance equal to 0.2 times of the minimum salary for teachers who need to visit villages and hamlets for illiteracy eradication and education universalisation. Teachers of public vocational training facilities in the mountainous, remote, border and island areas and areas inhabited by ethnic minorities shall be provided with public accommodation as teachers from pre-school education to general education levels. Some other policies also include the accommodation provision for vocational teachers.

Vocational training institutions supporting policies: Vocational training institutions for the ethnic minority population located in either mountainous areas or elsewhere receive funding from the State for trainees have difficulties in paying and covering training fee. Specifically, vocational training centers in 61 poor districts, according to Resolution 30a/2008/NQ-CP dated 27/12/2008 of the Government on the rapid and sustainable poverty reduction programme for 61 poor districts, receive investment in vocational training facilities. Decision 1956/QD-TTg dated 27/11/2009 of the Prime Minister on approving "Vocational Training for Rural Labourers by 2020" introduces policies supporting vocational training establishments for rural population. Specifically, vocational training centers for labourers in mountainous areas and/or of ethnic minority background receive investment in classrooms for theories, workshops, dormitories, accommodation for teachers, canteens, mini-vans, or motor-boats for transportation (equipment and/or teachers). Poor, mountainous, border, and island districts and districts inhabited by ethnic minorities with vocational training centers established since 2009 shall receive training equipment assistance for 4 popular occupations and 3–5 typically local occupations. The investment ranges from VND 9 billion to a maximum of VND 12.5 billion/center. Funding for procurement of vocational training equipment for 100 continuing education centers in districts without vocational training centers to participate in vocational training for rural workers, including those in mountainous ethnic minority areas is VND 1 billion/center.

Especially, given the existing network of vocational centers and institutions, and a number of other policies such as Decision 1379/QD-TTg, Decision 1600/QD-TTg,

Decision 889/QD-TTg, the Prime Minister requested the ministries, industries and provincial people's committees to review and supplement the masterplan on developing the vocational training network with the focus on vocational training institutions for rural labour according to occupations and training levels to complete the establishment of new vocational training center in districts having none. In addition, the Prime Minister has also encouraged the mobilizing of resources from society for vocational training by encouraging organizations and individuals to invest in setting up vocational training facilities for rural labour; attracting private vocational training institutions, educational institutions (i.e., universities, colleges, technical secondary schools, continuing education centers, vocational general technical centers), enterprises and institutions, manufacturers, businesses and service providers to participate in vocational training activities for the rural population.

During the period 2010–2020, policies on vocational training for ethnic minority labour enabled vocational training, stable employment, income increases and living and working condition improvements for the labourers themselves and their families. This has actively helped alleviating poverty in the related areas. The State has increased investment in vocational training institutions, constructed boarding schools for ethnic minority students, provided preferential treatment for teachers and trainees to engage people of an ethnic minority background and teachers in vocational education in mountainous and disadvantaged areas. Each province has vocational colleges and schools to generate its local workforce. However, the policies on vocational education for the ethnic minority population remain incoherent; many programmes and projects have not got the same voice, and thus become overlapping and inefficient. Inappropriate viewpoints on vocational training, considering this the State's mission, are still rampant. The employment rate after graduation is pretty high but mainly in the agriculture-forestry sector and in the form of self-employment and productivity improvement. Some participate in vocational education just for the sake of formality, which leads to gaps between training and real needs of ethnic minority workers. Besides general policies for teachers in mountainous, remote and particularly disadvantaged areas, there have not been any specific policies for vocational teachers at institutions and centers for ethnic minority people and teachers who are of ethnic minority backgrounds. The implementation of many policies, programmes, and projects has remarkably improved the life of ethnic minority people. Additionally, there have not been any specific policies to suit the local economic situation as well as customs and practices of each region.

4 Results of Vocational Training Policies for Ethnic Minority Labour in the Northwestern Region of Vietnam

In order to ensure the effective implementation of vocational education, the state needs to focus necessary resources on labour, vocational training institutions and employers. In particular, finance is an important resource determining the quality of

vocational education. The Northwestern provinces have spent a significant part of the state budget on education, training, and vocational training. These expenditures are the main source of funding for the implementation of vocational training targets, associated with the performance of regular tasks of vocational training institutions within the state budget's capital allocation.

Figure 1 shows that, in absolute terms, the state budget for the Northwestern area for education and vocational training tended to increase in the period from 2015 to 2018. In 2018, the expenditure increased by more than VND 2400 billion compared to 2015. Especially, the expenditure of 2017 was VND 3255.8 billion higher than the expenditure of 2016. However, in 2016, the state budget expenditure on education and vocational training decreased by VND 1131.7 billion compared to the budget of 2015. It was because 2015 was the end year of the target program period 2011–2015, and the Government was in the process of approving the target program for the period 2016–2020, so in the Northwestern vocational training institutions had not implemented many training activities supported by the budget.

In accordance with the Law on Vocational Education, vocational training institutions include colleges, intermediate schools, and vocational education centers. Colleges include colleges and vocational colleges; intermediate schools include professional secondary schools and vocational secondary schools; vocational education centers include vocational training centers, vocational education centers, and vocational education——continuing education centers. By 2019, the Northwestern region has a total of 88 vocational training institutions (colleges account for 17%, secondary schools for 8%, and vocational training centers account for 75%). The number of vocational training centers (primary-level training) in the region is more than 3 times higher than the number of colleges (college-level training) and secondary schools; this is also the general situation in both regions and all the Country.

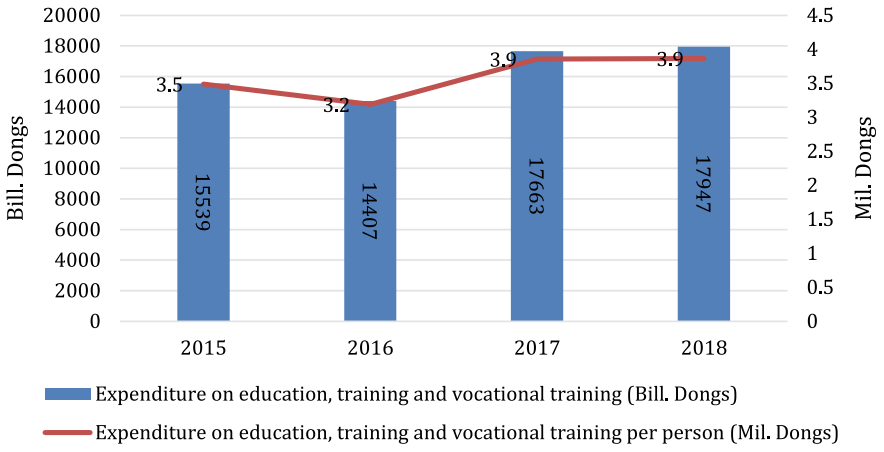

Fig. 1 Expenditure on Education, Training and Vocational Training in the Northwestern, 2015–2018. *Source* General Statistics Office (2020)

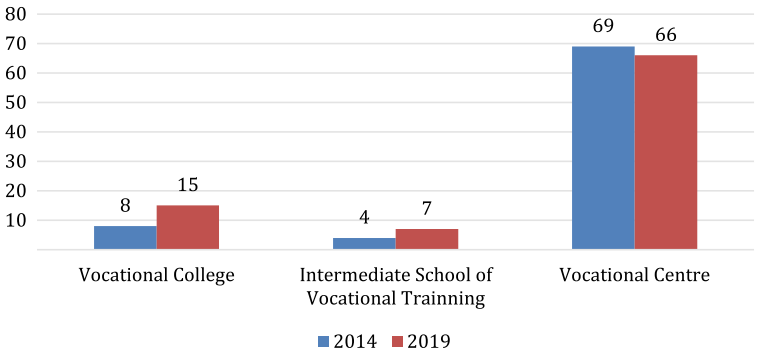

Fig. 2 Numbers of Vocational Institution in the Northwestern of Vietnam by Type, 2014–2019. *Source* Directorate of Vocational Education and Training

In addition to financial investment for vocational training, in the period 2014–2019, the State policy for vocational training institutions was also adjusted. Consequently, the number of vocational training institutions in the Northwestern region has seen many changes, especially after the Ministry of Labour, War Invalids, and Social Affairs received the colleges from the Ministry of Education and Training. The number of colleges and secondary schools increased compared to 2014, while the number of vocational training centers decreased due to merger and dissolution (see Fig. 2).

Along with the projects on merger and dissolution of inefficient vocational training institutions, the Ministry of Labour, War Invalids, and Social Affairs also stipulates the criteria and standard for vocational education quality accreditation (Ministry of Labour, Invalids, and Social Affairs 2017). This is an important activity aimed at improving the effectiveness and efficiency of management and administration, contributing to improving the quality of training in vocational training institutions in general and the Northwestern region in particular. According to a report by the General Department of Vocational Education, in 2017, 29 out of 88 vocational training institutions in the Northwestern conducted self-tests and submitted reports, higher than the national rate of 20.9% (see Fig. 3).

The improved vocational training quality is the premise for vocational training institutions in the region to increase the scale of training. In 2019, the number of ethnic minority people attending vocational training at vocational training institutions increased to 10,679 people compared to 6467 people in 2015. However, the increase is not equal at the levels of training, primary education level of education increased by 4.3 times, intermediate level by 2.1 times, while college level decreased sharply from 2358 learners in 2015 to 163 students in 2019 (See Table 2). The cause may stem from the employment characteristics of ethnic minorities in the Northwestern regions that are mostly self-employed and do not require a high level of occupational skills.

Table 2 shows that the main age group participating in apprenticeship is from 15–24, this is the ethnic minority group that will become the main labour force of

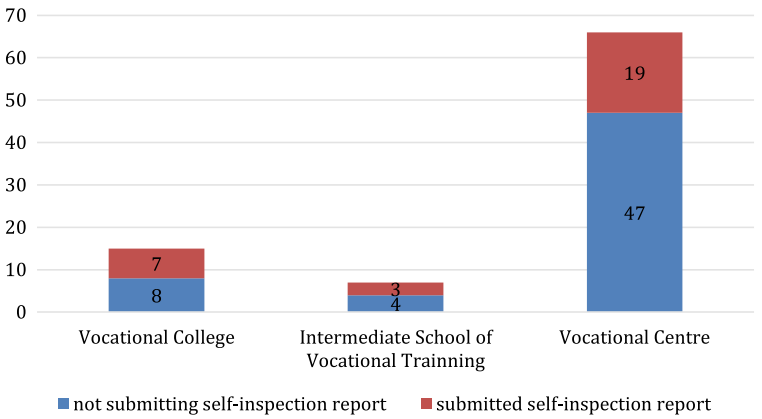

Fig. 3 Number of Vocational Institutions in the Northwestern of Vietnam Submitted Self-inspection Report, 2017. *Source* Directorate of Vocational Education and Training

Table 2 Ethnic minority people at 15 years of age and above in the of Vietnam taking vocational training, 2015–2019, person

Age group	2015			2019		
	Degree of vocational certificates	Degree of intermediate vocational certificates	Degree of vocational college	Degree of vocational certificates	Degree of intermediate vocational certificates	Degree of vocational college
15–24	626	2053	1911	3198	4184	7
25–34	66	788	350	180	1823	70
35–44	99	273	72	94	871	68
45–59	8	196	25	17	148	19
Over 60	0	0	0	0	0	0
Total	799	3310	2358	3490	7026	163

Source Survey on the Socio-Economic Situation of 53 Ethnic Minority Group in Vietnam, 2015, 2019

the region, so it is necessary to orient the vocational training in accordance with the village's needs and socio-economic development orientations of localities.

In the period 2015–2019, the vocational training policy implemented in the Northwestern region resulted in 51,141 ethnic minority people being trained at all levels. The result of the policy has significantly improved the professional level of labour in the region. The proportion of the labour force aged 15 and over who has undergone a significant increase has increased from 5.7% in 2015 to 8.8% in 2019 (see Fig. 4). However, the Northwestern area is still the region with the lowest proportion of ethnic minorities aged 15 and older who have received vocational training

Fig. 4 Ethnic minority people at 15 years and above in the Northwestern of Vietnam with vocational training, 2015–2019. *Source* Survey on the socio-economic situation of 53 ethnic minority group in Vietnam, 2015, 2019

in the whole country (23.1% for the whole country in 2019 (Central Population and Housing Census Steering Committee 2019).

Vocational training increases employment opportunities and enhances the gathering of ethnic minorities (Do et al. 2020). The reality in the Northwest also follows the same rule, but the rate of employed people in vocational training is the highest (see Fig. 5). Therefore, the Government's policy of supporting vocational training for ethnic minorities in the Northwestern region should focus on simple vocational

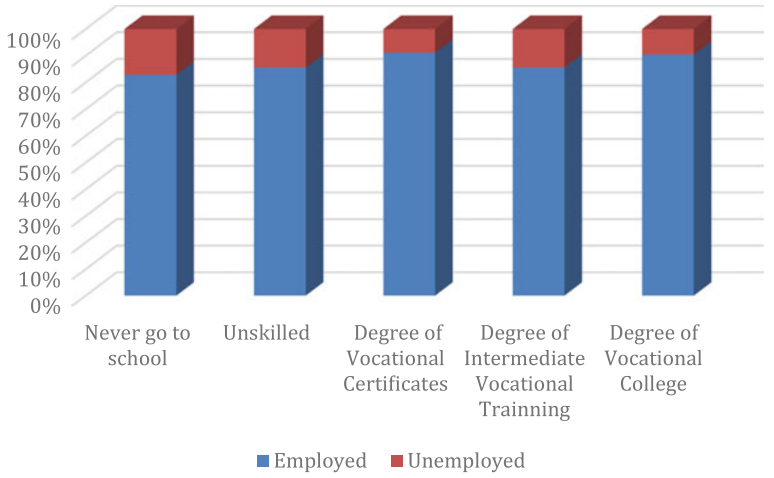

Fig. 5 Percentage of ethnic minority people at 15 years and above in the Northwestern of Vietnam by employment status and by qualification, 2019. *Source* Survey on the socio-economic situation of 53 ethnic minority group in Vietnam, 2019

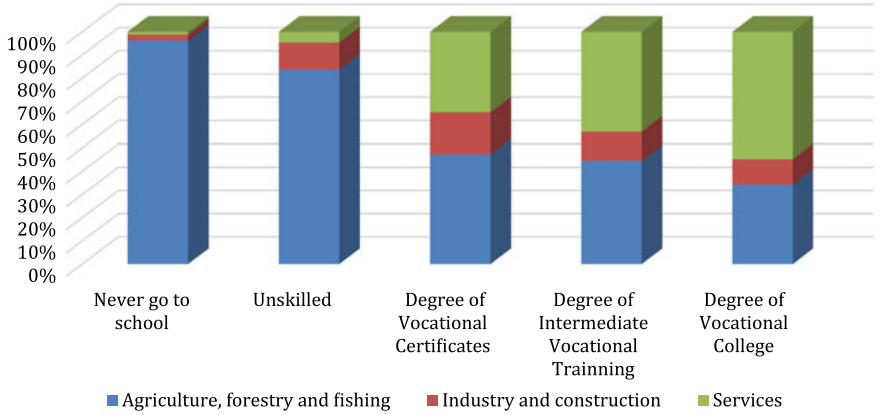

Fig. 6 Ethnic minority labours in the Northwestern by economic sectors and qualification, 2019. *Source* Survey on the socio-economic situation of 53 ethnic minority group in Vietnam, 2019

training, creating opportunities for them to increase productivity in self-employment and family labour. This is also the employment position that the majority of the Northwestern ethnic minority labours are engaged in (accounting for 85% of the total number of employed labours in 2019).

If only ethnic minority labourers were employed in the Northwestern region in 2019, Fig. 6 shows a clear trend that the more highly educated vocational training is, the more labourers will work in the translation industry. However, most labourers do not have a professional qualification or education to work in agriculture, forestry, and fishery. Based on these practical results, the training professions of vocational training institutions at different levels in the Northwestern region should guide the needs of the labour market.

5 Conclusion and Recommendations

The results of this study provide evidence that vocational training policies for ethnic minorities have achieved certain successes:

For ethnic minorities:

Firstly, policies have brought positive changes, uniformity in vocational qualifications and skills for ethnic minority labour groups.

Secondly, vocational training policies, together with other social security policies, have contributed to reducing the rates of income-based poverty and multidimensional poverty of ethnic minorities in recent years.

For ethnic minority regions:

Firstly, vocational training policies for ethnic minorities have contributed to the restructuring of the household economy in some localities, contributed to the restructuring of the local economic sector, and diversification of household income sources, especially non-agricultural incomes.

Secondly, vocational training policies for ethnic minorities have contributed to conserving and restoring traditional local craft villages, contributed to developing traditional craft villages in the context of industrialization, modernization, and integration with the world economy.

Thirdly, vocational training policies for ethnic minorities have contributed to promoting the development of non-agricultural enterprises (mainly in the construction and processing industries), contributed to creating conditions to increase employment in non-agricultural markets in localities.

However, there are still some inadequacies:

Firstly, the number of ethnic minority labourers who have received vocational training is still low. Most of them have just participated in short-term vocational training. There are very few labourers with an intermediate vocational training level. Although ethnic minority labourers are supported with vocational training funding, family living expenses of these labourers need to be guaranteed while they are not working. Therefore, credit loans to cover family activities during apprenticeship have a significant influence on the decision to participate in vocational training of ethnic minority labourers. After the training, labourers can find jobs by working abroad, or open their own businesses beside agriculture. Some others may need money to buy plant and animals. However, the lending policies for production development have many conditions that are difficult for ethnic minorities to meet.

Secondly, vocational training is not effective. Many ethnic minority labourers are either not able to find jobs after training or have jobs that are not connected with their trained occupations. It is difficult for non-agricultural vocational trainees to apply their knowledge and techniques to production; the number of labourers switching from the agricultural sector to industrial or service sector after vocational training is still limited. In addition, ethnic minorities only register for vocational training in the fields of animal husbandry and cultivation, because job seeking support in the locality has not been paid much attention compared to those jobs in other fields.

Thirdly, organizing classes for ethnic minorities is difficult due to unfavorable transport conditions and unsuitable methods of organizing classrooms for production, cultural and geographical practices. Therefore, classes are not able to attract ethnic minorities. Localities with many ethnic minorities have not yet developed specific vocational training policies for the localities. The coordination among sectors and localities in implementing policies is still inconsistent and loose.

The causes of these inadequacies are:

– The qualifications of ethnic minorities are uneven, as most of them have never been trained. A segment of the ethnic minority population is relatively old, has limited education and limited ability to acquire knowledge. Therefore, they are hesitant to go to school and have not been actively seeking jobs.

– In general, people, especially ethnic minorities, consider participating in vocational training to be very time consuming. They have to quit their current jobs and lose their earned income. Especially due to community practices, being afraid of changing the living environment and the way of doing business, ethnic minorities are not properly aware of the importance of vocational training for a career.
– In many localities, propaganda, consultancy, and mobilization of ethnic minorities to participate in vocational training, job searching support, guidance on loans after training, and product sales support have not been focused. The method of organizing propaganda is not abundant and ineffective. Ethnic minorities have not seen clearly efficiency after apprenticeship, so they have not actively participated in the programs.
– Local authorities at all levels and relevant agencies have not really paid attention to vocational training for ethnic minorities. Therefore, vocational training for ethnic minorities has not been integrated with socio-economic development policies and plans.

The results of this study provide several recommendations in order to encourage participation in vocational training for the purpose of promoting the efficiency of the labour market:

First, to labourers: Labourers need to recognize the importance of learning and to improve themselves in order to have better job opportunities and higher income. However, the training certificate is meaningful only if it is relevant to individual's competencies and market's demands. Therefore, labourers need to choose a suitable career;

Second, to enterprises: Creating opportunities to improve the qualifications of labourers will contribute to higher productivity and competitiveness of enterprises. Also, the enterprises should cooperate with training institutions to develop training content and to provide vocational training and support for labourers in practical activities;

Third, to the government: There should be specific policies supporting vocational-training service providers to organize vocational training for ethnic minority labourers. The government also needs to develop training content that is consistent with the situation of economic development in ethnic minority regions and suitable for local demands; socialize to increase investment in vocational training for ethnic minority labourers and apply flexible vocational training models.

The specific solutions below need to be considered and implemented:

First, localities need to be more proactive in developing vocational training plans and allocating resources for vocational training to ensure adequate and timely support for ethnic minority labourers who want to participate in apprenticeship. Completing policies that reduce tuition completely and increase scholarships as well as accommodation and travel support for vocational ethnic minorities with difficult circumstances.

Second, strengthening the network of vocational training institutions and training occupations by region and locality; focusing on building vocational training institutions for specialized/traditional jobs for ethnic areas as well as vocational education institutions that suit the conditions and needs of socio-economic development of each region, especially in mountainous areas. Prioritizing investment in material facilities for key schools in ethnic minority regions and boarding ethnic minority vocational training schools. Prioritizing funding to support rural labour for vocational training in localities with large ethnic minority populations. Training and improving the capability of vocational teachers for ethnic minorities at vocational training institutions; developing preferential and higher remuneration policies to attract talented and competent teachers, artisans and advanced craftsmen to participate in vocational training for ethnic minorities for better training quality.

Third, based on local socio-economic development conditions; culture, customs, practices of the ethnic minorities; and qualification of local ethnic minority labourers to effectively build an appropriate vocational training model, local job identity and career orientation for ethnic minorities. Reviewing and selecting portfolio of training occupations for ethnic minorities in addition to traditional occupations that focus on the requirements of high-tech agriculture in the current period. Restructuring the agricultural sector. Non-agricultural vocational training must originate from the needs of enterprises, industrial parks, manufacturing areas, large projects and labour export. Regularly updating the list of occupations, training programs, and formulating an appropriate cost structure for certain types of job to attract people to register for vocational training and to improve production efficiency in their localities.

Fourth, reforming vocational training programs to be suitable with the current market, demand and qualifications of ethnic minority trainees. Developing programs based on skills requirements of specific jobs and designing specialized training programs in ethnic languages for some ethnic minorities in mountainous areas that suit the conditions and the circumstances of these target groups. Strengthening training skills and applying lessons into production practices so that ethnic minorities can easily understand and apply them in the production process.

Fifth, building close relationships between vocational education and the labour market in regions and localities from districts and communes upwards to ensure the operation of the vocational education system aims to meet employers' needs, thus creating jobs for ethnic minorities after apprenticeship. Implementing preferential policies for enterprises investing in mountainous areas, and in ethnic minority regions, especially preferential policies for small and medium enterprises that invest in ethnic minority regions or employ ethnic minority labourers on the spot to work in enterprises. At the same time, encouraging enterprises, economic sectors, and non-public vocational training institutions to participate in vocational training and employ ethnic minority labourers to work for enterprises.

Sixth, improving the propaganda and vocational training counseling in various forms, integrating them with community cultural activities so that ethnic minorities can easily access, gain information, knowledge, and benefits from participating in vocational training. Moreover, promoting and encouraging ethnic youths to participate in longer-term training courses that can improve their capacity and help them

to find better jobs. Enhancing knowledge and information preparation for officials at all levels, party members, and local authority officials such as village and commune heads, village elders and village heads—who have a strong influence on ethnic minority communities in each area, regarding the content and importance of the Party's guidelines and resolutions on the development of ethnic minority human resources and on the role of training, improving the quality of human resources, as well as on vocational training for ethnic minorities. Ensuring that propaganda officers are knowledgeable about policies, providing adequate and timely information for ethnic employees on vocational training and job creation policies after apprenticeship so that they can promote their abilities, skills, awareness, responsibility in learning, contributing to improving the quality of training.

Seventh, developing mechanisms to link vocational training and job creation, in turn motivating ethnic minority labourers to participate actively in vocational training through specific credit support policies for trainees so they can develop production in their training fields. Developing mechanisms to provide and share information between labour supply and demand; identifying demands on vocational skills for ethnic minorities based on specific job and training level of production and business establishments in the locality; sharing information on the ability to organize vocational training courses, training occupations and the scope of supply given by vocational education institutions.

Eighth, developing mechanisms to promote active participation of business and labourers, at the same time, it is necessary to firmly understand the labour market's needs to be trained for each profession and field based on branch and sector development plans; mobilizing the participation of enterprises and good farmers in identifying demands, organizing vocational training, organizing production and consuming commodity products. This way, vocational training would bring efficiency and effectiveness for rural workers, especially ethnic minorities in mountainous areas.

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Quality of Personnel Via Accountants' Physical and Mental Strengths in Multinational Firms in Vietnam

Dung Tran Manh, Tai Do Duc, Tung Ha Son, and Dang Pham Van

1 Introduction

The incremental development of science and technology as well as the growing measure and diversity of their applications to production have further advanced societal production. However, the human resources in general and the accounting personnel in particular are still determinant factors in the production process, an indispensable source of power for any organization or enterprise and more importantly, for socio-economic growth. The quality of human resources in accounting field greatly influences corporate reputation and development (Nguyen 2014).

While sharing her experiences in regards to the development of accounting in the context of digital transformation, Dr. Mahzan—Chief Executive Officer of the Malaysian Institute of Accountants believes that accountants still play the key role in accounting, as machines lack professional judgment and skepticism. Besides, accounting uses various databases which are hard to be normalized. However, in order to adapt to new technology, accountants in the digital era must possess crucial skills such as technological competence, the abilities to adjust to change, to communicate fluently in English, as well as critical, strategic and analytical thinking.

The Accounting Law No. 88/2015/QH13 (National Assembly of Vietnam 2015) regulates that accountants must fulfill the following criteria: (i) Have good work ethic, honesty, integrity, compliance with the law; have adequate professional competence in accounting; (ii) Accountants have the right of independence of their professional competence in accounting; (iii) Accountants must follow the law of accounting,

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execute their assigned duties and take responsibility for their professional competence. In the event of a change in personnel, the former accountant must devolve their accounting assignments and documents to the new accountant. The former accountant is to be held responsible for the accounting work during their time as an accountant.

William (1970) holds in high regard the personnel's loyalty towards their organization and evaluates their faith in the organization through their enthusiasm, their interpersonal co-ordinations, their autodidacticism and others.

Multinational firms in Vietnam in general and in Hanoi in particular possess the abilities to quickly adapt to a fluctuating business environment, an increasingly competitive market and the process of integration of the economy of Vietnam into that of the region and of the world. Ergo, one of the matters in need of our concern is whether the human resources, particularly the accounting personnel of these companies, are able to meet the job's requirements under new circumstances and to improve their performance in order to adapt to the rhythm and tendency of this country's socio-economic development.

The evaluation of quality of personnel in general and of accounting personnel in particular consist of several criteria, with physical and mental strength being amongst the frequently used ones.

2 Literature Review

There have been many researches on quality of human resources all over the world, notably: Susan (1987). In his study, he set up evaluation criteria for quality of human resources in firms, which include awareness, employability skills, technical skills, attitude, trust, sensitivity, personal characteristics, etc. He assessed knowledge, working style, thinking and behaviors of human resources based on modern working environment and development. William (1991) said that human resources must have great knowledge to accomplish the job and be aware of creating wealth for the organization.

In Vietnam, Phung (2008) showed that the success of an organization based on human resources and the level of human resources. However, there has been no definitive solution to the problem of quality of human resources. Le (2009) has analyzed and evaluated practices to understand the advantages and disadvantages of human resources development in small and medium firms in Vietnam.

In the field of accounting, there are no adequate studies on the quality of human resources of accountants in Vietnam. The study of Do and Nguyen (2016), Do et al. (2018), Truong et al. (2018) presentation on performance of accountants, Determinants Influencing Performance of Accountants. In addition, the authors mentioned the quality of human resources of accountants but not clear and complete.

Inheriting the above studies, this study evaluates the quality of human resources via accountant's physical and mental strength in multinational firms in Hanoi with the survey object is the accountant in these firms. In addition, we employ both

research methodologies of qualitative and quantitative to evaluate the quality of human resources of accountants.

3 Research Methodology

We used a qualitative research methodology basing on in-depth interviews with 4 lecturers with extensive experiences in accounting in Multinational firms of the National Economics University, University of Labor and Social Affairs and Dainam University in Vietnam. At the same time, we interviewed 6 experts working as chief accountants and general accountants in Multinational firms. The results of the interviews includes quality of human resources via accountant's physical and mental strength.

Based on the prior studies and results of qualitative research through expert interviews, we conduct inductive method to verify, adjust and add attributes in questionnaires for collecting final data of the research.

Inheriting the results conducted by Susan (1987), William (1991), Le (2009) and using qualitative research methodology through interviews with experts, we identify quality of personnel via accountant's physical and mental strength (QPA) including six attributes as:

(i) QPA 1: Age range of the accounting personnel in multinational firms
(ii) QPA 2: Height of the accounting personnel in multinational firms
(iii) QPA 3: Weight of the accounting personnel in multinational firms
(iv) QPA 4: Health of the accounting personnel in multinational firms
(v) QPA 5: Work attitude of the accounting personnel in multinational firms
(vi) QPA 6: Mental wellbeing and the ability to work under pressure of the accounting personnel in multinational firms.

Then, we conducted a questionnaire consisting of 6 variables with a 5-point Likert scale from 1 "not totally agree" to 5 "fully agree". The method of data collection was done through the survey and subjects are accountants doing in multinational firms in Hanoi.

We sent 200 questionnaires and received the feedback of 180. After checking the information on the votes, there are 155 questionnaires with full information for data entry and analysis, the size of this sample is consistent with study of Gorsuch (1983).

We used both qualitative and quantitative approaches for analysis data. SPSS is a tool to support us to have descriptive statistics, Cronbach's Alpha, Independent T-test and ANOVA for evaluating and measuring the quality of personnel via accountant's physical and mental strength in Multinational firms in Hanoi.

4 Results and Discussion

4.1 Descriptive Statistics

Information of data collected is shown in Tables 1 and 2.

Data in Tables 1 and 2 show that among the 155 respondents, male accounted for 15.5%, while the remaining 131 were female, accounting for 84.5%. Of these, 17 worked as chief accountants, accounting for 11.0%; 54 General accounting accounted for 34.8%, accounting staff accounted for 54.2%.

Table 1 Respondents by gender and jobs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	24	15.5	15.5	15.5
	Female	131	84.5	84.5	100.0
	Total	155	100.0	100.0	

Table 2 Respondents by jobs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Accounting staff	84	54.2	54.2	54.2
	General accounting	54	34.8	34.8	34.8
	Chief accountant	17	11.0	11.0	100.0
	Total	155	100.0	100.0	

Table 3 Descriptive analysis of attributes of the quality of human resources via accountant's physical and mental strength

Attributes	Min	Max	Mean	Std. Deviation
Age range of the accounting personnel in multinational firms (QPA1)	2.0	5.0	3.890	0.8495
Height of the accounting personnel in multinational firms (QPA2)	2.0	5.0	3.916	0.7641
Weight of the accounting personnel in multinational firms (QPA3)	2.0	5.0	3.955	0.7503
Health of the accounting personnel in multinational firms (QPA4)	2.0	5.0	3.929	0.7986
Work attitude of the accounting personnel in multinational firms (QPA5)	1.0	5.0	3.794	0.9166
Mental wellbeing and the ability to work under pressure of the accounting personnel in multinational firms (QPA6)	1.0	5.0	3.858	0.9148
Valid N (listwise)			3.890	

Data in Table 3 illustrate that the respondents agree with the dependent variables of "the quality of human resources via accountant's physical and mental strength" including six attributes are quite high, there is an average of 3.890 compared to the highest of the Likerts 5-point scale. All 6 attributes are rated at an average of 3.794 or higher.

4.2 Testing Cronbach's Alpha

The quality of human resources via accountant's physical and mental strength is measured by the Cronbach's Alpha with coefficient of 0.701. Results of testing Cronbach's alpha of attributes are presented in Table 4.

Data above show that attributes of the dependent variables have a Cronbach's Alpha coefficient greater than 0.6 and are less than the common Cronbach's Alpha coefficient; the correlation coefficient of all attributes is greater than 0.3, so all the attributes of the dependent variables are statistically significant (Hoang and Chu 2008).

4.3 Independent T-Test

Comparing the results of the evaluation of the quality of human resources via accountant's physical and mental strength between men and women is shown in Table 5.

Results of Table 5 show that (i) Sig Levene's Test = 0.238 more than 0.05; the variance between the two sexes is not different; and (ii) Sig value T-Test = 0.866 > 0.05 There is no statistically significant difference in the level of the quality of human resources via physical and mental strength competence evaluation by workers who have different genders (Hoang and Chu 2008).

4.4 ANOVA Analysis

Comparison of the results of the evaluation of the quality of human resources via accountant's physical and mental strength between the three subjects, including under 30 years old, from 30 to 40 years old, over 40 years old.

Table 6 shows that Sig Levene Statistic = 0.038 is less than 0.05, the hypothesis of homogeneity variance among the variable value groups (different ages) has been violated (Hoang and Chu 2008). So, using Welch test for this case.

Table 4 Results of Cronbach's Alpha testing of attributes

Attributes	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's Alpha if item deleted
Age range of the accounting personnel in multinational firms (QPA1)	19.452	7.158	0.311	0.696
Height of the accounting personnel in multinational firms (QPA2)	19.426	7.090	0.324	0.615
Weight of the accounting personnel in multinational firms (QPA3)	19.387	5.875	0.535	0.648
Health of the accounting personnel in multinational firms (QPA4)	19.413	6.023	0.439	0.651
Work attitude of the accounting personnel in multinational firms (QPA5)	19.548	5.951	0.356	0.655
Mental wellbeing and the ability to work under pressure of the accounting personnel in multinational firms (QPA6)	19.484	5.615	0.445	0.651

Table 7 shows that Welch $= 0.827 > 0.05$, thus, there is not statistically significant difference in the quality of human resources via accountant's physical and mental strength for the accountant including under 30 years old, from 30 to 40 years old, over 40 years old.

Table 5 Differences of the quality of human resources via accountant's physical and mental strength between Men and Women—Independent Test

		Levene's test for equality of variances		t-test for equality of means						
		F	Sig	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
QHRA	Equal variances assumed	1.401	0.238	−0.169	153	0.866	−0.01813	0.10748	−0.23047	0.19421
	Equal variances not assumed			−0.158	30.414	0.875	−0.01.813	0.11460	−0.25205	0.21579

Table 6 Test of homogeneity of variances

Qpa			
Levene Statistic	df1	df2	Sig
0.038	2	152	0.963

Table 7 Robust tests

Qpa				
	Statistic	df1	df2	Sig
Welch	0.190	2	73.803	0.827

4.5 Discussion

Quality of the accounting personnel via physical strength

Quality of the human resources via physical strength encompasses their overall health. Without health, anyone might struggle with finishing their tasks. Not only does health have a noticeable impact on the quality of the human resources but it also vastly influences the quality of work. Here we are talking about both the physical and mental aspects of health.

So as to evaluate the physical strength of the accounting personnel, one of the criteria is statistics regarding age range, height and weight of the accounting personnel working in multinational firms. Accountants ranging from 30 to 40 years of age constitute the highest percentage in multinational firms in Hanoi. People of this age group is considered to have reached maturity in their thoughts and actions. They are also general accountants or heads of the accounting department in such firms (Table 8).

Height measuring is necessary to evaluate the physical health of the accounting personnel. Height ranging from 1.63 to 1.7 m are most common among male accountants, whereas height from 1.54 to 1.62 m make up the highest proportions among female accountants. These measurements fall within the average height of adult Vietnamese men and women and don't fall short in comparison with the average height of the accounting personnel in other countries such as Japan, South Korea, China, Thailand, etc., which shows the equivalence in height. This partly shows that the

Table 8 Respondents by age of accounting human resources

		Frequency	Percent	Valid percent	Cumulative percent
Valid	30 to 40 years old	84	54.2	54.2	54.2
	Under 30	38	24.5	24.5	78.7
	Over 40	33	21.3	21.3	100.0
	Total	155	100.0	100.0	

Table 9 Respondents by health human resources in accounting field

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Normally	34	21.9	21.9	21.9
	Healthy	13	8.4	8.4	30.3
	Good health	108	69.7	69.7	100.0
	Total	155	100.0	100.0	

Vietnamese people's physical strength is comparable to that of the countries in the region.

Weight is also a factor indicating the relationship between the accountants and their health. One's weight being inadequate to their height makes their body unfit and negatively impacts their actions and thoughts. The accountants with the weight of 50–65 kg represent the highest percentage, including men as well as women. From the height and weight measurements of the accountants working in multinational firms, we can see that the majority of the accounting personnel can reach the average height and weight worldwide.

The accountant's physical strength is also indicated by the factor of their overall health, more specifically by the frequency of their absent days due to being sick or needing a medical examination, or by their weight loss due to illness, etc. Results show that very few accountants have to take frequent sick leaves (1.0%), 6.5% of them have to take days off to get a medical examination, the rest rarely get sick. The accountants consider themselves to be healthy, with few cases of average health (21.9%). Hence, the health of the accounting personnel in multinational firms is quite good (Table 9).

Thus, the fitness of accounting human resources in Multinational firms in Hanoi reaches the national and regional average, is considered to be healthy according to the standards of the Ministry of Health, ensuring necessary conditions, and enough for work in Multinational firms as required by the human resources accounting capacity.

Quality of the accounting personnel via mental strength

Quality of the accounting personnel via mental strength comprehends attitude, morale, the ability to cope with pressure, etc. Judging by their work attitude, it's challenging to know if the personnel's mental strength can be elevated. Are the employees more hard-working? Are they better at regulating their emotions? Have they improved their behaviors? These elements are also under the influence of many factors, and their level of mental strength can foremost impact their living and working environments.

The accounting personnel's work attitude

There has yet to be specific criteria to estimate the accountants' attitude. According to specialists, this can be relatively evaluated by using behavioral criteria, which include: frequency of their absent days, informed absent days, coming to work late, doing personal business at work, their level of concentration on work, etc.

Table 10 shows that the frequency of their absent days of the accounting personnel unusual accounted for 64.5%; while the remaining 6 were regular, accounting for 3.9%.

Additional information:

(i) Informed absent days: Most of the accountants who take a day off inform their superiors, those who rarely inform are very few.
(ii) Coming to work late: The majority of the accounting personnel often show up at work on time, only a few show up late.
(iii) Doing personal business at work: The number of accountants who take care of personal business at work is very small, most of the accountants scarcely do their personal affairs at work or don't do it at all.
(iv) Level of concentration on work: The accounting personnel in multinational firms must take on a heavy workload, the system of accountants in such firms are usually organized in a mixed form, the method of organization is online and functional, thus the accounting personnel must pay concentrate on their work in order to get them done. However, it's virtually impossible to avoid talking to one's colleagues while working.

Besides, the intellectual and capacity competition, there is also competition for working attitudes. The working attitudes directly determines the behavior of a person, decide to work hard or just deal with the job, content with what you have or there are loyalists who want to go further. Therefore, for Multinational firms in general, accounting department in particular, building and developing a dedicated working attitude, enthusiasm of employees is very necessary and urgent.

Nurturing a positive attitude is one of the methods of developing confidence: (i) Need to clearly identify negative thoughts of yourself, thereby turning negative thoughts into positive thoughts; (ii) Don't let negative thoughts appear at a higher frequency than positive thoughts; (iii) Maintain a positive relationship by: Stay in touch with close people, be it family members or friends, to keep your perspective up. Also, avoid people who make you feel uncomfortable.

Thus, the workplace attitude of accounting human resources has shown professionalism, working style quite commensurate with the development of Multinational firms. Therefore, this needs to be concerned by human resources accounting and administrators in firms.

Table 10 Respondents by frequency of their absent days

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Unusual	100	64.5	64.5	64.5
	Not	19	12.3	12.3	76.8
	Sometimes	30	19.4	19.4	96.1
	Regular	6	3.9	3.9	100.0
	Total	155	100.0	100.0	

Table 11 Respondents by willing human resources in accounting field

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Normal	26	16.8	16.8	16.8
	Not willing	15	9.7	9.7	26.5
	Very willing	33	21.3	21.3	47.7
	Willing	81	52.3	52.3	100.0
	Total	155	100.0	100.0	

Psychology and ability to withstand work pressure of accountants

The task of an accountant: (i) Namely collecting and processing information, accounting data by object and content of accounting work, according to accounting standards and accounting regime; (ii) to inspect and supervise financial revenues and expenditures, obligations to collect and pay debts; to inspect the management and use of assets and sources of asset formation; detecting and preventing acts of violating the legislation on finance and accounting; (iii) analysis of accounting information and data; to advise and propose solutions to the management and economic and financial requirements of the accounting units; (iv) to supply accounting information and data according to the provisions of law. (National Assembly 2015). To complete the task on time and with quality or at the end of the accounting period… the accountants must work overtime, work more in the evening or on holidays.

Table 11 shows that 21.3% of the accountants are very willing to work overtime; 52.3% of them are willing; only 9.7% aren't willing, this group consists of new mothers.

One of the factors influencing the level of willingness or enthusiasm is the motivation to work, especially financial motivation. The salary for accountants must be able to attract them to the company, the working conditions must be able to work up their enthusiasm. These conditions include the working office, equipment of information technology (IT), etc.

Moreover, accounting is a field of various choices. If the accountant possess skills suitable for this field, they can find ways to use them and do work that matches their interests, strengths and personality at the same time. Accounting offers those who practice it a clear and practical future. The potential for development is limitless. Accounting is a diverse field of work with different branches. These branches can be divided into different areas of work: finance, administration, auditing and tax. Because of this diversity, accountants have multiple choices throughout their career.

The accountant's ability to cope with pressure: Accounting requires hard thinking, working closely with numbers that demand absolute accuracy, with tables, charts and big statistical figures. Accounting may appear to be easy work but it actually requires continuous thinking with caution and rigor. That's why many accountants suffer from stress, sick building syndrome, headache, etc. The responsibilities that accounting bares are great, because accountants are valuable in firms, they hold all plans concerning revenues and expenses, the current financial and budgetary situation

of the company, etc. Just a little mistake can lead to an accrued liability, for which the accountant will be the first to be held responsible.

5 Recommendations

5.1 For Accountants

(i) **Improve the accounting personnel's mental strength**

Prioritize effectively: Firstly, a debuting accountant should learn the most basic things about this field to gain confidence. Next is practicing and revising the basics if possible, so as to strengthen their knowledge. Working effectively is the most important key to success in accounting.

Always be an active learner: Accountants should learn from their teachers in courses, colleagues, friends who also work in the accounting field or websites about accounting and auditing.

Improve your knowledge on IT: Application of IT to accounting is indispensable: accountants use IT to finish their assignments, most of their work requires IT.

Accountants must be inquisitive, have a good work ethic, maintain their positivity and solve unexpected problems in a calm manner.

(ii) **Improve the accounting personnel's physical strength**

Accountants must take care of their health, make detailed plans to improve it by means of exercising, playing sports, creating a balance diet, etc.

Health includes both physical and mental aspects. Mental health impacts the abilities to think and to self-regulate. Hence, accountants should try to maintain positive moods and avoid thoughts that are stressful, depressing, anxious, etc.

5.2 For Multinational Firms in Hanoi

Salaries contribute to improving the quality of accountants. The remuneration policy of Multinational firms are aimed at attracting and recruiting qualified people who are capable of handling jobs, encouraging accountants to improve their capacity and retaining expert accountants for the firms. Therefore, the level of salaries for accountants must ensure satisfactory living, further learning, thus attract high-quality accountants to work for Multinational firms. In the most cases, salary is the most effective driving force that has been applied so far.

Education and training play an important and decisive role in improving the quality of accountants. Human knowledge and creativity are the result of education and training, which shows that education and training are not only influential determinants

but also determinants of the quality of accountants. Therefore, the importance of education and training is the leading factor in developing the quality of accountants is very necessary for long-term development strategy of Multinational firms.

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How Do Japanese MNCs Identify Talent? The Neglected Role of Regional Headquarters in Global Talent Management

Tamiko Kasahara

1 Introduction

Global talent management (GTM) has attracted increased interest over the past decade, and talent shortage has become an urgent issue for multinational companies (MNCs) (Collings and Mellahi 2009; Morris et al. 2016; Scullion et al. 2010; Tarique and Schuler 2010). Consequently, MNCs are resolute in selecting, nurturing, and retaining the best employees in roles that are critical for achieving organizational strategic priorities on a global scale (Scullion et al. 2010, p. 106). Generally, GTM focuses on the management of specific, talented, and highly competent candidates, potential leaders, and/or key professionals either in the present or future (Björkman et al. 2013). The basic premise underlying GTM research is that global companies identify and utilize talent in pivotal positions regardless of nationality (Björkman et al. 2013; Mellahi and Collings 2010; Ready and Conger 2007) and that key talent management activities, such as senior management development, succession planning, and international transfers of high potential managers, are controlled centrally (Scullion and Starkey 2000).

In general, recent studies have suggested that HQs could fail to recognize and identify talent located in host countries that are culturally and geographically distant from HQs because of such barriers such as information asymmetry and limited social bonds between decision makers at HQs and local talent (Mäkelä et al. 2010; Mellahi and Collings 2010). Cultural and institutional factors are known to influence the manner in which organizational practices are implemented and internalized in foreign subsidiaries (Kostova and Roth 2002). Previous studies have investigated the factors that impact the distance between two parties regarding talent identification. Despite increased attention on this topic, there is negligible evidence on how MNCs address

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the barriers between two parties as part of the GTM system that intermediates the distance between HQs and foreign subsidiaries.

This study seeks to bridge the research gap by examining the following research question: "how do Japanese MNCs identify local talent in subsidiaries distant from HQs and incorporate them into the HQ's corporate talent pool?" Specifically, this study sheds light on the role of regional headquarters (RHQs) in the talent identification process using cases studies of Japanese MNCs. The reasons for focusing on RHQs in the talent identification process are as follows. First, MNCs use RHQs to expand their business into emerging countries because the markets may be geographically too distant to be coordinated and managed by HQs (Yeung et al. 2001, p. 160). Second, RHQs play a role in intermediating information asymmetry in areas, including talent identification, which arises from the geographical and cultural distance between HQs and distant host countries (Nell et al. 2011; Preece et al. 2013). Despite the role that RHQs may play in intermediating the distance between HQs and overseas subsidiaries in the talent identification process, RHQs have been overlooked in GTM research (Preece et al. 2013) because of the tendency to adopt a dichotomous view of the relationships between HQs and their foreign subsidiaries (Yeung et al. 2001). Moreover, RHQs are viewed as a preliminary step (regionalism) toward geocentric orientation for MNCs (e.g. Heenan and Perlmutter 1979) in GTM research. Using 10 detailed case studies of Japanese MNCs in Turkey, this study contributes to GTM research on the role of RHQs in the talent identification process of MNCs.

The remainder of this chapter is structured as follows. First, I briefly review the challenges in identifying talent in MNCs related to distance. Then, I explain the dichotomous view of GTM and explore the role of RHQs in GTM. I then explain the methodology and research context for Turkey. In the results section, I present GTM practices in Japanese MNCs with operations in Turkey through 10 case studies. Then, I examine the role of RHQs in GTM, particularly the inclusion of local talent in the HQs' talent pool, by analyzing the interview data of seven Japanese HQs in Japan.

2 Theoretical Perspectives

2.1 Challenges in Identifying Talent that is Geographically and Culturally Distant from HQs

Talent identification and talent pool construction are one of the major issues for GTM. However, previous studies have suggested that MNCs need to address barriers due to distance that influence talent identification and inclusion in talent pool at HQs. Distance refers to the extent of differences between country pairs in an international business context (Hutzshenreuter et al. 2015). It is mainly known by cultural, institutional, geographic, and economic distance (Ghemawat 2001; Johanson and Vahlne

1977). Cultural distance is one of the most empirically tested concepts in international business through the use of Hofstede's (2001) four dimensions and the Kogut and Singh index (Kogut and Singh 1988). Cultural distance refers to the extent to which the norms, values, beliefs, and assumptions in one country differ from those in another (Dellestrand and Kappen 2012). Institutional distance relates to differences in the regulatory, normative, and cognitive pillars of institutions (DiMaggio and Powell 1983; Scott 2013). In the international business context, with the home country as a reference point, geographic distance refers to the distance between the home country and the focal foreign country (Dellestrand and Kappen 2012). Economic distance is usually captured as differences in per capita GDP (e.g. Hutzshenreuter et al. 2015; Malhotra et al. 2009; Tsang and Yip 2007).

Prior studies have suggested that barriers due to distance, such as information asymmetry and social bonds between decision makers at HQs and talent at subsidiaries, impact the HQ's inclusion of local talent that are geographically and culturally distant from HQs in the HQ's talent pool (Mäkelä et al. 2010; Mellahi and Collings 2010). Mellahi and Collings (2010) identified barriers that raise information asymmetry on goals and objectives between HQ and the subsidiary, and bounded rationality whereby HQs fail to identify local talent in distant subsidiaries from HQs, because distance isolates the local talent from the center of the HQ. They employed agency theory (O'Donnell 2000), which attempts to solve problems arising from the relationship between a principal (HQ) and an agent (subsidiary), and found that information asymmetry between the HQ and the subsidiary may result in the local subsidiary acting according to self-serving interests that limit the advancement of their best talent as the local talent generates benefits and contributes to the subsidiary's performance. Thus, the subsidiary is reluctant to share and transfer talent to other operations or to the HQ (O'Donnell 2000). This is referred to as "silo mentality" whereby each subsidiary or region seeks to hold onto and protect its managerial talent within its operational and regional silo (Sparrow et al. 2011, p. 50) thereby limiting their career progression to a region (Collings et al.2008). In addition, as HQ level barriers, Mellahi and Collings (2010) pointed out that the strength and frequency of social bonds between HQs and the subsidiary depend on geographical distance; when a subsidiary has a distant location from the HQ, the whole MNC may fail to utilize its best talent.

Scholars have assumed that contact, information, and knowledge exchange can be more easily facilitated between individuals who are in geographically, culturally, and institutionally proximate locations than those who are not (e.g. Boschma 2005; Mäkelä et al. 2010; McPherson et al. 2001; Mellahi and Collings 2010). Mäkelä et al. (2010) proposed a two-stage model of talent identification involving experience-based (on-line) and cognition-based (off-line) managerial decision making in a Finnish MNC. As factors that influence the cognition of the decision makers in MNCs, authors highlighted cultural and institutional distance between the locations of candidates for inclusion in the talent pool and the decision makers, homophily between candidates and decision makers, and the network position of candidates (working at HQs or at a central subsidiary). These factors arise from geographical and cultural distance and prevent local talent from building a personal network with

key decision makers at HQs. It may be difficult to depend on local individuals' abilities to develop a connection with key personnel at HQ, as they cannot control the context of opportunities. RHQs have drawn the attention of researchers because they can intermediate the distance between managers at HQs and local talent located in distant subsidiaries.

2.2 *Dichotomous View of GTM and the Role of RHQs in GTM*

An RHQ is a business establishment that has control and management responsibilities for the operation of one or more subsidiaries or affiliated companies located in the same host region (Yeung et al. 2001, p. 158). MNCs have established RHQs to expand their business into emerging countries because the markets may be geographically too distant to be coordinated and managed by the HQ (Yeung et al. 2001, p. 160). RHQs intermediate between HQs and overseas subsidiaries (Preece et al. 2013). However, the role of RHQs has been overlooked in research on international business including GTM because of the tendency to adopt a dichotomous view of the relationships between HQs (global) and foreign subsidiaries (local) (Yeung et al. 2001). The global–local dichotomy has led to a conceptual lacuna for intermediate geographic levels between HQs and local subsidiaries.

In the GTM research context, the global–local dichotomy, which is based on institutional theory (DiMaggio and Powell 1983), has been studied in terms of similarity (global standardization) and dissimilarity (localization) of GTM practices between HQs and foreign subsidiaries (e.g. Björkman et al. 2008; Pudelko and Harzing 2007; Rosenzweig and Nohria 1994). In this dichotomous view, to ensure internal consistency, global companies aim to standardize their GTM approaches to the group as a whole, that is, country-origin effect (e.g. standardization occurs around home-country practices), and to a worldwide convergence of management practices, that is, the dominance effect; meanwhile, MNC subsidiaries adapt their practices to the host environment to emphasize the embedded nature of national business methods and systems (Hofstede 1980), known as the localization effect (Pudelko and Harzing 2007). In this way, geographical-level studies on GTM have received much less attention in the literature. Moreover, RHQs are viewed as a preliminary step (regionalism) toward geocentric orientation for MNCs (e.g. Heenan and Perlmutter 1979). Therefore, the roles of RHQs in GTM have been explored only within the regional concept. Preece et al. (2013) explained the role of RHQs as (i) identifying and sharing "best operational practices" and developing regional strategy; (ii) creating a regional talent pool; (iii) encouraging labor mobility around the region; and (iv) integrating human resource management (HRM) by intermediating between HQs and regional subsidiaries. Scholars have highlighted the limitations of GTM within a specific region as follows. First, employees are rarely transferred across regions or from regions to HQs; therefore, an ambitious talent's career may be limited to a

specific region, with only marginal chances of being assigned to the HQ (Preece et al. 2013). Second, each region may develop a "silo mentality" that in turn constrains talent development within a specific region. For these reasons, an MNC is unable to identify and use the best talent within its group (Sparrow et al. 2011).

Although some limitations of regiocentric orientation toward GTM have been identified, Nell et al. (2011) introduced intermediating roles, such as an integrative mechanism played by RHQs in narrowing the information asymmetries between HQs and regional subsidiaries. Nell et al. (2011, p. 94) noted that to close information gaps between HQs and local subsidiaries, "RHQs provide face-to-face interaction through workshops in the regions, regional tasks for subsidiary managers and intra-regional personnel development. Furthermore, RHQs often engage in organizing regional meetings to discuss business processes and procedures". Although, Nell et al. (2011) and Preece et al. (2013) suggested that RHQs play a role in intermediating information asymmetry, there are few studies on the intermediating role of RHQs in international business nor GTM.

3 Methods

To explore GTM practices and the intermediating role of RHQs in the talent identification process between HQs and distant subsidiaries, I focused on Japanese MNCs and their subsidiaries in Turkey. This study focused on country-level distance. The reason for focusing on Japanese MNCs is that there is little research on how Japanese MNCs implement GTM practices and identify local talent in distant local subsidiaries. The reasons for selecting Turkey among host countries are as follows. First, Turkey geographically and culturally distant from Japan. The geographical distance between Tokyo, Japan and Istanbul, Turkey—8939.84 km—was calculated using MapCrow (e.g. Dellestrand and Kappen 2012). This study has used Hofstede's cultural dimensions to calculate cultural distance, even though they have received criticism (Dellestrand and Kappen 2012). I assumed that it is difficult for Japanese HQs to control and coordinate Turkish subsidiaries directly, owing to geographical and cultural distance, unlike the case of Asian countries. Therefore, it is better to target subsidiaries within the EU to explore the research question of this study. Second, Turkey has gained attention from industry and academia due to its geographical accessibility to various markets such as the European Union (EU), the Middle East, and North Africa (i.e. EMEA countries). Hence, the establishment of subsidiaries or RHQs in Turkey is an attractive way for MNCs to expand their business into Turkey's neighboring countries. Little is known about the intermediating roles of RHQs in GTM between HQs and distant subsidiaries from HQs and GTM in Japanese MNCs in emerging countries. This is the reason for focusing on the distance between Japan and Turkey in this study. The research context of Turkey and the strategic status of Japanese subsidiaries in Turkey are explained in the next section.

To improve the contextual understanding of GTM including the talent identification process among Japanese MNCs with Turkish subsidiaries, I adopted a qualitative

approach based on case studies. A qualitative approach has many advantages (Eisenhardt 1989; Pettigrew 1992). Specifically, it is sensitive to context and process, to lived experience, and to local groundedness, and the researcher aims to get closer to the focus of study. Qualitative research aims to achieve in-depth and holistic understanding to do justice to the complexity of social life (Punch 2005, p. 239).

Data were collected from multiple sources. I contacted the Japan External Trade Organization (JETRO) to acquire information on Japanese MNCs that were operating in Turkey. According to the JETRO data, 157 Japanese companies were registered in Turkey as of November 2014. The target selection criteria based on JETRO data were as follows. First, companies had to be located in the Istanbul area for greater accessibility. Second, companies had to have GTM practices and implement the program for local talent. Third, to assess the impact of RHQs on GTM in local talent identification, I selected Japanese MNCs that had RHQs and those that did not. Fourth, I considered the entry mode (greenfield; merger and acquisition, M&A; or joint venture) and time of entry (from 1990 to 2013) to compare differences in GTM programs and talent identification processes among Japanese MNCs. Primary data were collected through 30 semi-structured interviews with the employees of 10 Japanese MNCs and related organizations with operations in Turkey, as well as 20 semi-structured interviews with the presidents, senior managers, and/or HR managers of seven Japanese HQs and related organizations with operations in Japan. Companies were contacted via email and telephone. The interviews included questions about the strategic position of the Turkish subsidiary in the MNC group with respect to operations, recruitment and selection, and training and development, in line with previous studies (Stahl et al. 2007). To evaluate the similarity between the subsidiary's GTM practices and those of the foreign parent organization, I incorporated similar questions to those used in previous studies (Björkman et al. 2008; Hannon et al. 1995; Rosenzweig and Nohria 1994). The managers of our targeted companies were asked to indicate whether the MNC's home country operations were very similar to or different from the subsidiary's GTM practices (on a scale from 5 to 1). The same question was asked regarding the extent of similarity with the operations of local companies using a scale from 5 to 1. In addition, I examined the methods and criteria used when recruiting new local managers and professionals as well as the extent and content of training and development programs for such managers and professionals. Moreover, to examine the inclusion of Turkish talent in the talent pool at HQs and the role of RHQs in doing so, interviewees at HQs were asked about the role of RHQs in their global strategy and GTM, including the talent identification process, and about the relationship between RHQs in Europe and Turkish subsidiaries. The reason for not interviewing the RHQs of our targeted companies is based on the recommendation in 2016 of the managers of the RHQs that I should contact their HQs to explore my research interests owing to the implementation of their GTM programs based on GTM policy developed in Japan.

Three phases of interviews were conducted. In the first phase, interviews were conducted at five Turkish subsidiaries of Japanese MNCs from the end of August to early September 2014. The second phase comprised follow-up interviews in

September 2015 with three of the original companies and six additional companies, to confirm the initial findings and collect additional information. In the third phase, in August 2016, interviews were conducted at the HQs of seven Japanese HQs and related organizations with operations in Japan to study the role of RHQs in GTM. I was unable to arrange appointments to interview some Japanese companies (HQs) owing to organizational changes and firm workload.

Although the interview periods varied, all respondents had been working at the same company for at least 1 year. As such, the interviewees were familiar with their GTM procedures. The interviews lasted 90 min, on average, and were conducted in English and/or Japanese with Japanese and/or Turkish interviewees at Turkish subsidiaries, and in Japanese at Japanese HQs. These interviews were recorded and transcribed and the resulting interview data were translated from Japanese into English, as required. At a later date, I followed up with the interviewees by email and/or telephone with further questions to clarify unclear points. In addition, secondary data were obtained from company websites.

Table 1 shows the target companies' profiles including the HQs and subsidiary's company age, entry mode, business type, number of employees, number of expatriates (Björkman and Lu 2001; Rosenzweig and Nohria 1994), and nationality of top management. To maintain the companies' anonymity, I assigned symbolic names to each company. Table 1 shows that the entry mode impacts the case selection (timing of entry). Initial entries from 1991 to 2003 were mainly automotive companies that sought to establish manufacturing bases in Turkey. The second set of entries from 2011 to 2013 comprises many industries, M&As, and joint ventures. Although, Japanese MNCs are considered to maintain an ethnocentric orientation toward global staffing (e.g. Kopp 1994), among the Turkish subsidiaries that I investigated, 2 of the 10 companies (C5 and C8) had a policy of requiring no more than one expatriate at each foreign operation in order to promote the localization of management. Host-country nationals (HCNs) were used in key managerial positions at every company and in executive positions at some companies, regardless of the company's age and entry mode. In 5 of the 10 companies (C5, C6, C7, C9, and C10), HCNs or third-country nationals (TCNs) were presidents because of the subsidiary's form of establishment (M&A or joint venture). Based on the data, top management composition did not depend on a company's nationality but rather on its entry mode. The next section explains the research context of Turkey and the strategic position of Japanese subsidiaries in Turkey.

4 Research Context: Turkey

Turkey has great potential to expand and develop in the future, which offers advantages for MNCs. First, Turkey's youthful population provides significant potential for market expansion. The country's population was 76.9 million in 2014 (OECD 2016) and is growing at a rate of 1million people per year (JETRO 2015). According to the Turkish Statistical Institute, the median age in Turkey was 30.7 years in 2014,

Table 1 Company profiles of Turkish subsidiaries

Company	Company age	Entry mode	Business type	Number of employees (Number of expatriates)	Nationality of top management	Interviewees
C1	1991	Greenfield	Nonferrous metal	663 (14)	PCNs	1. Managing Director (Japan)
						2. General Manager, Sales and Marketing (Turkey)
						3. General Manager, Accounting & Finance, HR, IT (Turkey)
						4. Senior Sales Manager (Japan)
						5. Accounting Manager (Japan)
						6. Human Resource Manager (Turkey)
C2	1992	Joint venture	Car & auto parts	757 (13)	PCNs	1. Assistant to President, Business Administration (Japan)
						2. HR Assistant Manager (Turkey)
C3	2001	Greenfield	Auto parts	791 (7)	PCNs	1. President (Japan)
						2. HR Assistant Manager (Turkey)
C4	2002	Greenfield	Auto parts	350 (4)	PCNs	1. President (Japan)
C5	2003	Greenfield	Auto parts	70 (1)	HCNs	1. General Manager (Turkey)
						2. Senior Coordinator (Japan)
						3. Chief HR & Administration Department (Turkey)

(continued)

Table 1 (continued)

Company	Company age	Entry mode	Business type	Number of employees (Number of expatriates)	Nationality of top management	Interviewees
C6	2011	Merger & acquisition	Machines	200 (3)[a]	HCNs	1. Vice President (Japan)
C7	2012	Joint venture	Medicine	54 (1)	HCNs	1. Deputy Managing Director (Japan)
C8	2012	Merger & acquisition	precision equipment	110 (1)	PCNs	1. President (Japan)
C9	2012	Joint venture	Chemical	130 (1)	TCNs	1. Corporate Planning Director (Japan)
C10	2013	Merger & acquisition	Electrical equipment	720 (5)	HCNs	1. HR Manager (Japan)

[a]The number of employees at C6 is only the number of staff at the central office in Istanbul, Turkey

compared with 37.7 years in the EU and 43.8 years in Japan (JETRO 2015); thus, MNCs have access to a more youthful workforce in Turkey than in these developed markets. Moreover, in 2014, Turkey's nominal GDP per capita was $19,610 and the economy grew by 2.9% (OECD 2016). Turkish GDP ($798.4 million) was ranked 18th worldwide after the Netherlands, surpassing Saudi Arabia, to rank first among all Middle East countries in 2014 (The World Bank 2015). In addition, Turkey is geographically accessible and provides easy access to various markets, including EMEA countries and Russia. Thus, many US MNCs have located their RHQs and export, manufacturing, and sales subsidiaries in Turkey as footholds to expand their business into neighboring countries.

Competition for talent from MNCs is becoming a key issue for Turkish companies owing to foreign direct investment from Europe and emerging countries such as Russia and Lebanon (Japan Bank for International Cooperation 2014, pp. 33–34), as well as rising MNC demand for talented younger workers (Tatoglu et al. 2016). Turkish firms are generally small and medium-sized enterprises in conventional manufacturing industries (Kaya 2006, p. 2075). Most of these firms tend to be family-owned with a highly concentrated and centralized ownership structure (Kaya 2006; Kula 2005). The HRM practices in these firms have tended to reflect Turkish culture, emphasizing high power distance, uncertainty avoidance, collectivism, and paternalistic values (Gurbuz and Mert 2011). Under this culture, Turkish managers tend to favor top–down communication in a parent–child type of relationship, with the concept of "family" in the organization shaping behavior (Tatoglu et al. 2016, p. 281). Management positions are occupied by family members (Gurbuz and Mert 2011; Kaya 2006) and organizations in the public sector tend heavily toward favoritism. These organizations suffer from poor practices such as late payments to employees, job discrimination, and career management including promotion based on seniority (Tatoglu et al. 2016). However, some studies indicate that Turkish firms adopt Western-style HRM practices as their interactions with foreign counterparts in external and internal markets (Kaya 2006; Tatoglu et al. 2016), and encourage Turkish firms to change their working culture in order to integrate Western and Eastern values and systems (Kaya 2006).

4.1 Strategic Position of Japanese Subsidiaries in Turkey

Most Turkish subsidiaries of Japanese MNCs are controlled by their RHQs in Europe. In some subsidiaries, presidents and senior managers are transferred from RHQs to set-up a business in Turkey or to manage subsidiaries. All Japanese companies focus on capturing domestic markets and supplying their products to local and/or foreign-owned companies in Turkey.

Table 2 outlines the strategic positions of the 10 Japanese MNCs' subsidiaries in Turkey, which are the focus of this study, including company age and entry mode. Of the 10 companies, 7 (C1, C2, C3, C5, C6, C8, and C10) position Turkish subsidiaries as export hubs for EMEA countries and Russia, regardless of company age and entry

Table 2 Outline of the strategic positions of each Japanese subsidiary in Turkey

Company	Company's establishment year	Entry mode	RHQs	Strategic positions of each Japanese subsidiary in Turkey		
				Manufacturing	Sales	Export hubs for neighboring countries (EMEA, Russia, and North and Central Asia)
C1	1991	Greenfield	✓	✓	✓	✓
C2	1992	Joint venture	✓	✓	✓	✓
C3	2001	Greenfield		✓	✓	✓
C4	2002	Greenfield		✓	✓	
C5	2003	Greenfield		✓	✓	✓
C6	2011	Merger & acquisition	✓	✓	✓	✓
C7	2012	Joint venture			✓	
C8	2012	Merger & acquisition	✓		✓	✓
C9	2012	Joint Venture	✓		✓	
C10	2013	Merger & acquisition	✓	✓	✓	✓

mode, by leveraging Turkey's geographic accessibility. Of the 10 companies, 5 (C2, C4, C6, C7, and C10) seek to expand their business into neighboring regions, such as Russia, North Asia, Central Asia, and the Caucasus, as well as North Africa in the near future. The next section explains how the subsidiaries of Japanese MNCs manage their talent, specifically their recruitment and selection as well as training and development practices.

5 Results

5.1 GTM Practices in Turkish Subsidiaries of Japanese MNCs

5.1.1 Recruitment and Selection

To identify talent, all Turkish subsidiaries develop and utilize existing local recruitment and selection practices regardless of company age and entry mode. Specifically, 6 of the 10 companies have developed their own local recruitment and selection practices while the rest (C6, C7, C9, and C10) utilize local practices developed with local joint venture partners and acquired companies.

Table 3 outlines the recruitment and selection practices of the 10 Japanese companies in Turkey including the recruitment requisites. The institutional effect shows that the subsidiaries' HRM practices are either localized (L: local adaptation) or globally standardized (G: global standardization).

All Japanese companies screen talent when they recruit candidates through websites, such as Career Net, or through the same headhunters that local companies use. These companies evaluate the requisite abilities for a position that they need to fill before initiating recruitment activities. Although the hiring criteria differ by company, most hire from the external employment market and screen candidates based on the position's requisite abilities, including English skills, career history, specialized knowledge, and whether the candidates can share the MNC's corporate values. By contrast, automotive parts companies emphasize filling posts from an internal talent pool owing to industrial characteristics. Most companies require English skills as their official language is English. Despite the official language, some companies (C2, C3, C4, and C5) hire permanent translators to foster communication between expatriates and local talent. Half of our targeted companies emphasize cultural fit as well as job-related skills and experience to screen talent. The vice president of C6 explained the importance of reviewing candidates based on the position's requisite abilities, the candidates' career history, and the company's corporate philosophy. Generally, in European countries including Turkey, talent[s] tend to apply for a position, not for a company. Therefore, even Japanese companies need to recruit talent through job posts. Our corporate value is something we cannot compromise on, and it's important to hire talent who can understand corporate value and to train managers who can be embodied our corporate value and practice it in the business situation. And train managers to be embodied our corporate value and practice it in the business situation. Who embody our corporate value and who can practice it in the business situations.

Table 3 Outline of the recruitment and selection practices among 10 Japanese MNC's Turkish subsidiaries

Company	Company's establishment year	Entry mode	Institutional effects	Selection criteria				Targeted talent	
				Position's requisite abilities	Career background	English competency	Corporate values	Selection from internal talent pool	Hiring externally through online
C1	1991	Greenfield	L	✓	✓		✓		✓
C2	1992	Joint venture	L	✓		✓	✓	✓	
C3	2001	Greenfield	L	✓				✓	
C4	2002	Greenfield	L	✓				✓	
C5	2003	Greenfield	L	✓	✓				✓
C6	2011	Merger & acquisition	L	✓		✓	✓		✓
C7	2012	Joint venture	L	✓		✓			✓
C8	2012	Merger & acquisition	L	✓		✓			✓
C9	2012	Joint Venture	L	✓		✓	✓		✓
C10	2013	Merger & acquisition	L	✓	✓	✓	✓		✓

5.2 Training and Development

Most Japanese companies provide training and development programs related to education and succession planning (career development) for local talent at RHQs and HQs along with programs at local operations, regardless of company age and entry mode. However, the regional effect on training and development programs depends on the HQ's global strategy, as described in the discussion section.

Table 4 outlines the training and development practices of the 10 Japanese companies in Turkey. The "R" in the institutional effect section of the table refers to Turkish subsidiaries that utilize training and development frameworks or programs developed or convened at their RHQs. Since most Turkish subsidiaries of Japanese MNCs are

Table 4 Outline of the training and development practices among 10 Japanese MNCs' Turkish subsidiaries

Company	Company's establishment year	Entry mode	Institutional effects	Training and development		
				Corporate values	Leadership and evaluation training for managers	Succession planning
C1	1991	Greenfield	L			
			R		✓	✓
			G	✓		✓
C2	1992	Joint venture	L			
			R	✓	✓	✓
C3	2001	Greenfield	Did not provide			
C4	2002	Greenfield	L		✓	
			G			✓
C5	2003	Greenfield	G			✓
C6	2011	Merger & acquisition	L	✓	✓	
			R			✓
			G	✓		✓
C7	2012	Joint venture	L	✓	✓	
C8	2012	Merger & acquisition	L	✓	✓	
			R			✓
C9	2012	Joint venture	R			✓
			G	✓		✓
C10	2013	Merger & acquisition	L			
			R	✓		✓

controlled and coordinated by RHQs in Europe, previous studies based on institutional theory have not focused on this regional effect. In terms of education, most companies provide training programs that focus on corporate values, leadership, and evaluation training for managers at RHQs and HQs. In particular, they emphasize leadership and evaluation training for managers because the programs reflect the local environment. As mentioned in research context section, Turkish managers tend toward favoritism, shape performance management systems based on their own values and assumptions (Keleş and Aycan 2011), and believe that leadership entails compelling their subordinates to follow directions. Of the 10 Japanese companies, 5 emphasize leadership and evaluation training for managers. The assistant to the president from C2 explained:

> I think Turkish talent[s] are hard work[ing] and thus we need to evaluate their performance appropriately [in order] to recognize and enhance their motivation for their work. Therefore, we emphasize evaluation training for our executives. The training program teaches them how to evaluate their subordinates' performance and the importance of [providing] feedback [based on] performance criteria to their subordinates.

The vice president of C6 also mentioned: We entered Turkey through M&A, and we followed the local GTM practices developed and used at the acquired company. Some of the current executives tend to evaluate their subordinates' performance in terms of their personal feelings instead of by [objective] performance criteria because they have carried over a traditional way of thinking from the previous company. Consequently, this leads to unequal salaries between talent[s] who are at the same position [level]. As a result, talent[s] who had expected our company to have a globalized management system because of its status as a Japanese MNC in the global market, left. Therefore, we emphasize hiring talent who have experience in other global companies and who understand how they should evaluate their subordinates in terms of performance criteria. I believe this will allow us to be a [leading] global company in Turkey in the near future.

At RHQs and HQs, workshops and programs on corporate value, leadership, and team management are provided to local talent from each region and worldwide. These workshops and training programs improve local talents' motivation and play an important role in retaining such local talent. The president of C1 explained:

> Our group has conducted talent development programs at the HQ once a year since 2011. Initial programs were for PCNs; however, the HQ expanded the program to HCNs and TCNs around the world from 2013. Talent in all operations spent time together and built awareness of our corporate values. I think [that] this opportunity motivates not only participants but also talent in each foreign subsidiary, particularly in Turkey.

Japanese MNCs consider that providing educational opportunities for career development at RHQs and/or HQs is an extremely valuable retention practice in Turkey, as these educational opportunities play an enabling role in building networks with top managers in different operations. Participants are also recognized as future top managers at Turkish subsidiaries (C1, C2, C5, C6, C8, and C9). The vice president of C6 mentioned:

> To motivate local talent, we select talent[s] who possess the ability to hold top management positions in this operation and send them to RHQs and HQs for succession planning. The meetings and training development programs are opportunities to make personal connections with other subsidiaries' top management and decision makers at RHQs and HQs and to be recognized by them as future top management in the Turkish subsidiary. It is normal for local talent to develop their career[s] by changing jobs. The average job tenure is around 3 years. In addition, competitors have headhunted talent from us. In this employment situation, we need to [provide] a clear career path to our talent [in order] to retain them and an opportunity to be recognized our talent by key decision makers at RHQs and HQs.

Educational opportunities at RHQs and HQs introduce future local leaders at Turkish subsidiaries to decision makers including senior executives and top management at the RHQ/HQ. Although previous studies showed that the candidate's cultural, institutional, and geographical distance from the decision makers at the HQ may influence talent pool inclusion (Mäkelä et al. 2010; Mellahi and Collings 2010), the issue of distance is addressed in this study by sampling companies with RHQs in Europe.

GTM in Turkish subsidiaries is summarized as follows: most Japanese companies hire local talent from the external labor market based on the abilities required for their positions and whether or not candidates are able to share the corporate philosophy. Thereafter, they provide training and development programs at RHQs and HQs to aid succession planning (career development) for talent as well as programs on sharing corporate philosophy, leadership and evaluation training for managers at local operations.

5.3 Talent Pool Inclusion and the Role of RHQs

The role of RHQs in talent identification was also uncovered through the 20 semi-structured interviews with the executives of seven Japanese HQs with operations in Turkey in parallel to the field work in Turkey (see Table 5).

Of the seven companies, four (C1, C6, C8, and C10) have RHQs, given their strategy of focusing on five or six regional centers worldwide. Among the four, one company's RHQ does not have any authority over personnel issues including talent identification and promotion, because the MNC chose to adopt a divisional organization. However, the RHQs develops training and development programs for local talent within Europe in the company. In addition, a regional subsidiary develops training programs and convenes seminars for local talent at RHQs and the subsidiary while RHQs passively assist. In these four companies, HQs use RHQs to improve control, coordinate operations in distant locations, and delegate functions including GTM. The interviews at Japanese HQs confirmed two corporate talent pool inclusion processes, termed two-stage and three-stage processes.

Figure 1 shows the two-stage and three-stage processes of talent pool inclusion at Japanese MNCs. The two-stage process is adopted by MNCs that do not have RHQs. In these companies, the subsidiary's top management first identifies talent

Table 5 Company profiles of HQs

Company	Company's establishment year	Business type	RHQs	Interviewees
C1	1945	Nonferrous metal	✓	1. Vice President, Human Resources Department
				2. Vice President, Human Resources Department
				3. General Manager, Sales & Administration HR Group
				4. General Manager Corporate Communications Group
				5. Operation Promotion Leader, Corporate Communications Group
				6. Staff, Corporate Communications Group
				7. Staff, Corporate Communications Group
C2	1948	Car & auto parts	✓	NA
C3	1946	Auto parts		1. Assistant Manager, Human Resource Division
				2. Project Assistant Manager, Human Resource Division
C4	1950	Auto parts		NA
C5	1954	Auto parts		1. Manager, General Affairs Department
				2. Staff, General Affairs Department
C6	1934	Machines	✓	1. Department Manager, Human Resource Division
C7	1964	Medicine		1. Manager, Human Resource Department
				2. Manager, Human Resource Department
C8	1936	Precision equipment	✓	1. Senior Manager, Corporate Human Resources
C9	1927	Chemical	✓	NA
C10	1935	Electrical equipment	✓	1. Director, Human Resources and Development Department
				2. Manager, Human Resources and Development Department
				3. General Manager, Human Resources and Labor Relations Department

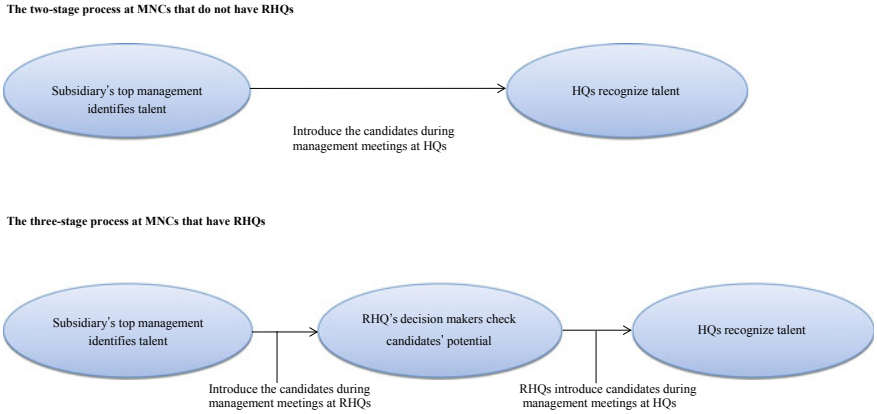

Fig. 1 The two-stages process and the three-stages process of talent pool inclusion at Japanese MNCs

based on the candidates' performance appraisal; Second, they introduce candidates to the HQs' decision makers during management meetings at HQs; Finally, HQs recognize the talent. However, HQs do not proactively train and develop candidates; they merely recognize talent candidates in Turkish subsidiaries. Therefore, the local subsidiary mainly develops local talent.

Meanwhile, the three-stage process is adopted by MNCs with RHQs. In these companies, the subsidiary's top management first identifies talent. Then, candidates are introduced to decision makers during management meetings at RHQs. These key decision makers at RHQs check the candidates' potential based on their performance appraisal and an assessment of their leadership qualities. In some companies, the vice presidents and presidents of HQs assess candidates during management meetings at RHQs and HQs. Next, RHQs introduce the candidates to decision makers of HQs, which then recruit talent into the corporate talent pool. Even though previous studies have pointed out the existence of the "silo mentality" at the regional level (e.g. Sparrow et al. 2011), the sample companies of this study offered their talent a career path from top management at the subsidiary to top management at RHQs and executives at HQs.

The vice president from C1 explained:

> We expand[ed] our business based on six regional centers worldwide. Therefore, each RHQ is responsible for developing talent[s] as future leaders in terms of succession planning. First, top management of each subsidiary screens candidates for future leaders based on the performance evaluations, then, RHQs review candidates and provide training and development programs for the candidates. We (HQ) bi[annually] provide a global leader development program, including corporate philosophy, leadership, and business skills over 3 years for talent[s] worldwide, who were chosen by each RHQ. In the programs, we emphasize our corporate value programs. The candidates included in the corporate talent pool are expected to be top management at subsidiaries within a specific region, or global leaders within a specific region or across regions.

The department manager from C6 mentioned: *Due to the provision of products that reflect the characteristics of the region, RHQs are empowered to make a decision on talent selection and career development. Presidents and executives at HQs attend management meetings at RHQs to review the talent[s] screened in each country. Recently hired mid-career talent[s] in each subsidiary within the region are summoned to the meetings to experience our corporate culture.* The senior manager from C8 stated:

> When we can show [a] combination of a clear career path and compensation to talent, talent [may be open to be] transferred to another operation within a specific region. Talent transfer within a specific region is usual in our company because of our five-region global business structure. Talent[s] are screened and assessed in each region.

Based on the above mentioned comments, RHQs play a role in identifying talent within the region and intermediating between regional subsidiaries and HQs to incorporate local talent into the talent pool at HQs.

6 Discussion

6.1 Theoretical Implications

This study explored how Japanese MNCs identify talent who are located in distant subsidiaries from HQs, and how Japanese HQs recognize and incorporate local talent in the HQ talent pool, specifically, by focusing on the intermediating role of RHQs in the talent identification process. Based on the interviews conducted, this study yielded three main findings regarding talent identification, difficulty of identifying local talent in geographically and culturally distant subsidiaries, and the intermediating role of RHQs between HQs and distant subsidiaries in the talent identification process.

Regarding GTM practices in Turkish subsidiaries, recruitment practices were developed in local operations and candidates were reviewed based on job requisite abilities and whether or not they were able to share the corporate philosophy in the targeted companies, in line with previous research (e.g. Stahl et al. 2007). Training and development practices were developed in local subsidiaries, regional operations, and HQs. The targeted companies planned to implement a five- or six-region global business structure as their global strategy, and HQs delegated their GTM functions, such as conceptualization and convening of training and development frameworks, programs, or workshops for local talent, to their RHQs in Europe. Most of the targeted companies emphasized the provision of training programs focused on corporate values, leadership, and team management for managers at RHQs and HQs. In particular, management meetings which were provided in terms of succession planning at RHQs functioned for local Turkish talent to have face-to-face interaction with talent within the region and worldwide and to build social bonds with key decision makers at RHQs and HQs. This finding shows the intermediating role of

RHQs between HQs and regional subsidiaries in GTM; this finding is consistent with previous research (e.g. Nell et al. 2011; Preece et al. 2013).

Second, in terms of the identification of local talent in distant subsidiaries, of the seven targeted Japanese MNCs, four (C1, C6, C8, and C10) used RHQs as a means of overcoming information asymmetry and social bonding issues between HQs and distant Turkish subsidiaries. RHQs play a pivotal role in identifying and incorporating local talent into the HQ talent pool. Two corporate talent pool inclusion processes were confirmed based on interviews with Japanese HQs, namely, two- and three-stage processes. Japanese MNCs that did not have RHQs adopted a two-stage process of talent identification in distant subsidiaries, regardless of entry mode and company age and those without did not proactively train and develop the candidates at HQs. As such, our findings show that Japanese MNCs with RHQs can successfully identify and incorporate local talent in distant subsidiaries in the talent pool at HQs. In particular, Japanese MNCs with RHQs motivate their local talent by providing opportunities for transfer to RHQs or HQs. This implies that the silo mentality highlighted by prior studies was not an issue in our target companies, because they proactively provide opportunities for local talent to develop their careers at RHQs in Europe, RHQs in other regions, and HQs. However, it is necessary to consider that the existence of RHQs may be influenced by company size, business size in Europe, and business strategies. Thus, identifying patterns in talent identification is one contribution of this study to existing research, which has overlooked the role of RHQs in GTM.

6.2 Practical Implications

The findings from the interviews with the seven Japanese HQs show that local talent in subsidiaries that are distant from HQs and identified through the three-stage process has the opportunity for face-to face interaction with talent from within the region and worldwide and decision makers at RHQs and HQs. I suggest that managers in companies without RHQs should proactively provide places to build social bonds between HQs and local subsidiaries to identify candidates, and incorporate such talent into the talent pool at HQs, which in turn would help to retain talent in their companies. Revealing the role of RHQs in GTM and talent identification is one of contributions in this study; however, it is necessary to consider the influencing factors, such as homophily and network positions of talent in MNCs, on decision making over talent identification and talent pool inclusion (e.g. Mäkelä et al. 2010). In addition, the findings from this study show that talent identified through the three-stage process has the opportunity of being transferred across regions. Like for the targeted companies explained above, MNCs should enhance training programs on corporate philosophy for their current and prospective talent who are the source of competitiveness for the MNCs.

To enhance the understanding of GTM in Japanese MNCs and to develop a conceptual model of the roles of RHQ in GTM, it would first be necessary to examine factors that influence talent identification processes and increase the data sample of Japanese

HQs, RHQs in Europe, and talent in regional subsidiaries. Second, it would be necessary to conduct further comparative research on GTM in HQs, RHQs in Europe and Asia, and local talent across Japanese, US, and European MNCs.

7 Conclusion

This study made several contributions to our understanding of GTM in Japanese MNCs in host countries that are distant from Japan. First, this study revealed that recruitment practices were developed in local operations and candidates were reviewed based on job requisite abilities and whether or not they could share the MNC's corporate philosophy. Training and development practices were developed in local, regional operations, and HQs and most of the target companies emphasized provision of training programs that focused on corporate values, leadership, and evaluation training for managers at RHQs and HQs. Second, RHQs intermediated the information gap between HQs and distant subsidiaries by convening training and development programs or workshops, and management meetings at RHQs or HQs, thereby facilitating social bonds between decision makers at RHQs and HQs and local talent in distant subsidiaries. Third, this study uncovered two corporate talent pool inclusion processes, namely, two- and three-stage processes. This study revealed that RHQs play a pivotal role in screening, identifying, and incorporating local talent into the HQ talent pool. Nonetheless, future research should increase the data sample used in the analysis as well as conduct further comparative research on GTM and career paths for local talent in Japanese HQs, RHQs, and local companies. The research could also be extended beyond Japanese MNCs to US, and European MNCs with subsidiaries in host countries that are distant from their respective HQs.

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Doing While Thinking in Dynamic Environment: A Brief Review of Strategic Improvisation

Siyuan Yu and Jin Yu

1 Introduction

Scholars in the last two decades have admitted the fact that when facing with unpredictable and fast-changing environment organizations tend to adopt improvising actions as valid response to unforeseen opportunities or disruptions (Crossan et al. 1996; Baker et al 2003; Best and Gooderham 2015). Some scholars also argue that organizations may not only improvise for tactical purposes to resolve unexpected problems, but also improvise strategically, i.e. strategic improvisation (SI) (Eisenhardt and Tabrizi 1995; Moorman and Miner 1998a; Baker et al. 2003). SI can be understood as the processes where planning and action is strategically exhibited at the emergent of behavior (Ibrahim et al. 2016; Mahmood and Bakar 2016). The main reason why this topic has gained an increased attention is partially because SI could be a legitimate means that bridge the time gap between traditional strategic planning and execution.

Traditional strategic planning model follows the design-precede-execution process (Baker et al. 2003) which describes decision-making activity as a liner process that includes making plans first and then carrying out the plans. Yet the design-precede-execution model fails to take the fact that the environment is uncertain, novel, and dynamic into account (Hmieleski and Corbett 2006). One critical challenge faced by the design-precede-execution model is that in such VUCA context, not only the feasibility of the established plan is reduced, but also the decision-makers need to adjust the strategic direction in a timely manner according to changes in the environment.

On the contrary, the SI behavior is based on the premise that decision-making behavior does not require careful prior planning. Facing the dilemma of resource shortage caused by "new entry defects", decision-makers have neither time to make

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plans nor sufficient customary models to learn from McKnight and Bontis (2002). They can only improvise under unplanned situations to deal with the unexpected situation and high time pressure. In fact, improvisation, as a mode of action frequently taken by decision-makers in response to uncertain environments, refutes the neoclassical rationalist view of rational decision-making. Moreover, SI provides a suitable theoretical perspective for explaining how decision-makers can complete the planning and execution of actions simultaneously to respond to continuous environmental changes in real time (Baker et al. 2003). Despite the fact that scholars have already acknowledge the existence and importance of SI, research on this topic is still just begun. Definition of the construct is not clear, and results of the impact of SI on firms are contradictory. As a result, a systematic review on SI is necessary.

This paper aims to sort out and analyze the existing theoretical literature on SI, summarize the progress and deficiencies of the existing research, propose a synthesized process model of SI, and make suggestions for future research directions in order to fill related research gaps. To be more specific, research questions addressed in this paper are first, what is SI and what characteristics does SI have. Second, what theories have been adopted to understand SI. Third, what factors contribute to SI activities and what are the organizational outcomes of SI. After answering above questions, a consolidating process model of SI is suggested.

The main contribution of this paper is three-fold. First, it offers a relatively new lenses to examine decision-making practice. As an important driving force for economic development, corporate activities urgently need a theoretical system that can guide them to make decisions in a rapidly changing business environment. As an important way for enterprises, especially setup firms, to make full use of the resources at hand to respond to emergencies and gain competitive advantages in a timely manner, it provides a suitable perspective for research and discussion on how enterprises can survive better. Second, this paper would deepen the understanding of the nature of SI. At present, the research on improvisation in the field of strategic management is still limited, and the research results are relatively scattered. This article systematically reviews and summarizes the existing research on SI, which gives this topic the rationality and prospect of research. It is helpful to promote its development in both management practice and academic research. Third, this paper extends the research scope of competitive strategy research by understanding SI as a learning process. This attempt could open the black box of gaining competitive advantages in VUCA environment.

2 Data Collection

In order to mapping the research scope, this paper offers a systematic and comprehensive account of papers published in peer-reviewed journals from EBSCO, Web of Knowledge,Wiley Online Library, Elsevier Science Direct, Springer LINK, Science Online, ESI and CNKI data base. First, we enter organizational improvisation as keywords in the titles or abstracts, and more than 200 papers come out. The

articles cover a number of research fields including Public Management, Business Management, Psychology, Computer Science, Education, Applied Economics, Library Management and Information Science, Sociology, Art, Management Science and Engineering and so on.

Then, we use strategic improvisation and entrepreneurial improvisation as key words to narrow down the range. After searching, we read the papers thoroughly, and screened the documents in accordance with the following principles: we make sure that strategy and improvisation (including improvisational behavior, spontaneity, and bricolage) show in the title, key words or the abstract at the same time; or entrepreneurial (including founding team) and improvisation show in the title, key words or the abstract at the same time. Finally, we got 40 papers.

3 The Origin of Strategic Improvisation

The word improvise comes from Latin meaning "make preparation for", and its derivative improvises, unforeseen (Hadida et al. 2015). Studies on improvisation at the individual level cover a wide range such as drama, musical, and so on.

In 1990s, scholars in organizational behavior field started to pay attention to the crucial role that improvisation plays at an organizational level. Improvisation can be understood as spontaneous actions guided by intuitions (Crossan and Sorrenti 1997). From this viewpoint, organizational improvisation is essentially an unconscious process of information processing in organization (Akgün et al. 2007), and it is an action of non-linear time planning (Crossan et al. 2005).

The turbulent changes in the business environment of the twenty-first century have prompted the focus on the role that improvisation plays at a strategic level (i.e. strategic improvisation) in companies when carefully prepared plans fail. This shift shows the transformation of strategic cognation of strategic management scholars. Strategy is the means and method by which companies can achieve a better business outcome. The environment in which the company is located determines the strategy that the company should adopt, so only the specific analysis of specific issues can find the best corporate strategy. Business environment, according to Reeves, Love & Tillmanns (2012) can be distinguished by predictability, malleability, and the harshness of environment. Put these variables into a matrix, companies could find several different ways to make strategies.

Traditional strategic planning is a linear process from analysis, plan, to execution. This type of strategy-making process can achieve a sustainable competitive advantage by focusing on "bigger" enterprises in a relatively stable, predictable but non-malleable market environment (Reeves, Love & Tillmanns, 2012).

However, along with the rapid changing technology development and globalization, the business environment in the late twentieth century taking a trend to unpredictable, non- malleable and dynamic to companies, which makes traditional

linear strategy making process less efficient. As a result, new concepts such as emergent strategy in late 1970s, time-based competition in 1980s, and transient competitive advantages in late 1990s become more and more practical. The introduction of new concepts shows that the current market is unpredictable and the industry is constantly changing. Therefore, companies do not have enough time and resources to rely on prediction to generate accurate and stable plans (Reeves, Haanaes & Sinha, 2016). In dynamic and complex environment, strategy is often a combination of pre-consideration planning and adaptation to real-world conditions (Mintzberg and McHugh 1985). Therefore, due to time pressure, strategies change from being bigger to being faster, and competitive advantages of companies start from small wins (Reeves, Haanaes & Sinha, 2016).

The above change could be deliberately planned or just played to the score. As a result, strategic management scholars come up with the concept of strategic improvisation by borrowing jazz metaphor from organizational improvisation. Weick (2001) suggests that improvisation is a kind of time-based strategy which needs the decision-makers to anticipate all possible situations that would happen. Others also point out that strategic planning and improvisation complement one another at the top management level (Moorman and Miner 1998b; Feldman and Pentland 2003; Pentland and Feldman 2005, 2008). In other words, there is no improvisation without any sense of planning, and no plans without any improvising either.

4 Mapping the Research Scope of Strategic Improvisation

4.1 Define Strategic Improvisation

Studies on the concept of strategic improvisation are based on the deepening understanding of improvisation at different levels in social study, organizational behavior and other fields. The table below presents some widely cited definitions of SI: (Table 1)

Improvisation is a fairly commonly used concept in daily discourse; therefore, some scholars just take the concept for granted. Hence the definition is not conclusive. Yet theoretic works suggest that SI has features including planning and executing under time press, spontaneity, creativity and bricolage.

For example, Perry (1991) and Eisenhardt (1997) both argue that improvising decisions are made under time pressure and demonstrate certain level of novelty even though they have completely different ideas about with SI is a top-down or bottom-up activity. Some works emphasize the spontaneous and creative aspects of SI when arguing SI as a critical response to unanticipated events (Arshad et al. 2015; Hu et al. 2018). Research on SI conducted in the context of new ventures tend to focus on how SI helps entrepreneurs to overcome resource shortage, i.e. the bricolage aspect of SI (Lin and Nabergoj 2014; Ahmad et al. 2015; Adomako et al. 2018).

Table 1 Definitions of strategic improvisation

Definition	Source	Dimensions				Sample papers
		Convergence in time	Spontaneity	Creativity	Bricolage	
The degree to which composition and execution converge in time	Moorman and Miner (1998a)	√	√	√		Baker and Aldrich (2000); Hmieleski and Corbett 2003; Baker et al. (2003); Gong et al. 2005; DeHaan and Cohen 2007; Evers and O'Gorman 2011; Lin and Nabergoj 2014; Best and Gooderham (2015)
Deliberate and substantive fusion of the design and execution of a novel production	Miner, Bassof & Moorman (2001)	√	√	√		Baker and Aldrich (2000); Hmieleski and Corbett 2003; Baker et al. 2003; Gong et al. 2005; DeHaan and Cohen (2007); Evers and O'Gorman (2011); Lin and Nabergoj (2014); Best and Gooderham (2015)
Spontaneously recombining knowledge, processes and structure in real time	McKnight and Bontis (2002)		√	√		Baker et al. (2015a); (2015b)
The creative and spontaneous process of trying to achieve an object in a new way	Vera and Crossan (2005)		√	√		McMullan and Kenworthy 2015; Arshad et al. (2015) Ibrahim et al. (2018)
Unhindered action as it unfolds, by an organization or its members, often in response to an unexpected interruption or change of activity	Hadida et al. (2015)		√	√	√	Adomako et al. (2018); Falkheimer and Sandberg (2018); YU et al. (2018)

Another point worth noticing is that despite the extemporaneous nature of SI scholars argue that SI is going blind without any rules or plans. SI is a real-time strategy that is small and with minimal structure (Weick 2001; Hadida et al. 2015). For example, Falkheimer and Sandberg (2018) suggest that SI is the combined result of a clear framework, a professional interpretation and a situated adaption based on given possibilities. In other words, SI is not going outside the box without rules, rather it is use whatever box at hand.

Based on previous works, we would argue that SI is understood as a real-time strategic learning process that adopted by decision-making team spontaneously and creativity as responses to unexpected events using resources at hand under time pressure. SI is operationalized as the decision-makers' ability to respond to unanticipated situations intelligently and effectively to solve problems or make use of opportunities (Ibrahim et al. 2018). It involves making creative decisions and actions outside the formal organization structure (Vera and Crossan 2005). SI is seen as a behavioral strategy used by leaders to respond to uncertainty, time pressure and resources insufficiency (Hu et al. 2018).

4.2 Qualitative Research on Describing the Phenomenon

Early qualitative research on this agenda are mainly case studies which include topics such as identifying the existence of strategic improvisation, and how entrepreneurs and funding teams improvise strategically to help new ventures to get through resource shortage.

For example, Baker et al. (2003) argues that strategic improvisation exists in young firms, and tactical improvisation would rise to the strategic level. The research demonstrates not only may founding itself be improvisational in some cases, but improvisational processes and issues permeate entrepreneurial activity and have non-obvious implications for emergent firm strategies and competencies. Similarly, Best and Gooderham (2015) also perceive improvisation as a legitimate alternative to strategic planning and a wide-spread activity that is much more complex than the accepted definition implies.

Some scholars who take a resource viewpoint suggest that unlike big firms new ventures tend to adopt strategic improvisation to deal with crisis by using what is at hand (Baker and Aldrich 2000; Smith and Blundel 2014).

Unlike research conducted in the context of new ventures Yu et al. (2018) uses data from two well-established companies. The paper argues that strategic improvisation adopted by companies could become organizational memory which is useful for decision-making, and further brings companies competitive advantages.

As argued before, improvisation may not always lead to good outcome (Moorman and Miler 1998a), some scholars also show that strategic improvisation may lead to chaos as well. For example, Flach (2014) points out that improvisation should not be a substitute for a plan or be a guideline, as it may also lead to chaos as well as to a lack of structure and control. Scholars should not neglect the importance of

improvisation for organizations, as well as its close connections and interfaces with the learning process.

To sum up, qualitative research on strategic improvisation show efforts to emphasize the occurrence and legitimacy of strategic improvisation. Research is mainly conducted in the context of new ventures arguing that when facing unanticipated events tactical improvisation adopted by entrepreneurs could affect young firms at a strategic level.

4.3 Quantitative Research on Mechanism

Most quantitative work focuses on the outcomes of strategic improvisation, what factors could influence improvising actions and how.

Some scholars explore the relation and mechanism between strategic improvisation and firm's performance, yet the results are not consistent. Baker et al. (2015a, b) using data collected from small and medium enterprises argue that for most SMEs adopting strategic improvisation is necessary, and it has positive relationship with firm's performance. Similarly, Mahmood and Baker (2016) argues that strategic improvisation has strong positive relationship with SME's performance, and this relationship is positively moderated by entrepreneurial self-efficacy. Adomako et al. (2018) also suggests a significant positive moderating effect of financial resource capability on the relationship between entrepreneurs' improvisational and new venture performance. In addition, the findings show that the effectiveness of improvisation behavior in driving a firm's success depends on the level of institutional support.

Yet some works suggest that cultivating improvisational ability may has negative influence on firm's ability of linear planning therefore may not bring competitive advantage (Baker et al. 2003).

Another interesting point is that unlike most of the works using samples from companies, there are some research conducted in the context of non-profit institutes like higher education institutions (HEIs) which also present inspiring findings. Ibrahim et al. (2016), for instance, using data from HEIs in Najafi showed that both leaders' strategic improvisation and entrepreneurial self-efficacy were significantly related to corporate entrepreneurship in HEIs. Ibrahim et al. (2018) using data from HEIs in Nigeria to argue that both strategic improvisation and organizational culture dimensions have direct relationship with HEIs performance. But only innovative culture moderates the relationship between strategic improvisation and HEIs, while bureaucratic culture and supportive culture do not.

Other scholars focus on the antecedents of strategic improvisation. Hodgkinson et al. (2016), for instance, reveals that organizational risk-taking and managerial expertise are common antecedents of improvisation, but additional relation-ships arise under high (flexibility) and low turbulence (learning, manager tenure). Hu et al. (2018) further indicates that promotion focus (but not prevention focus) is significantly related to entrepreneur improvisation. Furthermore, environmental turbulence

significantly moderates the relationship between prevention focus and entrepreneur improvisation.

4.4 Theoretical Lenses Adopted

Early research understands strategic improvisation as an alternative way to form strategy. Along with the development of research, scholars tend to approach the concept using various theoretical lenses.

First, taking a resource view, strategic improvisation can be understood as a kind of resource within an organization. For example, Mahmood and Baker (2016) suggests that this resource has positive relationship with firm's performance when moderated by entrepreneurs' self-efficacy.

Second, from a dynamic capability point, some scholars argue that leaders' improvisational capability has positive effect on young firms' performance (Ibrahim et al. 2016). Yet others like Baker et al. (2003) claims that improvisational capability may diminish the traditional planning skills of firms. Others perceive strategic improvisation from a learning lens. For example, Arshad et al. (2015) reveals that when understanding strategic improvisation as a way of organizational learning, it has positive relationship with firms' performance under time pressure.

Third, adopting a contingency view, some researchers understand strategic improvisation as a leader's characteristics which affects firms' performance, and also the antecedents. For instance, Hodgkinson et al. (2015) finds that manager expertise is a common causing of leaders' improvisation using data from Malaysia. Some also find that talent management and entrepreneurial orientation has direct positive relationship with the incidence of strategic improvisation (Arshad et al. 2015; Ahmad et al. 2015).

Forth, recently some works use a knowledge-based viewpoint to unpack SI as an organizational learning process. Recent work points out that it might be better for mangers to treat improvisational learning actions as an "infra-ordinary endeavors" which could take place by organizational members collaboratively in a natural and undramatic way (Cunha and Clegg 2019).To take one step further, SI, defined as novel actions that adopted by decision-making team spontaneously as responses to unexpected events using resources at hand under time pressure(Chelariu et al. 2002; Bergh and Lim 2008), could be an alternative way of strategic learning process. However, as argued, improvisation is a form of real-time learning adopted by organizations facing unexpected events which can change organization knowledge in helpful or harmful ways (Miner, Bassof & Moorman, 2001; Kyriakopoulos 2015).

5 A Synthesized Process Model of SI

Based on literature review, it is clear that the existence and importance of SI is well presented. However, the lack of deep understanding of the nature and characteristics of SI has led to stagnation in research. Besides, in order to guide firms to gain competitive advantage from SI it is crucial to identify and discuss the law of SI. By doing so, firms could improve the effectiveness of SI, and maximize the value of SI in different circumstances. Therefore, to find out what factors can better predict or promote the emergence of SI and what variables are mediated the relationship between SI and competitive advantage is necessary. This paper would suggests two types of SI; and since it is argued that improvisation is a form of real-time learning adopted by organizations facing unexpected events which can change organization knowledge in helpful or harmful ways (Miner, Bassof & Moorman, 2001; Kyriakopoulos 2015), this paper will propose a synthesized process model to present SI from an organizational learning perspective.

5.1 Two Types of SI

At present, there is almost no improvisation literature focusing on the possible classification of SI, which may be related to the lack of accurate and sound conceptual definitions. Future research should start from this shortcoming and dig deeper into the content and characteristics of the behavior in order to identify different types of SI.

Based on the turbulence and unpredictability of the environment, companies often need to excel in both exploitation and exploration to gain a competitive advantage (He and Wong 2004). Focusing only on exploration and neglecting exploitation will result in enterprises bearing the costs and risks of too much exploration and experimentation, leaving too many new ideas to be developed, and making concrete competitiveness too lacking. Conversely, an over-emphasis on exploitation and neglecting the important role of exploration will lead to self-sufficient enterprises, which is not conducive to enterprise productivity and effectiveness. It can be seen that in a highly uncertain environment, companies must strike a balance between exploration and development (March 1991). SI is a combination of searching for new resources and utilizing previous resources, and has both explorative and exploitative characteristics. Also, an important trigger of SI is unexpected events. These events could be problematic or favorable to enterprises.

Therefore, SI can be divided into two types (seen Table 2), namely defensive SI and offensive SI, based on the nature of triggering unexpected events and the way the organization handles them. On one hand, when an unexpected event has a negative impact on organizations, organizations tend to adopt defensive SI. In situations like that, organizations need to solve problems under time press, so they need to make

Table 2 Two types of SI

Types of SI characteristics	Defensive SI	Offensive SI
Level of exploration	low	high
Level of exploitation	high	low

full use of what they have. In other words, they need to enhance the depth of enterprise's resources and effectively improve the effectiveness of solutions; therefore, defensive SI holds high level of exploitation rather than exploration. Conversely, if an organization treats an unexpected event as an unplanned opportunity and actively seizes the opportunity to improvise, then the organization adopts offensive SI. When employing offensive SI, organizations need to expand the breadth of resources available, and make creative solutions more flexible; therefore, offensive SI holds high level of exploration than exploitation.

5.2 A Process Model of SI

Adopting a knowledge-based view, SI, as argued before, could be seen as an alternative real-time learning process that can deal with unanticipated information and bring competitive advantages to organizations. By synthesizing literature, a three-phase process model of SI is proposed below (See Fig. 1).

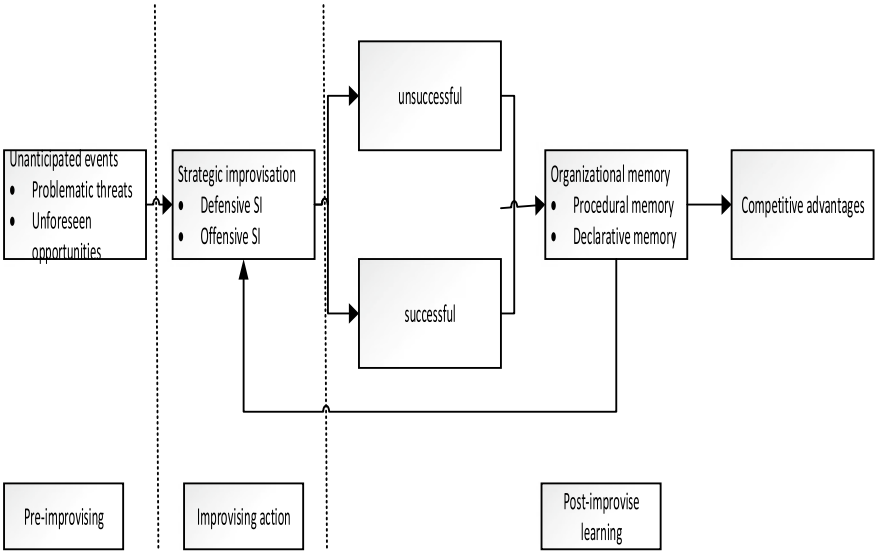

Fig. 1 A process model of SI

Pre-improvising. The first phase is pre-improvising, i.e. the causes of improvising actions. Unanticipated events are inevitable in turbulent environment no matter how careful plans are. Previous studies show that unanticipated events have strong impact on small businesses (Wynarczyk et al. 1993), and even affect setup firms' survival in more critical way (Cope and Watts 2000; Best and Gooderham 2015). The unanticipated events could cover a wide range of factors, some of them can be problematic such as sudden change of government policy, or disappearance of key suppliers. Others, on the other hand, may be quite an opportunity.

One way or the other, the unanticipated events often contribute to the ambiguity faced by firms. This ambiguity causes many firms to struggle to make sense of what they are facing (Weick 1993). Besides, in dynamic environment, firms often need to deal with unanticipated events under time press with limited resources. They may not be able to plan ahead, or carry out solutions as planned. Therefore, they need to employ improvisational actions.

Improvising actions. It is established that a key response to instability is to improvise (Crossan et al. 1999; Moorman and Miner 1998a). SI is a legitimate strategic response to unanticipated events. As presented before, one characteristic of SI is a certain level of novelty. This implies that SI could trigger changes in organizations in terms of behaviors or collective cogitation. Miner (2001) suggests that outcomes of improvisations includes new behavioral productions, artificial productions and interpretive productions. Similarly, outcomes of organizational learning contain changes of routines and behavioral pattens, or changes of collective mental models. Therefore, SI is a real-time learning process.

From this viewpoint, SI learning process has several features. First, SI is a collective learning process that has strategic influence. Organizational learning is not the sum of individual learning, nor is SI. SI learning is developed by the managers of an organization as they perform tasks together. Second, the intention of SI refers to the urgency of time and the uncertainty of the environment when members of the organization are performing tasks. They feel that the original plans or practices may cause problems, may not be able to respond or may lose fleeting opportunities, and try a new way to achieve the original purpose. Such a change is a necessary change to perform a task, not to learn for learning. If the consequences of learning are not the original purpose, it is an additional product to achieve the original purpose (Miner et al. 2001). Third, SI is learning by doing. Cunha et al. (1999) argue that organizational improvisation is the use of existing resources to take action from action. SI is learning from practice and thinking from action. Since it doesn't have to be cognitively guided behavior, it is often action-driven cognition. Forth, SI is a highly situated learning. SI learning is a change carried out by specific individuals to deal with certain events in situated context. Therefore, the learning is the product of being attached to that situation, and its learning is difficult to replicate in other situations.

Post-improvisation learning. From a knowledge-based perspective. Post-improvisation learning is the phase where firms generate and use new knowledge. Post-improvisation learning is a process that institutionalize SI outcomes into organizational memories.

Organizations adopt SI to deal with unanticipated events, yet SI does not always guarantee successful results. For example, Arshad et al. (2015) and Ibrahim et al. (2016) suggest that SI has positive effect on R&D performance. Yet, Baker et al. (2003) argues that adopting SI could weaken organization's ability to execute. What worth noticing is that whether the outcomes of SI is beneficial to organizations or not, the experience of SI could become a source of organizational memory.

Walsh and Ungson (1991) suggest that organizational memory is storage of historical information which can be used to guide organizations to make decisions. Based on their work, organizational memory is consisted of organizations believes, knowledge, values, and stories about organizations. It could be formal or informal routines and characteristics of objects in organizations. Besides, organizational memory can be knowledge assets of organizations in any form. Earlier works also classifies organizational memory into procedural memory and declarative memory. Procedural memory is about how to do things which usually includes skills and routines organizations. Declarative memory is highly specific that facilities applying knowledge in similar contexts, understanding novel environment and predicting outcomes.

Crossan et al. (2005) points out that SI could transform into procedural memory through a lot of practices. Members of the organization can effectively improve the ability to organize improvisations and avoid errors in simulation, and translate this ability into organizational procedural memory. YU et al. (2018) suggest that new behavioral productions and artificial productions come from SI tend to develop into declarative memory, and new interpretation productions tend to develop into procedural memory.

Therefore, after adopting SI, organizations preserve the outcomes and transfer them into organizational memory by institutionalizing outcomes. Then organizational memory comes from SI may help firms to reduce transaction cost, developing organizational culture (YU et al. 2018), and even change cooperation strategies to help firms to gain competitive advantages (Best & Gooderham 2015).

6 Conclusion

Improvisation behavior has gradually attracted the attention of scholars in the field of strategic management, because it provides the possibility for enterprises to overcome resource deficiencies and effectively cope with the changing environment. Uncertainty in the market environment makes many business plans "useless", while improvisation allows decision makers or entrepreneurial teams to flexibly deal with unexpected situations in the environment and obtain unexpected results (Mintzberg 1990). Although the last decade has witnessed an increasing body of works done on improvisational activities adopted by enterprises, the results are inconsistent. Besides, lacking of systematic review of SI could impede the development of the research field.

With the attempt to extent the field of SI research, this paper offers a systematic review by presenting the origin of the study, summarizing the antecedents and organizational outcomes of SI and theoretical lenses adopted to examine the subject, and proposing a synthesized processing model of SI from a learning perspective.

In order to further promote the development of research in this field, this article provides the following two future research directions. First, more empirical works needs to be done to test the mechanism between SI and competitive advantages. Second, SI adopted by organizations is a complex phenomenon for more than one factors could become its antecedents and the relationship between it and firm's outcome may be moderated by more than one variable; therefore, more integrated research method like QCA could be a better solution to complex causality.

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Research on Multi-interest Conflict Risk Assessment of Super-Giant Project Based on PSR Model

Huang Dechun, Zhang Rui, and He Zhengqi

1 Introduction

Super-giant projects refer to major engineering projects that have significant and far-reaching impacts on regions and countries. Compared with general major projects, they are larger in scale, involve more factors, and are more complex in engineering construction. In recent years, the construction of China's super-giant projects has greatly contributed to the promotion of China's social and economic development. For example, the Beijing-Shanghai High Speed Railway with an investment quota of more than 220 billion yuan has greatly promoted the economic development of the areas along the line. The South-North Water Transfer Project directly benefits more than 100 million people. Super-giant projects contain a series of complex activities, and it's success closely related to stakeholders. The super-giant projects includes not only the internal multi-stakeholders such as the government, project legal persons and contractors, but also the external multi-stakeholders such as immigrants, relocation households of land expropriation, project beneficiary groups and public interest followers. Based on different backgrounds, these multi-stakeholders have different points and have multiple interests demand. They often cause conflict because of inconsistent interests. Multi-interest conflict will cause project risks, which will lead to problems such as declining quality of project, rising costs, delays the construction schedules and even lead to social conflict. For example, on December 17, 2017, the water project in Sichuan Province failed to reach an agreement on compensation,

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causing the project to temporarily suspend work, and broke out of mass incidents, disrupting social order and causing social instability. In January 2019, General Secretary Xi Jinping proposed to establish a risk judgment mechanism and decision risk assessment mechanism to prevent major risk. Therefore, it is of great significance to effectively identify and judge the risk of multiple conflict of super-giant projects, and then conduct risk assessment research to prevent and resolve major risk associated with super-giant projects.

2 Literature Review

Conflict is a common phenomenon in human society. It has always been the research object of political science, sociology, psychology and economics. That is, "the behavioral stakeholders shows different interaction processes in terms of interests, opinions and preferences" (Kimbrough and Sheremeta 2019; Davis 2013). In recent years, the scale of engineering projects has been continuously expanded and stakeholders have gradually diversified. The three internal stakeholders of the government, project contractors and contractors have expanded to public interest followers such as immigrants, land requisitioners, project beneficiaries, media, scholars and external stakeholders. Project stakeholders represent different interest groups, have different interests. Thus they have differences in personality and values (Zhu et al. 2016; Lenzer J. Combined with poor communication and other issues, so making the multi-interest conflict become more prominent, especially the conflict between the different stakeholders (Zhang et al. 2017).

In recent years, the multi-interests conflict have become more and more serious, and the factors that cause conflict of interest are multi-faceted. Among the many influencing factors, the cognitive differences are the primary factors leading to conflict. In the process of cooperation, due to different factors such as education level and living environment, the multi-stakeholders will have cognitive differences and conflict (Leung et al. 2013). Secondly, economic factors. The most direct demand for stakeholders to participate in the project is economic demand. In the case of a certain amount of economic benefits, each stakeholder wants to maximize his own interests, then there will be conflict (Li et al. 2012; Sun and Sun 2016).Once again, it is an organizational factor, mainly including the soundness of government agencies (Hu and Zhang 2018; Helms and Oliver 2015). Finally, the contract factor. The project contract is the binding force to ensure the implementation of the project, once the contract formulation requirements are unreasonable, it will easily lead to conflict risk (Suprapto et al. 2016).

Multi-interest conflict in super-giant projects have potential risk to endanger social stability and social order. Strengthening the risk management of super-giant projects and doing a good job in social risk assessment of super-giant projects is a prerequisite for preventing social risks. At present, the problems in China's risk assessment

are mainly manifested as the lack of effective risk management in the early stage of the project, the lack of effective methods for risk prediction and assessment, and the lack of a systematic management system for social risks caused by multi-interest conflict (Yong 2017). Traditional risk assessment methods such as event number analysis method, Delphi method and fuzzy analysis method have been widely used, but they have certain limitations in the face of complex and diverse engineering investment project risk. Many scholars began to improve the traditional risk assessment model, and proposed the "MACTOR" method (Boumaour et al. 2018), multi-attribute decision-making (MADM) method (Wu et al. 2018), improved RFEM method (Li et al. 2016), hierarchical Bayesian network (Ping et al. 2018) and so on. Traditional risk assessment models tend to evaluate the risk types of "one-to-many" forms, but there are many stakeholders in super-giant project and the relationships between different stakeholders are complex. They belong to the risk types of "many-to-many" forms, which may not be accurately assessed risk if using the traditional model. The PSR model was originally proposed by Tony Friend, which was originally a kind of evaluation model commonly used in the sub-discipline of ecosystem health evaluation in the discipline of environmental quality evaluation, and then applied gradually to engineering field. On the basis of reading a lot of literature, this paper combines the basic framework of PSR model (pressure-state-response) with the characteristics of the super-giant project itself, establishing the framework and index of multi-conflict conflict risk assessment of super-giant project. It can consider the complex relationship between stakeholderss to assess risk. Xiong Hongbin used the PSR model to analyze the complex relationship and conducted a risk assessment study on the project of Chaohu Lake (Xiong and Zhou 2018). DENG Bo used the SPR (PSR) model to identify the key risk factors of the S315 road reconstruction project and to target risk management to improve the efficiency of risk management.

In summary, the analysis shows that the previous research mainly focused on analyzing the causes of multi-stakeholder conflict in engineering projects and constructing corresponding prevention mechanisms, but there are not many researches on the dynamic cross-conflict assessment between multi-stakeholders and multi-interest appeals. Therefore, from the perspective of multi-interest conflict, this paper introduces PSR model that can assess the risk between multi-interest stakeholders and multi-interest appeals, and access the risk of multiple conflict super-giant projects. Besides, the PSR model can evaluate not only the risk of "many to many" type, but also the risk of "one-to-many" type, which has the basic characteristics of the traditional risk assessment model, so it can also be applied to general-scale project in addition to super-giant project.

3 Construction of PSR Model for Risk Assessment of Multi-interest Conflict in Super-Giant Projects

3.1 Multi-interest Conflict Risk of Super-Giant Projects

The risk of multi-interest conflict of super-giant projects has two levels of meaning. First, the risk of conflict between multiple stakeholders, including not only the conflict risk of the project management internal system such as the government, project legal persons, contractors, but also the immigrants, land requisitioners, project beneficiaries, scholars, social organizations and the public. The second is the risk of conflict between multiple interests. Take the case of engineering immigration as an example, there are multiple interests appeals, such as economic appeals, social security appeals and political appeals. If it is not handled properly, it will lead to a mass incident similar to the Nantong project. Multi-interest conflict is a multi-interest appeal conflict between multiple stakeholders. Multi-interest conflict risk involves multiple stakeholders, which is characterized by diversity, cross-cutting, dynamic and harmful.

At present, most studies divide the risk of multi-interest conflict of engineering projects into economic, social, and environmental aspects, and pay attention to unilateral conflict risks while ignoring the conflict relationship between the whole. Therefore, previous research methods have limitations on the study of this multi-conflict risk. The PSR model includes three types of indicators for analyzing the relationship between stress, status and response, and is a relatively mature evaluation index system. In the PSR model analysis framework, various types of conflict between stakeholders will have a negative pressure on the overall project status. Government departments, social organizations etc. will take corresponding measures after feeling the pressure, and respond to the project through the response channel to produces a positive effect, thereby reducing stress the risk of multi-interest conflict. The whole system has the characteristics of dynamic conduction mechanism, which can dynamically reflect the interaction between evaluation indicators, as shown in Fig. 1.

3.2 Index System Construction

Multi-interest conflict is the root cause of social stability risk of super-giant projects. The risk of multi-interest conflict includes both multi-interest stakeholders conflict risk and multi-interest appeal conflict risk. According to the scientific and operability principles of the selection of indicators and combined with expert experience, the risk assessment indicators for multi-interest conflict of super-giant projects are screened and determined. Based on the above considerations, the principles for selecting indicators in this paper are as follows:

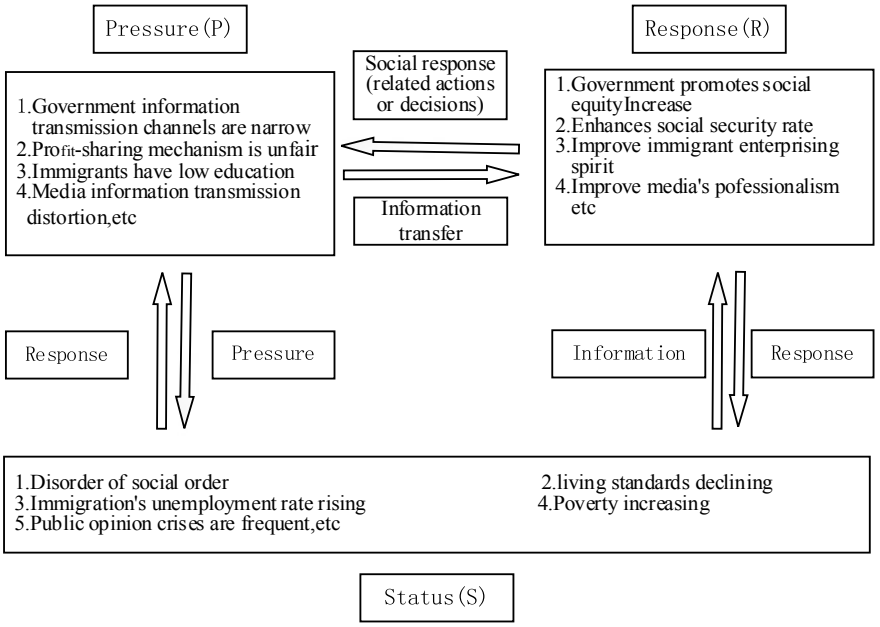

Fig. 1 Risk of multi-interest conflict in super-giant projects based on PSR model

(1) The principle of multi-stakeholders
This paper takes the main stakeholders of the South-to-North Water Transfer Project as the research object. The main stakeholders is the government, selecting relevant indicators such as government information transmission channels, government officials' quality and profit-sharing mechanism. Next stakeholders is immigrants, selecting relevant indicators such as immigrants' education level, unemployment rate, and enterprising spirit. Then is the project legal person, screening project legal person social responsibility, business ability and other indicators; finally is the media, screening and determining the indicators such as media malicious competition, the number of public opinion crisis and professional literacy.

(2) The principle of multiple interest appeals
The factors that cause interest conflict are multi-faceted. The first is the cultural background appeal conflict, that is, the cognitive differences referred to in the previous article, we select indexs of immigrants' education level and the enterprising spirit; the second is the economic appeal conflict, taking the economic demands of different stakeholders into account, then screening the profit-sharing mechanism, immigrant unemployment rate, living standard and other indicators to measure economic appeal conflict; once again, political appeal conflict, that is, the organizational factors mentioned above, mainly reflected through government information transmission channels, public satisfaction with the government, and government's actual control rights to project; the last is the conflict of

social appeals, which is reflected by indicators such as social order, social equity, and social security rate. Because the multi-interest conflict between the various entities cross each other, some indicators will be repeated in different stakeholders. The risk assessment indicators for multi-interest conflict are shown in Table 1.

After screening and determining the above indicators, combined with the characteristics of the PSR model, the indicators are classified as follows: ① Stress indicators, answering why these conflict occur. ② Status indicators, explain what kind of conflict risk is generated. ③ Response indicators, answering questions about how to deal with conflict. In this paper, the indicator system is divided into the target layer (A), the criterion layer (P, S, R) and the corresponding indicator layer as shown in Table 2. The index layer has a total of 20 indicators, which are recorded as P1–R20, respectively, where " + , − " represents the indicator attribute.

Since some qualitative indicator data cannot be directly obtained, this paper follows the scientific and operability principles of indicator calculation and selects alternative indicators for measurement. For example, the indicators of social order can be reflected by the number of public security criminal cases in the area. The fewer criminal cases, the better the social order; the living standard of immigrants can be measured by the Engel coefficient, and the Engel coefficient represents the total proportion of food expenditure to the total proportion of personal consumption expenditure. The Engel coefficient is high, indicating that the living standard of immigrants is low; social equity can be reflected by the Gini coefficient. The higher the Gini coefficient, the more unfair the society is. The public opinion crisis is expressed by the heat equation of the conflict event, that is, the degree of concern of the public opinion event. The numerical range is from 0 to 100.The more the conflict are concerned by public opinion, and the crisis is even greater.

3.3 Select Evaluation Method and Determine Weights

Due to the large number of qualitative indicators for measuring the risk of multi-interest conflict of super-giant projects, only use the method of expert scoring will affect the objectivity of the results. The principle of the entropy method is to correct the weight of the original index according to the entropy weight obtained after the calculation, and finally determine the new weight. This method effectively avoids the influence of human factors and makes the evaluation results more objective. Therefore, this paper uses the expert scoring method (five points system) and the entropy method to determine the index weights. The detailed steps of determining the weights by the entropy method are described in the literature (Zhang et al. 2019).

Table 1 Risk assessment indicators for multi-interest conflict in super-giant projects

Stakeholder	Conflict types	Evaluation index
Government-immigration	Cultural background conflict	Education level, enterprising spirit
	Economic conflict	Profit-sharing mechanism, immigrant unemployment rate, immigrant living standard, per capita income of immigrant
	Political conflict	Government information transmission channels, the quality of government officials, public satisfaction with the government
	Social conflict	Social order, social equity, social security rate
Government-media	Cultural background conflict	Professional literacy
	Economic conflict	Media malicious competition
	Political conflict	Media information delivery authenticity
	Social conflict	Frequency of public opinion crisis
Government-project legal person	Cultural background conflict	Project legal person's social responsibility
	Economic conflict	Profit-sharing mechanism, project legal person's management ability
	Political conflict	Government's actual control to the project
	Social conflict	Social order
Immigration-project legal person	Cultural background conflict	Education level, enterprising spirit
	Economic conflict	Profit-sharing mechanism, immigrant unemployment rate, immigrant living standard, per capita income of immigrant
	Political conflict	Project legal person's quality
	Social conflict	Social order, social equity
Media-project legal person	Cultural background conflict	Professional literacy
	Economic conflict	Media malicious competition
	Political conflict	Frequency of public opinion crisis
	Social conflict	Media information delivery authenticity

Table 2 Multi-interest conflict risk assessment indicators for super-giant projects based on PSR model

Target layer	Criteria layer	Indicator layer	Indicator attribute	Indicator interpretation
The risk of multi-interest conflict of super-giant project A	Pressure (P)	Government information transmission channels P1	–	1 very narrow; 2 relatively narrow; 3 medium; 4 unobstructed; 5 very smooth
		The quality of government officials P2	–	1 very low; 2 lower; 3 medium; 4 high; 5 very high
		Profit-sharing mechanism P3	–	1 very unfair; 2 less unfair; 3 medium; 4 fair; 5 very fair
		Education level P4	–	high school education and above/total number of immigrants
		Media information delivery authenticity P5	–	1 very distortion; 2 less distortion; 3 medium; 4 real; 5 very real
		Project legal person's social responsibility P6	–	1 very weak; 2 less weak; 3 medium; 4 strong; 5 very strong
		Project legal person's management ability P7	–	1 very weak; 2 less weak; 3 medium; 4 strong; 5 very strong
		Project legal person's quality P8	–	1 very low; 2 lower; 3 medium; 4 high; 5 very high
		Government's actual control to the project P9	+	1 very weak; 2 less weak; 3 medium; 4 strong; 5 very strong

(continued)

Table 2 (continued)

Target layer	Criteria layer	Indicator layer	Indicator attribute	Indicator interpretation
	Status (S)	Social order S10	–	Public security criminal case number/ten thousand people
		Public satisfaction with the government S11	–	Public satisfaction index on government security
		Immigrant unemployment rate S12	+	\
		Immigrant living standard S13	–	Engel coefficient
		Per capita income of immigrant S14	–	\
		Media malicious competition S15	+	1 not at all; 2 not serious;3 medium;4 serious;5 very serious
		Public opinion crisisS16	+	Heat = 0.4 * News Index + 0.6 (Forum Index + Blog Index + Weibo Index)
	Response (R)	Social equity R17	–	Gini Coefficient
		Social security rate R18	–	\
		Enterprising spirit R19	–	1 totally rely on government; 2 partly rely on government; 3 medium; 4 less rely on government; 5 does not rely on government
		Professional literacy R20	–	1 very low; 2 lower; 3 medium; 4 high; 5 very high

Table 3 Grading standards of multi-interest conflict risk

Composite index	(0.8, 1]	(0.6, 0.8]	(0.4, 0.6]	(0.2, 0.4]	[0, 0.2)
Level	Higher risk	High risk	Medium	Low risk	Lower risk

After the data is standardized, the weight of the indicator is calculated as follows:

$$Wj = \frac{1 - Ej}{\sum_{j=1}^{n} (1 - Ej)} \tag{1}$$

E_j is the entropy of the evaluation index and W_j is the weight of each index. From the above formula, the weight of the pressure layer, the status layer and the response layer can be obtained and the comprehensive index is determined. The weights of each criterion layer are as follows:

$$Wt = \sum_{j=1}^{n} Wj \times Pij \tag{2}$$

Where t represents the pressure layer (P), the status layer (S), the response layer (R) and the comprehensive index (Q). Q represents the comprehensive index of multi-interest conflict risk. The greater the conflict, the greater the risk. Based on the results (Zhao et al. 2017), this paper divides the risk of multi-interest conflict into the following five levels (Table 3).

4 Empirical Analysis

4.1 Overview of the Study Area

This paper takes Xichuan County, Nanyang City, Henan Province as an example to study the risk of multi-interest conflict in the process of immigration of super-giant projects in the South-to-North Water Transfer Project. Xichuan County has a superior geographical position and it is at the junction of Henan Province, Hubei Province and Shanxi Province. It is the core water source area and the canal head of the South-North Water Transfer Project. It is also one of the China's immigrant counties. The county has a vast area of cultivated land and has jurisdiction over 17 townships and 499 villages (communities) with a population of 67 million.The canal head of the South-to-North Water Transfer Project is located in Taocha Village, Jiuchong Town, Xichuan County. Due to the needs of the South-to-North Water Transfer Project, the county has undergone two large-scale population immigrations. The first immigration time was in 1958, the number of immigrants was about 20.5 million; the second immigration time was from 2008 to 2011 and the number of immigrants was

about 16.2 million. Among them, 1.9 million people were resettled inside the county and 14.3 million people were resettled outside the county. For the consistency of data analysis, the immigrants analyzed in this paper are all 1.9 million people resettled inside the Xichuan County during the second population migration.

4.2 Data Source

The second population immigration time in Xichuan County was from 2008 to 2011. In order to more authentic, this paper selects the data from 2008 to 2017 for research and analysis. The qualitative indicators in the paper are obtained by the expert scoring method and experts scholars with rich experience are invited to professionally score the relevant qualitative indicators; the quantitative indicators is derived from the *"Xichuan County Resettlement Compensation Standards and Plans for the Middle Route of the South-to-North Water Transfer Project", "The Policy of Resettlement Work for the South-to-North Water Transfer Project of Xichuan County",* the website of China South-to-North Water Transfer Project, *"the resettlement implementation method of Danjiangkou Reservoir Area of South-to-North Water Transfer Project of Henan Province", "The Yearbook of Nanyang" and "The Yearbook of South-North Water Transfer of Henan Province".*

4.3 Result Analysis

According to the risk assessment index system of multi-interest conflict of super-giant project, the entropy method is used to calculate the weight of each index: the index weights are (0.0633, 0.0357, 0.1584, 0.0579, 0.0139, 0.0026, 0.0142, 0.0158, 0.0252, 0.0414, 0.0402, 0.0427, 0.0651, 0.0328, 0.0210, 0.0604, 0.0449, 0.2199, 0.1126, 0.0120), the weight of each indicator layer can be known by the weight information of the above indicators. The weight of the stress index is 0.3270, and the weight of the status index is 0.3036. It can be seen that the generation of multi-interest conflict will bring risks to different stakeholders. The response index is 0.3694, which is the highest weight among the three indicators. Since the immigration work of Xichuan County ended in 2011, in response to the multi-interest conflict arising from the immigration process, the government and other relevant stakeholders have taken relevant measures to actively respond, so the response indicators have the highest weight, which is consistent with the efforts made by various parties in recent years to resolve the multi-interest conflict. Through the formula (1) and the formula (2), the trend of each index change can be obtained, as shown in Fig. 2.

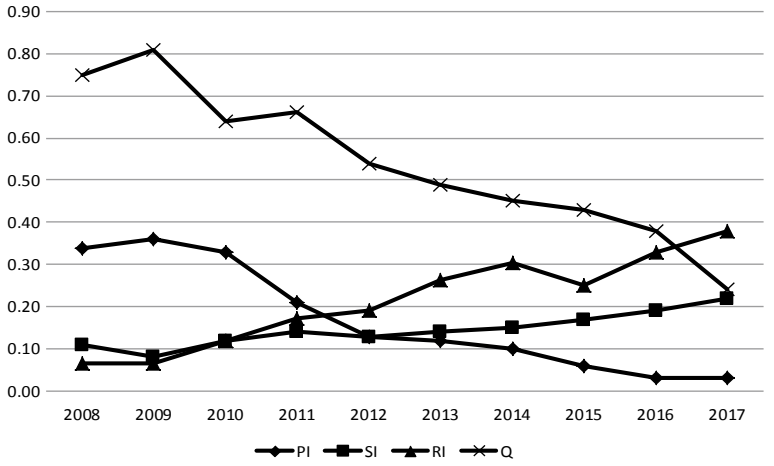

Fig. 2 Trends in the risk index of multi-interest conflict of immigrants in Xichuan County from 2008 to 2017

(1) Pressure index (PI) analysis

From the perspective of stress index (PI), the risk index of multi-interest conflict of immigrants in Xichuan County showed a trend of rising first, then rapidly decreasing and finally decreasing slowly from 2008 to 2017.

① From 2008 to 2009, the risk of multi-interest conflict increased from 0.34 to 0.36. The possible reasons for the increase of the pressure index include the following points. First, the immigration work in Xichuan County has just begun in 2008. The information exchange channels between immigrants and the government have not been perfected. The government has passed relevant requirements to immigrants through legal documents and verbal instructions, but immigrants have no relevant channels to express their own interests to the government. In addition, there are violent law enforcements by individual government officials, which intensify the conflict between the government and immigrants. Second, the profit-sharing mechanism is unfair. Based on the government's "national interests" and the "private interests" of the project legal person, it is hope that the lower the immigration cost, the better the project; but from the immigrants themselves, the economic cost and social cost are much higher than the government compensation. The unfair profit-sharing mechanism has intensified contradictions. Third, the level of immigration education. Most of the immigrants in Xichuan County are primary and junior high school education. When they encounter unfair treatment, their first reaction is to solve the problem through protest demonstrations, which will not only resolve the conflict, but will further intensify. Fourth, media information transmission distortion. Whenever there is a conflict, the media actively participates in the report and becomes one of the key stakeholders. However, some media pursued the heat first, communicated

less with the conflicting stakeholders, caused distortion of information transmission, frequent public sentiment, and high public negative sentiment, which led to deeper problems, so the pressure index reached the maximum during this period.

② From 2009 to 2011, the pressure index (PI) showed a rapid decline. With more than a year of immigration work, Multi-interest conflict persist, the government has taken active measures to deal with these conflict. First of all, the policy was introduced. During this period, the government issued the *"South-to-North Water Transfer Middle Line Project about Xichuan Resettlement Compensation Standards and Programs"* and other documents to provide economic compensation to the immigrants, to appease the people to a certain extent, and to control economic conflict. Secondly, regular symposiums and other activities will be held. The timely transfer of the needs of both the government and the immigrants has reduced many political conflict caused by poor communication of information; the last is the psychological diversion of immigrants. After the relocation of immigrants, the social environment and social relations have undergone tremendous changes and the psychological gap will exacerbate them. For the sense of resistance of the South-to-North Water Transfer Project, the government has assigned professionals to psychologically guide and comfort the immigrants, reducing the sense of immigration's resistance to the project and thus reducing social conflict. As multiple measures were paralleled, the pressure index declined rapidly during this period.

③ From 2012 to 2017, the stress index (PI) decreased from 0.13 to 0.03, showing a slow downward trend. In 2012, the resettlement work was basically completed. According to the requirements of relevant documents, the basic life of immigrants has been properly resettled. In the following years, the government is also trying to protect the basic needs of immigrants from various aspects. Therefore, the multi-interest conflict is not very Seriously, the stress index is declining year by year.

(2) Status Index (SI) Analysis

The status index (SI) has decreased first and then increased in decade. From 2008 to 2009, it dropped from 0.11 to 0.08, and then slowly increased year by year. The status index was 0.22 in 2017. After the start of immigration work, many people have left their homes. They not only face the dilemma of declining per capita income and rising unemployment rate due to the loss of economic resources such as farmland and housing, but also face multiple difficulties in the separation of social relations and lack of social security. Immigrants who have always lived on arable land lost their original source of life after relocation and they were unable to integrate into the new environment for a time, and there was a phenomenon of "marginalization". Some irrational immigrants may even take extreme actions and cause hidden dangers to social security. According to the survey data, the unemployment rate of immigrants in 2012 was as high as 3.3%, and the per capita income dropped sharply compared with that before immigration. Even if it has government economic compensation, it is far from

meeting the needs of immigrants for society and the environment. The public satisfaction is declining, and the confidence of immigrants to the government is declining, resulting in damage to the government image.In the meantime, there has been a phenomenon in which the media has been maliciously competing because of their own interests, which has aggravated the crisis of public opinion. In summary, the status index has declined. From 2010 to 2017, the status index has increased slightly compared to pre-immigration. This is because after years of development, immigrants gradually adapt to the new environment and new life, from the initial income from arable land to a variety of income sources, and gradually establish new social relations in the new environment and integrate into society. The unemployment rate of immigrants in Xichuan County fell to 3.1% in 2017. The per capita income increased to 4945 yuan, gradually regaining confidence to the government, so the status index showed a slight increase.

(3) Response index (RI) analysis
The response index (RI) generally showed an upward trend. The reduction of multi-stakeholder conflict requires multiple efforts. First of all, the government has been committed to properly solving the problem of multi-interest conflict in the immigration process. It has issued a number of government documents on how to rationally resettle immigrants and improve their living security, such as the *"Response to the Resettlement Policy of the South-to-North Water Transfer Project of Xichuan County"* and the *"Compensation Standards and Programs of South-to-North Water Transfer Middle Line"*; efforts to improve the social security system and increase the social security rate of immigrants. The data show that the social security rate of immigrants in 2017 has reached 92.48%, and the coverage of social security has expanded year by year. Second, the enterprising spirit of immigrants is improving. From a passive life status that relies entirely on government support to an active life status based on self-effort and supplemented by government relief, those with better adaptability have even driven local economic development through self-employment. Finally, the media is constantly improving its professional literacy, not only pursuing profitability, but also paying more attention to the authenticity of information reporting and avoiding further expansion of conflict due to distortion of information transmission. From the beginning to the end of the immigration work in Xichuan County, with the expansion of the risk of conflict among multiple stakeholders, the response between multiple stakeholders has increased. Stakeholders are all committed to reducing the risk of conflict among multi-stakeholders. Therefore, in recent years, the response index has generally shown an upward trend and the stress index has shown a slow downward trend.

(4) Multi-interest conflict risk comprehensive index (Q) analysis
The risk of multi-interest conflict arising from the immigration process in Xichuan County has different statuss at different times. According to Table 2, the following statuss can be divided. In 2008, the Q was 0.75. The risk of hidden multi-interest conflict was high in the year. The Q was 0.81 in 2009. As the pressure index rose in the year, the overall index also showed an upward trend, and the conflict risk was amplified. The annual Q is between 0.6 and 0.8 in 2010 ~

2011, the pressure index decreases rapidly but the intensity is still very large. The status index and the response index rise slowly but are still weak. Therefore, the risk of multi-interest conflict is relatively high during this period; the Q is at a critical status from 2012 to 2015, the three indices are in equilibrium; the risk of multi-interest conflict is at a lower status from 2016 to 2017, which is due to the smaller pressure index and the rising status index and response index.

5 Conclusion

From the perspective of multi-interest conflict, this paper constructs a PSR model for risk assessment of multi-interest conflict in super-giant projects. This paper takes Xichuan County as an example to conduct an empirical study to assess the risk of multi-interest conflict. The results show that:

(1) Conflict risk is played by multiple indicators. The three pressure indicators such as profit-sharing mechanism, education level of immigrants and government information transmission channels play a major role; status indicators such as immigrants' living standards, unemployment rate and public opinion crisis taking a large weight, it has a great impact on the status risk; the social security rate and the enterprising spirit of the immigrant have a great weight. From the perspective of conflict of project stakeholders, the main stakeholder of conflict is mainly government and immigrants; from the perspective of conflict of project appeals, economic conflict and social conflict are the main conflict.
(2) The risk of multi-interest conflict of arising from the immigration process in Xichuan County was controlled. The risk index of multi-interest conflict decreased from 0.75 in 2008 to 0.24 in 2017. The conflict risk level experienced the evolution of "high risk–low risk". The government controlled the risk by promulgating economic compensation documents, implementing the policy of benefiting the people, and raising the rate of social security. However, the average multi-interest risk index is 0.539, which is at a critical risk and still faces major challenges.

To sum up, in order to prevent the risk of multi-interest conflict, all stakeholders should focus on the profit-sharing mechanism, the education level of immigrants, the media literacy, the cooperation between the government and the project legal person and take active measures.

First, the government should strengthen the emphasis on the risk of multi-interest conflict in engineering projects, improve the policy systems related to immigration work, strictly control public opinion, and establish a fair profit-sharing mechanism. Among the government, project legal persons and immigrants, we should establish an effective profit-sharing mechanism so that all stakeholders can obtain a reasonable proportion of interests, in order to protect the interests of all parties, the conflict between the government and the people can be restricted and reduced, and avoid land acquisition compensation and resettlement. As a result, it can weak the serious

impact on the progress of the project and address the occurrence of events affecting social harmony in the process of land acquisition from the root cause.

Second, immigrants should improve their education level and strengthen their protection of legitimate rights. When their rights and interests are violated, they must learn to resolve conflict through legal channels instead of protesting demonstrations.

Third, the media should pursue economic benefits under the premise of respecting the facts, and avoid reporting on the news heat, so as not to cause a greater grievance crisis.

Fourth, the project legal person should actively cooperate with the government. Before the project starts, it should sign the resettlement agreement with the government according to the approved resettlement plan; during the project implementation, the project legal person should be compensated and resettled funds based on the resettlement plan. The two stakeholders will promote the stable development of the project on the basis of compliance with the agreement.

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Knowledge Governance in Overseas Risk Intelligence Cooperation

Yuan Ding and Wenbin Sun

1 Introduction

Risk event is one of the key challenges of firms' international strategy implementation. Most of the multinational firms invested considerable resources on the risk intelligence activities, while many risk events still occur every year. Effective monitoring and early warning are tough tasks for internationalized firms. This phenomenon shows the difficulty of overseas risk intelligence activity.

However, risk events did not equally influence every firm in the same area or industry. More skillful firms could escape from disasters, given they had sufficient information about the rules or knowledge related to the risks. Intelligence involves a great deal of knowledge. This kind of information or knowledge is generally no visible or available to public, and they are more likely to be implicit knowledge in most cases. For example, Nonaka (1990) pointed out that most of the knowledge is implicit.

Cooperation, especially intelligence cooperation, is a practical way to solve the problem. Firms may extend their information sources and even risk signals directly through cooperation. Moreover, knowledge creation may also occur through deep cooperation. During recent decades, knowledge sharing was a hot research topic. Within this research stream, Nonaka (1990) proposition, SECI circle and Ba, formed the core theoretical framework. However, an important precondition was ignored.

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Implicit knowledge is embedded in various firms, groups, and personals in business reality. Therefore, in the overseas cooperation context, individual firms or groups own the knowledge both in contractual and practical aspects. So whether sharing knowledge among partners is not depend on a contract or agreement, but depend on the will of a firm or group.

Therefore, it is an issue of governance, not an issue of management. Based on this precondition, the paper proposed a framework for knowledge governance, and made some discussion.

2 Theoretical Background

2.1 Overseas Risk and Risk Management

Overseas risk was always a main threat for multinational firms, and related researches were popularly found in the literature. In early times, De Genring (1967) proposed some suggestions to minimize overseas recruiting risks, and Anon (1976) also investigate overseas investment and political risk. Recently, overseas risk studies focused more on some specific areas, especially in the geography-related domains. In this direction, country risk was always an important context for multinational firms (Panzaru 2017). Mira and Taylor (2013) proposed an international perspective on risk management quality. Hou (2015) studied the legal and ethical challenges for Chinese overseas investment. Odediran and Windapo (2017) researched on the resource and capability management along with decision making to mitigate risks in African markets.

Studies on risk management can be divided into two ways. The first one is proactive defense. Bogodistov and Wohlgemuth (2017) illustrated risk management with perspective of resource and capability. Carvalho and Rabechini (2015) studied the impact of risk management on project performance, and emphasized the importance of soft skills. Ho et al. (2015) made a thorough review on supply chain risk management. Vincent et al. (2017) studied on IT governance and the maturity of IT risk management practices. The second one is passive defense. This kind of research was more emphasized in financial area in early times. For example, Shapiro (1985) studied on the topic of currency risk and country risk in international banking. Favara et al. (2012) explored strategic default and equity risks across countries. The Journal of Finance had become an important outlet in risk management.

2.2 Intelligence Activity and Cooperation

Risk intelligence is a necessary activity in risk management. Jin (2011) studied the indicator, information source of early warning signals in emergency events, and

shielded lights on monitoring and analysis. Shen (2009) proposed the importance of signal analysis.

It is widely acknowledged that firms could hardly accomplish the intelligence tasks independently. So intelligence cooperation was a hot research topic recently. For example, Mcnally, et al. (2012) studied intelligence cooperation and evolution. The majority of these studies in the literatures came from the area of military and political affairs. Stephane (2003) analyzed the difficulties and dilemmas of international intelligence cooperation. Clough (2004) studied the challenges of international strategic intelligence cooperation, and proposed the importance of Quid pro quo. Munton and Don (2009) explained Canadian operations in Castro's Cuba based on intelligence cooperation and international studies theory. Rosenau (2013) explored intelligence cooperation and the war on terror, and analyzed anglo–american security relations after 9/11.

2.3 Cooperation Governance

Cooperation is widely implemented globally; by cooperating, firms could reach some goals that otherwise cannot be accomplished by themselves. Since there are various forms of cooperation, research literatures are diversified accordingly. Kumar (2015) studied the relative effects of cooperative and noncooperative behaviors to show whether joint ventures are positive sum games. Shi (2015) analyzed the influence between partner's characters, the form of alliance, and the effect of cooperation. Some studies are focused on the relationship or behavior of partners with the cooperation performance. Chen and Shi (2013) demonstrated the relationship between relationship governance behavior, trust and cooperation performance. Mao and Zhu (2008) argued that trust and commitment cannot ensure the successful cooperation of network organizations, while power governance may do.

Cooperation governance and innovation performance are important research areas. Wu and Gu (2014) studied cooperation governance in innovation ecosystem of emerging industry. Lin, Fan and Huang (2009) argued that social restriction might help effective team cooperation. Zhao (2010) studied moral risk in horizonal and vertical innovation of industry clusters. Li (2014) suggested some risk defense policies for cooperative R&D governance. Hu (2016) researched the cooperation innovation path and governance effects. Abdallah and Ismail (2016) argued that good governance might help performance.

2.4 Knowledge Governance

With the confluence of knowledge management and cooperation governance, there came knowledge governance. Grandori (2001) argued that knowledge management

had established a good foundation, but there were some issues still need to be studied; and later, she established theoretical framework accordingly (Grandori, 2004).

Based on Grandori's pioneering work, Foss (2007, 2010) continuously worked on knowledge governance area, and built the theoretical framework. He argued that knowledge governance should be studied as an independent area (Foss 2006, 2010). Chong et al. (2005) suggested that researchers on knowledge management should expand their view and use methodology from social anthropology. Grabher (2004) proposed knowledge creation in ecosystems by studying the learning process in some projects.

3 Conceptual Framework

With the above literature, the theoretical foundation is sufficiently solid, and the theoretical gap is clear. Hereby we construct a framework.

In the context of risk intelligence cooperation, several firms conduct intelligence activities together. In face of the challenge of overseas risk, they are motivated to integrate their related information together, and even make some joint intelligence research projects. This type of cooperation falls in the territory of knowledge creation, but cannot be fully explained by traditional knowledge management theories. Due to the fact that it is a situation involving multi-firms and is not handled by and in one organization.

In this circumstance, there are more relationships to form and manage, such as organizing the activities, sharing information, and so on. The fundamental goal of cooperation is to integrate information sources, and make proper judgements as well as decisions, so the partners should share the benefits of successful activities, and bear the losses from mistakes accordingly. Therefore, among these elements, two sets of relationships between partners are extremely important. The first one is Power and Responsibility, which influence the process of cooperation; and the second one is Profit and Loss, which influence the distribution of cooperation.

To form the framework, two principles are necessary to be followed. First, efficiency principle is necessary for cooperation activities. The basic goal of intelligence cooperation is to minimize or avoid risk events, so the partners have to pursue efficiency. In intelligence cooperation activities, knowledge intensive firms usually have a higher probability to make right judgements and decisions. Therefore, they should have more power and potential profit in the cooperation activities, while they should also undertake more responsibility and potential loss accordingly. Second, fairness principle is necessary for sustaining cooperation. For any cooperation, fairness is a fundamental element to keep the cooperation in a long term. Whether a partner is knowledge intensive or not, it should be respected and treated with fairness. Therefore, their power and responsibility should be equal, and so do the potential profit and loss.

Table 1 The framework of knowledge governance in overseas risk intelligence cooperation

	Equivalence for fairness principle	Concentration for efficiency principle
Power-responsibility arrangement in cooperation	Power-responsibility equivalence Power and responsibility arranged equivalently. While one gets more power, it also gets more responsibility, and vice versa	Power-responsibility concentration Power and responsibility concentrated in knowledge intensive firms
Profit-loss arrangement in cooperation	MACROBUTTON HTMLDirect Profit-loss equivalence Profit and loss arranged equivalently. While one gets more potential profit, it also gets more potential loss, and vice versa	Profit-loss concentration Profit and loss concentrated in knowledge intensive firms

In summary, we created two dimensions to form the whole knowledge governance framework. With each dimension, there are two elements. Four variables appeared with crossover combination between dimensions, as shown in Table 1.

4 Discussion and Implication

In the above framework, Power-responsibility is associated to cooperation process; Profit-Loss is associated to cooperation result. Usually, fairness and efficiency cannot be achieved altogether. The portfolio of four variables describes the balance of fairness and efficiency, and the character of knowledge governance in cooperation.

When Power-Responsibility Equivalence is comparatively higher, partners will have a correspondingly high level of fairness during the process of cooperation. When Profit-Loss Equivalence is comparatively higher, partners will have a correspondingly high level of fairness in the result distribution of cooperation. Equivalence is a key element to keep the fairness of cooperation, which is a necessary condition for long-term cooperation.

When Power-Responsibility Concentration is comparatively higher, cooperative activities will have a correspondingly high level of efficiency during the process of cooperation. When Profit-Loss Concentration is comparatively higher, partners will have a correspondingly high level of motivational effect in the result distribution of cooperation. Concentration is a key element to keep the efficiency of cooperation, which is a foundation for the cooperation.

Both knowledge creation theory (Nonaka 1990) and knowledge-based theory of the firm (Grant 1996) produced great contribution to knowledge activities in business. The framework proposed here advances the theory by recognizing the fact that

knowledge is embedded in the individual entities, which has the real ownership of knowledge, and can determine whether it can be shared or not.

In the context of overseas intelligence cooperation, firms should keep a proper balance between equivalence and concentration. By doing so they could have chance to make the intelligence cooperation successful.

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R&D and Inter-firm Knowledge Flow in Japan's Shipbuilding Industry: Comparative Analysis of Factors that Promote Knowledge Flow Between Domestic and Overseas Partners

Motoyuki Kanetsuna, Kosuke Miyaji, and Takanori Sato

1 Introduction

In the shipbuilding industry, attention is paid to the role of maritime clusters in improving the competitiveness of firms. A cluster is a geographically close group of firms and institutions that belong to a specific field and are related to each other (Porter 1998; Martin and Surley 2003). Strong maritime clusters once existed in Japan, but they have now declined, and regenerating them has become an issue of concern. An ideal new cluster would an association of firms and organizations, such as shipyards, marine equipment manufacturers, shipping companies, and universities, connected through knowledge flows.

Maritime clusters need to be regenerated because the various knowledge flows inside the clusters are thought to have a positive effect on the competitiveness of the firms involved. These knowledge flows are more than just a communication channel; they have the ability to lead to new ideas and solutions that have not yet been conceived (Noorderhaven and Harzing 2009). To regenerate and strengthen maritime clusters, it is necessary to activate the knowledge flow within the cluster. It is unclear, however, what level of knowledge flow is currently being conducted inside Japan's maritime clusters, nor is it understood how much this knowledge flow is expanding outside Japan's domestic clusters.

In this research, we will examine the current level of knowledge flow within Japan's maritime domestic clusters and how much the knowledge flow is expanding outside these clusters in the R&D stage. We focus on domestic maritime clusters

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because few studies have considered the inter-firm relationships that exist in Japan's current maritime clusters. In addition, we are also interested in the relationships outside of the cluster as there are also few studies that examine the actual relationships between firms located in Japan's maritime clusters and overseas firms. These external and internal relationships are believed to enhance the competitiveness of a cluster itself and each of the firms that belong to that cluster (Fukushima 2005; Yamasaki 2005; Porter 1990).

Earlier studies on knowledge flow examine the relationships between parts manufacturers and assembly manufacturers, mainly in the automobile industry. Following these studies, in this paper, we will focus on knowledge flow between marine equipment manufacturers in Japan and domestic and overseas shipyards.[1] In addition, we will compare factors that affect these knowledge flows to clarify whether factors that promote knowledge flow with domestic partners and factors that promote knowledge flow with overseas partners are the same or different. To investigate these matters, we will focus on the R&D stage of marine equipment products and conduct a quantitative analysis based on a survey of marine equipment manufacturers in Japan. We target the R&D stage because it is believed that the competitiveness of a firm can be enhanced by activating knowledge flows with partners in the product development process (Aoshima 2001).

2 Literature Review

In past industrial cluster research, the focus has been placed on topics such as the structure of clusters, formation process of clusters, and factors promoting the formation of clusters. Regarding the structure of industrial clusters, studies have investigated how various firms and institutions build and manage business relationships and how clusters are composed (Watanabe 1996; Nakano 2007). Studies on the formation process of industrial clusters have revealed that the firms that make up clusters are spinning off one after another from one firm (Lecuyer 2000; Inagaki 2005). In addition, regarding factors that promote the formation of industrial clusters, Kenny and von Burg (2000) and Fukushima (2005) point out that clusters have different economies that operate based on different logic: Economy 1 (consisting of existing large companies, subcontractors, universities, laboratories, etc.) and Economy 2 (defined by institutional infrastructure for the creation and growth of new firms and consisting of entities supporting entrepreneurship). They reveal that the role of Economy 2 is important in the formation of a cluster.

While research on industrial clusters is promoted in this way, research on maritime clusters is progressing too. Hassink and Shin (2005) note that, in Korea, shipyards are

[1]The relationship between marine equipment manufacturers in Japan and domestic shipyards is considered to indicate the relationship within the cluster. Also, the relationship between marine equipment manufacturers in Japan and overseas shipyards is considered to indicate the relationships outside of the cluster.

concentrated within a region, but other essential contributors, such as laboratories, marine equipment manufacturers, iron and steel manufacturers, and universities, are dispersed across the country. Shin and Hassink (2011) also consider the Korean maritime cluster from the perspective of the cluster's life cycle.

However, most studies on industrial and maritime clusters have focused on dynamics within the cluster. There are only a few studies that deal with the relationships between clusters and those outside of the clusters. Fukushima (2005) finds that people who play a major role in cluster formation access external resources and acquire necessary resources by using networks obtained through a carrier outside the cluster. Porter (1990) also states that it is possible for firms belonging to a cluster to acquire international resources and technologies from firms located outside the cluster by conducting business with them.

However, as mentioned above, there has been little research on the relationship between firms in the current maritime clusters in Japan. There are also few studies on the actual relationships between firms located in Japan's maritime clusters and overseas firms. For this reason, this study focuses on inter-firm relationships within Japan's maritime clusters as well as inter-firm relationships with overseas companies located outside Japan's maritime clusters.

3 Hypothesis Development

As described above, we will examine the current state of knowledge flow related to marine equipment products in the R&D between marine equipment manufacturers in Japan and domestic as well as overseas shipyards. We will also examine the factors that affect each knowledge flow. In the following, we will set up hypotheses about the factors affecting knowledge flow. Here, with the exception of hypothesis 5, we will proceed assuming that the factors that influence the knowledge flow between marine equipment manufacturers in Japan and domestic shipyards, and between marine equipment manufacturers in Japan and overseas shipyards are the same. This is done to clarify whether the factors affecting domestic and overseas knowledge flows are the same. As will be described later, hypothesis 5 considers whether domestic knowledge flows affect overseas knowledge flows, so we do not apply the above assumption. Here, factors that affect the knowledge flow between firms are classified into factors related to internal matters and factors related to inter-firm relationships. We will then see which of these factors affects inter-firm knowledge flows.

Today, the shipbuilding industry faces many challenges, such as environmental issues, rule changes, and energy saving measures. For example, the industry must deal with the enactment of stricter emissions controls by the International Maritime Organization (IMO); it must also comply with the Ballast Water Management Treaty and the Energy Efficiency Treaty Convention (EEDI and SEEMP). Although these regulations require a response from marine equipment manufacturers and shipyards, if firms respond properly, there is a possibility of establishing a competitive advantage

over other firms. For that reason, each firm is putting emphasis on the development of a new type eco-ship.

Given that new ideas are created by strengthening the knowledge flow among firms, it can be assumed that the more seriously firms take the above-mentioned tasks, the more knowledge flows are being activated between marine equipment manufacturers and shipyards at the R&D stage. Therefore, the following hypotheses are presented here.

Hypothesis 1a: The more marine equipment manufacturers strongly recognize the tasks ahead for the shipbuilding industry, the higher the level of knowledge flow between marine equipment manufacturers and domestic shipyards at the R&D stage of marine equipment products.

Hypothesis 1b: The more marine equipment manufacturers strongly recognize the tasks ahead for the shipbuilding industry, the higher the level of knowledge flow between marine equipment manufacturers and overseas shipyards at the R&D stage of marine equipment products.

To make inter-firm knowledge flow effective during product development, it is necessary to recognize the shortage of knowledge within one's own firm, to absorb this knowledge from outside, and to integrate it with internal knowledge. To carry out such a process, each firm must have the ability to utilize this knowledge (Cohen and Levinthal 1990; Lane et al. 2001). That is to say, the ability to evaluate a partners' knowledge, to learn from partners, to externally adjust to advance cooperation with partners, and to internally adjust ability to advance coordination among relevant departments within a firm (Takeishi 2001). In addition, partners do not necessarily share a common language. In such a case, the ability to translate external knowledge into knowledge that can be understood internally is required (Harada 1998). Given that these abilities are necessary for activating knowledge flows among firms, the more they recognize that their abilities are at a high level, the more each firm will share knowledge with partners. Therefore, the following hypotheses are presented here.

Hypothesis 2a: The more marine equipment manufacturers recognize that they have a high ability to cooperate with partners, the higher the level of knowledge flow between marine equipment manufacturers and domestic shipyards at the R&D stage of marine equipment products.

Hypothesis 2b: The more marine equipment manufacturers recognize that they have a high ability to cooperate with partners, the higher the level of knowledge flow between marine equipment manufacturers and overseas shipyards at the R&D stage of marine equipment products.

Long-term relationships between firms can be cited as another factor that affects the knowledge flow between firms. A long-term relationship is thought to raise expectations for future mutuality. The expectation for future mutuality means that if the level of the knowledge flow at a certain point in time is not equal, it is assumed that it will become so in the future. For example, in the automobile industry, assembly manufacturers provide free technical support to suppliers (Sako 1996; Dyer and Chu

2000). This indicates that the knowledge flow is one-way rather than interactive. This one-way knowledge flow was implemented because there was an expectation that the suppliers will contribute to the assembly manufacturers in the future. As this one-way knowledge flow is carried out, suppliers become aware of their membership in the community, and they become conscious that they have to contribute to the community (Dyer and Nobeoka 2000). To have expectations for future mutuality, it is necessary for the transaction to be continued over the long term. If members believe that partners can continue relationships over a long period of time, expectations for such future mutuality may increase. Therefore, the following hypotheses are presented here.

Hypothesis 3a: The more marine equipment manufacturers form long-term relationships with domestic shipyards, the higher the level of knowledge flow between the marine equipment manufacturers and domestic shipyards at the R&D stage of marine equipment products.

Hypothesis 3b: The more marine equipment manufacturers form long-term relationships with overseas shipyards, the higher the level of knowledge flow between the marine equipment manufacturers and overseas shipyards at the R&D stage of marine equipment products.

In addition, trust is considered a factor that promotes knowledge flow among firms (Uzzi 1997; Lane et al. 2001; Anderson et al. 2002; Dhanaraj et al. 2004). Sharing knowledge comes with the risk that a partner may engage in opportunistic behavior, such as leaking knowledge to rival firms. However, no prior agreement can cover all the conditions related to these risks (Dhanaraj et al. 2004; Simonin 2004). If firms were to try to eliminate this risk through monitoring, the cost would be huge (Uzzi 1997). Thus, trusting that the parties will keep to their promise and that each has good intentions reduces risk and makes easier to share mutual knowledge (Eapen 2012; Sako 1996). Therefore, the following hypotheses are presented here.

Hypothesis 4a: The more marine equipment manufacturers form a relationship of trust with domestic shipyards, the higher the level of knowledge flow between the marine equipment manufacturers and domestic shipyards at the R&D stage of marine equipment products.

Hypothesis 4b: The more marine equipment manufacturers form a relationship of trust with overseas shipyards, the higher the level of knowledge flow between the marine equipment manufacturers and overseas shipyards at the R&D stage of marine equipment products.

Japanese companies that have formed strong relationships with partners within Japan have been establishing knowledge sharing relationships with overseas partners (Dyer and Chu 2000, 2003). Firms are expanding their relationships with overseas partners by following the same process used to build relationships with domestic partners (Dyer and Nobeoka 2000). Yet, companies with strong domestic ties are thought to be at a disadvantage in building relationships with new partners (Yamagishi 1998). However, if the process of establishing relationships with domestic partners can be used to strengthen relationships with overseas partners, the following can be

said. The more a firm actively exchanges knowledge flow with domestic partners, the more likely it is to activate knowledge flows with overseas partners. Therefore, the following hypothesis is presented here.

Hypothesis 5: The more marine equipment manufacturers are actively engaged in knowledge flow with domestic shipyards, the higher the level of knowledge flow with overseas shipyards at the R&D stage of marine equipment products.

4 Methods

4.1 Data

In 2016, we conducted a survey that we distributed to marine equipment manufacturers based in Japan. The companies surveyed were marine equipment manufacturers listed in the marine equipment section of the "Shipping and Shipbuilding Company Handbook 2016" (Nihon Kaiji Tsushin 2016) We excluded marine equipment associations and universities from this list. In total, 295 companies were selected. The questionnaire was sent to representatives of these companies (president, CEO). We received responses from 128 companies, and 100 of the responses were valid and used as samples (effective response rate: 34%). In this study, we conduct a regression analysis to verify the above hypotheses. Each variable was obtained as follows.

5 Variables and Measures

5.1 Dependent Variable

The dependent variable is "level of knowledge flow between marine equipment manufacturers in Japan and domestic as well as overseas shipyards at the R&D stage of marine equipment products." We asked the marine equipment manufacturers in Japan the following questions.

The following are a series of questions about the firm's relationship with Japanese shipyards at the R&D stage of marine equipment products: (a) At the R&D stage, do you obtain useful information for product development from shipyards in Japan? (b) At the R&D stage, do you receive requests about marine equipment products from shipyards in Japan? (c) At the R&D stage, do you provide information about your product technology to shipyards in Japan? Each question was measured on a 5-point scale, and the average value was calculated (1: not at all ~5: equivalent). The Cronbach's alpha is 0.856.

The following are the questions related to the firm's relationship with overseas shipyards at the R&D stage. (d) At the R&D stage, do you obtain useful information for product development from overseas shipyards? (e) At the R&D stage, do you receive requests about marine equipment products from overseas shipyards? (f) At the R&D stage, do you provide information about your product technology to overseas shipyards? Each question was measured on a 5-point scale, and the average value was calculated (1: not at all ~5: very much). The Cronbach's alpha is 0.929.

5.2 Independent Variables

We prepared the following four items as variables believed to influence the level of knowledge flow between marine equipment manufacturers and shipyards: "strength of task recognition," "ability to build relationships," "long-term business relationship," and "trust relationship." Regarding the "long-term business relationship" and "trust relationship," we asked questions about domestic shipyards and overseas shipyards separately.[2] In addition, "level of knowledge flow with domestic shipyard" was added as a variable affecting the level of knowledge flow with overseas shipyard. Each question was measured on a 5-point scale, and the average value was calculated (1: not at all ~5: very much). Question items for measuring each variable are shown in Table 1.[3]

5.3 Control Variables

As a control variable, interdependency among a ship's physical components, which is an important characteristic representing attributes of marine equipment manufacturers, was introduced into the model. A ship is divided into a series of components, including the ship's body, engine section, residential section, electric section, and navigation section (voyage section).[4] How these physical components are related to the function of the ship depends on the component. For example, marine equipment products that compose engine parts, such as engines, boilers, pipes, pumps, and the like, are complexly related to ship functions such as fuel consumption, speed, and maneuverability. Therefore, to improve these functions of the ship, it is necessary to adjust the above physical components and ship's body at a high level (Kato and Ku 2012). On the other hand, the correspondence between the habitability of the ship

[2]We refer to Manabe and Nobeoka (2002) for the measure of the trust relationship.

[3]Except for the item related to the trust relationship, there are no such measurement scales used in the previous research, so we use an original one that we devised ourselves.

[4]The Ministry of Land, Infrastructure and Transport classifies marine industrial products into 10 major categories and 44 medium categories (Ministry of Land Infrastructure and Transport 2010).

Table 1 Measurement scale (independent variable)

	Question item	Cronbach α
Strength of task recognition	(a) Environmental measures are an urgent task in the current shipbuilding industry (b) Energy saving measures are an urgent task in the current shipbuilding industry (c) Responding to rule changes is an urgent task in the current shipbuilding industry	0.643
Ability to build relationships with partners	(a) An in-house system necessary for building cooperative relationships with shipyards exists in your firm (b) Employees with the know-how to build cooperative relationships with shipyards are in your firm	0.863
Long-term business relationship with domestic shipyards	(a) There is a long-term business relationship with domestic shipyards for your main products (b) There are continuous orders for your main products from domestic shipyards	0.925
Trust relationship with domestic shipyards	(a) Domestic shipyards can be expected not to hurt your firm (b) Domestic shipyards are always expected to comply with contracts with your firm (c) Domestic shipyards can be expected to have sufficient ability to demonstrate the performance of your products	0.711
Long-term business relationship with overseas shipyards	(a) There is a long-term business relationship with overseas shipyards for your main products (b) There are continuous orders for your main products from overseas shipyards	0.974
Trust relationship with overseas shipyards	(a) Overseas shipyards can be expected not to hurt your firm (b) Overseas shipyards are always expected to comply with contracts with your firm (c) Overseas shipyards can be expected to have sufficient ability to demonstrate the performance of your products	0.915

and the residential section is almost one to one, so the interdependence of the residential section and ship's body is low (Ku and Kato 2013). When looking at factors that affect inter-firm knowledge flows, it is essential to use interdependencies among physical components as control variables.

Three items were related to interdependence among physical components; each used a five-point scale: (a) When delivering your products to the shipyard, customization is required for each shipyard. (b) Coordination with other marine equipment products is necessary to bring out the performance of your products. (c) Coordination among all the systems of a ship is necessary to bring out the performance of your products. (1: absolutely unnecessary ~5: absolutely necessary). The interdependency between the physical components was found by averaging the answers to these question items (Cronbach $\alpha = 0.761$).

6 Results

The mean value (M), standard deviation (SD), and correlations of each variable are as shown in Tables 2 and 3. The mean level of knowledge flow between marine equipment manufacturers and shipyards was 3.80 in the case of relationships with domestic shipyards, and 2.46 in the case of relationships with overseas shipyards. The mean of interdependencies among physical components is 3.24 while the mean of strength of task recognition is 4.28. The mean of the ability to build relationships is 3.66. The mean of long-term business relationships with domestic shipyards is 4.50, and the mean of long-term business relationships with overseas shipyards is 2.88. Finally, the mean of trust relationship with domestic shipyards is 3.90, and the mean of trust relationship with overseas shipyards is 2.94. When comparing the mean value between domestic and overseas shipyards, the level of knowledge flow,

Table 2 Descriptive statistics and correlations (domestic)

		Mean	SD	1	2	3	4	5
1	Level of knowledge flow	3.80	0.79					
2	Interdependency between physical components	3.24	1.02	0.11				
3	Strength of task recognition	4.28	0.53	0.16	0.31**			
4	Ability to build relationships	3.66	0.83	0.36**	0.18	0.10		
5	Long-term business relationship	4.50	0.83	0.29**	0.19	0.14	0.26**	
6	Trust relationship	3.90	0.59	0.38**	0.08	0.19	0.47**	0.38**

*$p < 0.5$, **$p < 0.01$

Table 3 Descriptive statistics and correlations (overseas)

		Mean	SD	1	2	3	4	5	6
1	Level of knowledge flow	2.46	1.06						
2	Interdependency between physical components	3.24	1.02	0.15					
3	Strength of task recognition	4.28	0.53	0.38**	0.31**				
4	Ability to build relationships	3.66	0.83	0.18	0.18	0.10			
5	Long-term business relationship	2.88	1.40	0.64**	0.10	0.29**	0.16		
6	Trust relationship	2.94	0.79	0.55**	0.06	0.30*	0.15	0.46**	
7	Level of knowledge flow in Japan	3.80	0.79	0.42**	0.11	0.16	0.36**	0.37**	0.26**

*$p < 0.5$, **$p < 0.01$

long-term business relationship, and trust relationship are significantly higher in the domestic case.

The results of the regression analysis are shown in Tables 4 and 5. Model I explains the knowledge flow between marine equipment manufacturers and shipyards through the interdependency between physical components. Model II attempts to predict the level of knowledge flows by using two variables representing intra-firm factors: the strength of task recognition and the ability to build relationships. Model III predicts the level of knowledge flow with two variables representing relationships between

Table 4 Factors influencing knowledge flow in the R&D stage (domestic)

	Model I		Model II		Model III	
Predictor	β	t-value	β	t-value	β	t-value
Interdependency between physical components	0.108	1.073	0.008	0.08	0.054	0.568
Strength of task recognition			0.126	1.271		
Ability to build relationships			0.343	3.572**		
Long-term business relationship					0.157	1.54
Trust relationship					0.311	3.094**
R2	0.012		0.144		0.167	
Adjusted R2	0.002		0.117		0.141	
F	1.151		5.386**		6.428**	

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 5 Factors influencing knowledge flow in the R&D stage (overseas)

	Model I		Model II		Model III	
Predictor	β	t-value	β	t-value	β	t-value
Interdependency between physical components	0.154	1.546	0.019	0.191	0.074	1.038
Strength of task recognition			0.357	3.632***		
Ability to build relationships			0.145	1.526		
Long-term business relationship					0.428	5.098***
Trust relationship					0.300	3.709***
Level of knowledge flow in Japan					0.17	2.192*
R2	0.024		0.164		0.520	
Adjusted R2	0.014		0.138		0.500	
F	2.389		6.277**		25.715***	

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

firms: long-term relationship and trust relationship. In the analysis of overseas shipyards, the level of knowledge flow in Japan is added to Model III. Before looking at the verification results of the model, we checked for multicollinearity with respect to Models II and III. The variance inflation factor is less than 2 for all variables, so we judged that there is no problem with multicollinearity.

We verified the effect of the variables related to hypotheses 1a, 1b, 2a, and 2b using Model II. The partial regression coefficient of the strength of task recognition, which is a variable for hypotheses 1a and 1b, was not significant in the case of domestic shipyards, whereas it was significant in the case of overseas shipyards. Therefore, hypothesis 1a was rejected, but hypothesis 1b was supported. The partial regression coefficient of the ability to build relationship, which is the variable related to hypotheses 2a and 2b, was significant in the case of domestic shipyards, but was not significant in the case of overseas shipyards. Therefore, hypothesis 2a was supported, but hypothesis 2b was rejected.

We examine the effect of variables related to hypotheses 3a, 3b, 4a, 4b, and 5 from Model III. The partial regression coefficient of long-term business relationship, which is the variable related to hypotheses 3a and 3b, was not significant in the case of domestic shipyards, but it was significant in the case of overseas shipyards. Therefore, hypothesis 3b was supported, but hypothesis 3a was rejected. Regarding hypotheses 4a and 4b, the partial regression coefficient of the trust relationship was significant both in the case of domestic shipyards and overseas shipyards. Therefore, hypotheses 4a and 4b were supported. In addition, the partial regression coefficient of the level of knowledge flow with domestic shipyards, which is a variable related to hypothesis 5, was significant. Therefore, hypothesis 5 was supported. A comparison between models based on the adjusted R2 shows that Model III has the highest explanatory power both in the case of domestic shipyards and overseas shipyards.

7 Discussion

The above result seems to indicate the following. The average value of knowledge flow between marine equipment manufacturer and domestic shipyards is 3.80. Additionally, looking at the answers of the 100 companies on the three 5-point scale questions related to the level of knowledge flow, a total of 70 firms answered 4 or 5 for item a, 80 answered 4 or 5 for item b, and 69 answered 4 05 5 for item c. This indicates that a high level of knowledge flow between marine equipment manufacturers and domestic shipyards is being carried out at the R&D stage of marine equipment products. On the other hand, the average knowledge flow between marine equipment manufacturers and overseas shipyards is 2.46, which is statistically lower than the knowledge flow with domestic shipyards ($p < 0.001$). However, in the answers to the three questions on knowledge flow with overseas shipyards, a total of 18 firms answered 4 or 5 for item a, 25 answered 4 or 5 for item b, and 21 answered 4 or 5 for item c. From this, it is evident that there are some marine equipment manufacturers that carry out a high-level knowledge flow with the overseas shipyard.

Looking at factors that influence the level of such knowledge flows, we find that the factors are not necessarily the same for domestic and overseas shipyards. In the case of knowledge flow between marine equipment manufacturers and Japanese shipyards, the partial regression coefficients of the ability to build relationships and trust are statistically significant at 0.343 and 0.311, respectively. This shows that these variables are related to the level of knowledge flow in the domestic field. This result that a trust relationship promotes knowledge flow between firms is consistent with previous studies.

On the other hand, the long-term business relationship is not significant in explaining the level of the knowledge flow, despite the high mean value (average value 4.50). This result may be interpreted as follows. As mentioned above, a long-term business relationship facilitates knowledge flow because firms that provide knowledge have expectations for future mutuality. On the other hand, there is a possibility that this mechanism has not functioned sufficiently in the inter-firm relationships in the shipbuilding industry in Japan. As mentioned in the hypothesis, to encourage knowledge flow, even if the cost increases in the short term, sharing knowledge must be expected to benefit both firms in the future. Knowledge flow among firms will not proceed unless both partners have an expectation for future mutuality and the providing of knowledge or technical support without charge (Sako 1996; Dyer and Chu 2000). Knowledge flow based on such expectations for future mutuality has not been conducted among inter-firm relationship in the shipbuilding industry in Japan; hence, the result may have been led. Regarding this point, future verification is necessary.

In the case between marine equipment manufacturers and overseas shipyards, the partial regression coefficients of the strength of task recognition, long-term business relationships, trust relationships, and levels of knowledge flows in Japan are 0.357, 0.428, 0.300, and 0.170, respectively. These are statistically significant. The point that the relationship of trust promotes knowledge flow among firms is the same as between marine equipment manufacturers and Japanese shipyards. On the other hand, the strength of task recognition and long-term relationship are statistically significant only in the case of the relationship with overseas shipyards. The fact that the strength of task recognition by marine equipment manufacturers affects the knowledge flow with overseas shipyards may be interpreted as follows.

As mentioned above, sharing knowledge with partners involves cost and risk. Such risks and costs will be considered greater in the case of overseas partners that have not traded before. To transact with new partners while assuming such cost and risk, some strong drivers are necessary. In the case of the shipbuilding industry, the strength of task recognition, in other words, the crisis consciousness related to environmental change may be such a driving factor. If you continue trading with current partners that already have business relationships, you can avoid the costs and risks of building relationships with new partners. Meanwhile, resistance within the firm is expected in providing knowledge for new partners, and new partners may act opportunistically. Since the strength of task recognition is a driving factor that increases the incentive to develop new products while sharing knowledge with new partners, it can be understood how the above result was derived.

Additionally, the reason why the long-term relationship has influenced the knowledge flow with overseas shipyards may be considered as follows. In the hypothesis, we anticipated that future expectations for reciprocity would encourage knowledge flow. However, it is unlikely that this mechanism worked because the average value of long-term relationships with overseas shipyards is not high. Rather, it may be possible to think about this reason in relation to trading practices of overseas shipyards. Overseas shipyards often change business relationships with partners depending on conditions such as price. For example, Korean shipyards have lowered procurement costs by flexibly changing suppliers (Japan Marine Equipment Association 2000). It will be difficult to conduct a high-level knowledge flow with partners who are uncertain as to whether trading can continue in the future. Therefore, it can be said that marine equipment manufacturers share knowledge only with overseas shipyards that can maintain long-term relationships and for which there are prospects for future transactions.

Furthermore, the level of knowledge flow with shipyards in Japan is a significant variable explaining the knowledge flow with overseas shipyards. This shows that marine equipment manufacturers that are conducting high level knowledge flows with domestic shipyards are also active in knowledge flows with overseas shipyards. In other words, from the standpoint of marine equipment manufacturers, cooperative relationships through knowledge flow in the domestic field are not always closed to foreign partners at the product development stage.

Long-term relationships and relationships of trust also influenced knowledge flows with overseas shipyards. It can be said that these results reflect the actual situation of inter-firm relationships in the Japanese shipbuilding industry as follows. The marine equipment manufacturers that actively carry out a knowledge flow with domestic shipyards have expanded their knowledge flows with overseas shipyards. However, the expansion of the relationships with overseas shipyards has been taking place over time while forming long-term relationships and trust.

8 Conclusion

In this paper, we examined the current state of knowledge flow at the R&D stage between marine equipment manufacturers in Japan and domestic shipyards as well as between marine equipment manufacturers in Japan and overseas shipyards. We also examined factors affecting each knowledge flow. These are clarified as follows: (1) the knowledge flow at the R&D stage between marine equipment manufacturers in Japan and domestic shipyards is at a high level; (2) although the mean level of knowledge flow between marine equipment manufacturers in Japan and overseas shipyards is lower than the domestic field, some marine equipment manufacturers in Japan develop new products while carrying out active knowledge flows with overseas shipyards; (3) marine equipment manufacturers that have been promoting knowledge flow with overseas shipyards have a long-term business relationship with them and a high degree of trust; and (4) marine equipment manufacturers that form cooperative

relationships with shipyards in Japan are forming high level knowledge flows with overseas shipyards. There are few studies on current inter-firm relationships in the shipbuilding industry in Japan. There is also little academic research on the actual state of relationships with overseas firms. The contribution of this paper is to clarify the actual state of knowledge flow among domestic firms and with overseas firms in the Japanese shipbuilding industry.

However, this study has its limitations. First, it is not clear what kind of knowledge flow exists between the marine equipment manufacturers and the shipyard, nor how it is utilized for product development. To clarify this issue, it is necessary to consider the case in detail. Second, we mentioned that marine equipment manufacturers in Japan have been expanding knowledge flows with overseas shipyards over time. This paper does not clarify how these relationships are expanding, which requires time, and how they affect the competitiveness of each of the firms. Exploring these points is a future task.

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The Impact of R&D Strategy on Firm Performance of ICT Companies in China

Hongpeng Wang, Ming Tian, Yang Zhang, and Zhenhua Wang

1 Introduction

In today's economic globalization, ICT (Information Communication Technology) industry becomes the focus of attention all over the world because of three important reasons. First, the ubiquity of ICT benefits every individual, industry and business sector. Second, according to the Moore's law, the number of transistors in a dense integrated semiconductor doubles every 24 months. That is to say, as much development as the ICT industry has obtained over the last several decades, growing up from original plain telephone service to advanced wireless technologies, this industry develops rapidly and remains immature with significant opportunities for future innovation. Third, ICT is a key economic driver to exit the recession and achieve sustainable development for the world. According to the report of Global Connectivity Index from Huawei, for every 20 percent increase in ICT industry contributes to 1% of worldwide GDP growth. Besides, as the data from OECD, in 2013, the investment of R&D in ICT industry is as high as 0.5% of GDP all over the world. Hence, the R&D in ICT industry is crucial for its development.

However, from the perspective of micro-level, previous researches have yielded inconsistent results about the relationship between R&D investment and firm performance. On one hand, some scholars suggested that investment in R&D can help firms improve innovative capability (Johnson and Pazderka 1993), acquire competitive advantage (Scherer 1965), increase sales and enhance performance (Morby 1988; Garcia-Vega 2006). On the other hand, an opposite result is also figured out by some

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researchers, suggest that the excessive input of R&D will not conducive to enterprise performance (Young and O'Byrne 2000). For example, Argyres believes that technological diversification will increase the coordination cost of the organization, thus affecting enterprise performance (Argyres 1996). In addition, some scholars believe that the positive effect of R&D investment on corporate performance is not fully established and will be affected by contingency factors (Yejing and Deming 2012), and even believe that the relationship between corporate R&D activities and corporate performance is inverted u-shaped (Leten et al. 2007; Huang and Chen 2010).

The difference between the long-term theoretical perspective and the empirical research conclusion has led to the confusion of the literature research in this field, which is not conducive to the further research. In fact, the reason why scholars have controversies in theoretical perspective and empirical research is largely due to the fact that previous studies ignored the impact of different types of R&D strategies on corporate performance when exploring corporate R&D strategy. Thus, aiming at the shortcomings of the existing research, this paper tried to solve two problems: How do different types of R&D strategies affect corporate performance? How do different R&D strategy combinations affect corporate performance? And this paper is aimed at identifying the effect of R&D behaviors on firm performance in ICT industry in the view of R&D strategy.

2 R&D Strategy in ICT Industry

In order to acquire technology leadership and competitive advantage, the development of worldwide ICT industry utilizes firms' R&D behaviors constantly to incent its development. Regarding to ICT firms, management but not technology determines their success or failure. Although disruptive technological innovation has a dramatic improvement for ICT firms, such as Netscape, truly successful enterprises like Samsung, Microsoft, IBM are always successful in R&D management. For the high risk and high benefit of ICT innovation, managers should clearly recognize three practical issues: how much to pay, where to pay, and how to pay.

However, there is no certain wisdom about R&D issues for its hardness to visualize (Zhang et al. 2003). Choi and williams (2014) thought that innovation strategies including innovation input, innovation scope, and innovation spillover are positively associated with firm performance respectively. As Schildt, Keil, and Maula suggested, the view of R&D strategy should be expanded from R&D expenditure to R&D intensity, R&D breadth, and R&D depth. Following existing literatures, we study R&D intensity and R&D scope (depth and breadth) for their key role in R&D decision (Schildt et al. 2012).

R&D intensity is the role of creating new knowledge by increasing the level of expense to innovation by firm (Choi and Williams 2014). R&D depth denotes to research and development level of tapping into specific knowledge by focusing on depth of innovation, Reflect a certain period of enterprise research and development

achievements in the same industry competitiveness (Yamin and Lianqi 2018). And R&D breadth refers to the diversified technological knowledge by concentrating on the variety of innovation field. With respects to R&D directions, Argyres found that R&D decision could be considered as a narrow range or a broad set of firm R&D strategy (Argyres 1996). As Lichtenthaler and Ulrich suggested (2009), a firm with technological diversity have a strategic competitive advantage for firms' survival and development. That is to say, different R&D strategic scenarios may have far-reaching influence on firm performance.

3 Hypothesis Development

3.1 R&D Strategy and Firm Performance—Single Effect

Although R&D expenditure is generally considered as a risky strategic decision involving comparative uncertain inputs that may or may not be rewarded over the long term (Lim 2015), Cohen and Levinthal advised that, in order to increase learning effects, higher R&D intensity will be acquired for a more extensive knowledge asset to help companies understand related knowledge. That is to say, increasing R&D spending influences the knowledge acquirement (Zahra and George 2002). More specially, enhancing the investment on R&D can help firm acquire three advantages of firms' growth including acquiring tacit and intangible technical knowledge, creating new opportunities, and accumulating competence. For example, Samsung, Intel, Microsoft, and other successful ICT firms invest far more than ordinary companies (exceed 15% of sale) in R&D. As Lin, Lee, Hung indicated, a high-tech firm which raise its R&D expenditures can enhance the investors expect that the revenue will be improved (Lin et al. 2006).

According to Saiki et al., R&D depth logic indicates that technological concentration improves firm innovation performance (Saiki et al. 2006). In fact, the enterprise pays attention to the R&D depth is a kind of gradual technological innovation behavior in the existing technology path, which shows that the enterprise fully grasps the existing opportunities, iteratively improves the existing products and technologies, and builds on the existing knowledge and strengthens the existing skills. By upgrading the depth of research and development, enterprises can update and improve existing products and improve short-term efficiency, which is conducive to the improvement of financial performance (Chandrasekaran et al. 2012). Existing papers have shown that technological innovation is considered as a firm-specific construct and a path-dependent learning process. Based on this view, depth and specialization play key roles in firm innovation (Cohen and Klepper 1996). Firstly, enhancing innovation depth has a positive influence on new product introductions which drives new sales and firm growth (Bayus et al. 2003; Katila and Ahuja 2002). Moreover, concentration enables firm to develop and maintain a core competence

in a specific field which becomes an important source of competitive advantage to acquire sales for acquiring new products sales.

At the same time, diversified innovation capabilities mitigate the trap of rigidity of technology and institutions, and maximize the economy of scope. This is because the improvement of R&D breadth can bring diversified technology for the enterprise, thus for enterprise to bring the static and dynamic economies of scale economy, scope economy, speed and space, make the enterprise in the competition environment of changing low adaptation costs, and promote the organization learning and knowledge overflow, so as to help enterprises to obtain and maintain competitive advantage. In this regard, R&D diversification with large range of breadth enhances innovation performance by reducing the risk of being locked into specific technological domains and acquiring low marginal innovation cost (Fleming 2001). In addition, the improvement of the R&D breadth will make the enterprise have a relatively solid and diversified technical foundation, which can disperse the risks of enterprise R&D investment and help the enterprise reduce the core rigidity and path dependence. According to the point of view of evolution theory, maintaining a high level of technological diversification is crucial to the development of enterprises. This is because it is difficult for enterprises to avoid the dependence of terrain on existing technological paths in the long-term development process, which makes enterprises often pay too much attention to certain technologies and neglect other technologies. If the technology market breaks through in areas of technology that companies ignore, they will be eliminated as core competencies become obsolete. By continually producing and innovating technology paths, and by leveraging the cross-penetration of diverse technologies, technology diversification can prevent enterprise core rigidity (Cohen and Levinthal 1990). That is to say, R&D breadth can help a firm foster innovative capability and explore new technological opportunities which reduce their vulnerability of dealing with diverse environmental uncertainties and complexities. Hence,

Hypothesis 1: In term of single effect, (a) R&D intensity, (b) R&D depth and (c) R&D breadth are positively related to firm performance.

3.2 R&D Strategy and Firm Performance—Interplay Effect

Due to uncertainty and complexity in technological and business environments, decisions of appropriate technological scope and intensity become crucial for firms to achieve innovation capabilities and subsequent performance (Miller 2006). Firms' choice of innovation strategies are constrained by their resources and capabilities (March 1991). More specifically, ICT firms may maximize their innovative opportunities by increasing investment, in specialized technology, or by spreading their technological capability over a wider range of sectors. We propose that there are two kinds of interplay R&D strategies, including interplay between R&D depth & R&D breadth and interplay among R&D depth & R&D breadth & R&D intensity.

It is well known that, returns from innovation in ICT industry are uncertain, low R&D depth of innovation may suppress the opportunities of revenue growth. For example, with low-level R&D depth, new knowledge may not be enough to meet customer need and drive sales. At the same time, too high level of R&D depth means that enterprises excessively rely on the existing R&D technology path in the innovation process, which may cause the phenomenon of "core rigidity" and "capability trap". The update of existing products and markets will give enterprises short-term advantages, but due to path dependence, enterprises may not be able to adapt to the dynamic and complex market environment in a timely and effective manner, thus hindering their long-term development (He and Wong 2004).On the other hand, as diversity continues to increase, the firm will face an ever increasing flow of heterogeneous knowledge from different technological areas which makes a firm dissipated and may result in the firm losing market share. Making decisions about which new areas to focus on for commercialization of technology will become more difficult with increasing diversity of innovation and with this comes the risk that firm's new products do not meet market needs. That is to say, if an enterprise pays too much attention to the expansion of technological diversification, it will face the cost pressure of consuming a huge amount of manpower, material resources, capital and other costs, and at the same time, it will also bear the risk of new technology research and development, which makes it difficult for the enterprise to obtain appropriate benefits and returns (Levinthal and March 1993). Therefore, it is easy for enterprises to fall into the "innovation trap" if they attach too much importance to the expansion of enterprise technology diversification. Although in the short term, new ideas and new technologies can improve the innovation ability, in the long term, enterprises may fall into the vicious result caused by exploration failure, thus damaging enterprise performance. These problems indicate that merely focusing on R&D breadth or R&D depth has risk to acquire economic benefit while a complementary strategic combination of breadth and depth may have a better effort.

Although a high level of R&D intensity does not mean the success of innovations, firm who has a heavy investment in R&D is more likely to focus on the basis of innovativeness and technology breakthrough (O'Brien 2003). As mentioned previous, ICT industry is a high risk and high reward industry. In practice, increasing R&D investment can amplify the interplay effect between R&D breath and R&D depth by enhancing infrastructure construction, motivating employees, bearing trial-and-error cost. That is to say, interplay among breadth, depth, and intensity are more likely to improve firm performance. Hence,

Hypothesis 2a: Interplay between breadth and depth is positively associated with firm performance.

Hypothesis 2b: Interplay among breadth, depth and intensity has a greater positive influence than interplay between breadth and depth.

Thus, the conceptual framework of current paper is following, see Fig. 1.

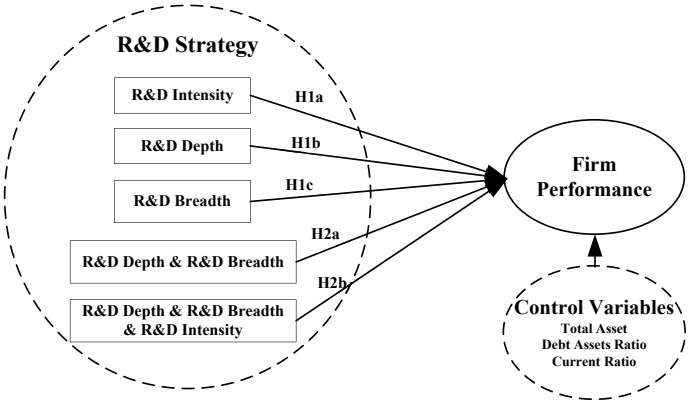

Fig. 1 Conceptual framework

4 Methods

4.1 Sample

Ordinary least squares method is used to test prior hypothesis. The sample of this study is extracted from the ICT companies listed on Shanghai and Shenzhen Stock Exchange Market of China in 2010. We select this year with two steps: first is picking the year from 2009 to 2014 to reduce the influence of subprime crisis on firm performance. Second, randomly select a year as the focal year. Our final sample consists of 107 observations. All the data of listed companies were gathered via the China Stock Market and Accounting Research (CSMAR) database and China Listed Company Reports. The data of patents were collected from the State Intellectual Property Office of China (SIPO). We used SPSS17.0 software to conduct statistics analysis.

4.2 Measurement of Variables

4.2.1 Dependent Variable

ROA (return on total assets) and ROE (return on equity) are important indicators to measure the performance of an enterprise in a certain period (Hunton 2003; Hitt 1995). However, due to the lack of consideration of corporate liabilities in the calculation of ROE, enterprises can improve the level of ROE by a large amount of financial leverage. Therefore, ROA, compared with ROE, can better reflect the utilization rate of assets and more directly reflect the level of corporate performance (Bharadwaj 2000). And this study focuses more on the impact of R&D strategy on enterprise

performance, and it is necessary to eliminate the impact of financial leverage and other factors on enterprise performance. Thus, for the OLS regressions, this paper reports the results using ROA as a feasible measure of company performance which is obtained directly from CSMAR item ROA (Scherer 1965).

4.2.2 Independent Variable

Intensity, breadth and depth of R&D are considered as three independent variables in present research. R&D intensity is a ratio of R&D expenditure to total employees or sales (Lee and O'neill 2003). Because sales could fluctuate significantly, controlling for employee scale should improve a comparison of R&D investment across firms. R&D breadth was measured by the total number of technological classes following the International Patent Classification (IPC) code where patents were filed and the depth was presented by the average number of patents in each of classes listed in the patent data (Fernhaber and Patel 2012). According to Balsmeier, Buchwald and Stiebale, we used the three-digit IPC code for each patent's technological class (Balsmeier et al. 2014). We add the patent-year data to the firm-year for R&D breadth and depth of these companies during the study time with 1 year lag. The way to calculate interplay effect of R&D intensity, depth, and breadth is multiplying R&D intensity by R&D breadth and R&D depth.

4.2.3 Control Variable

In addition to the influence of R&D strategy, enterprise performance is also affected by many situational characteristics, such as firm size, current ratio and debt asset ratio, etc. In terms of control variables, we selected several frequently used variables from existing literatures, including firm size (total asset), current ratio, and debt asset ratio (Henkel 2006; Jane and Beamish 2004; Chen et al. 2012; Chen and Miller 2007). (Table 1).

Table 1 Measure of variables

Variables	Measure
ROA	Obtained directly from CSMAR item ROA
Firm size (ln)	The natural log of total assets
Debt assets ratio	(total liabilities/total assets) %
Current ratio	Current assets/current liabilities
R&D Intensity (ln)	The ratio of R&D expenditure to total employees or sales
R&D Breadth (ln)	Measured by the total number of technological classes following the international patent classification
R&D Depth (ln)	Presented by the average number of patents in each of classes listed in the patent data

5 Results

We used SPSS17.0 software 4 to process data from 107 observation samples and obtain the mean and standard deviation of each variable. The summary statistics of variables in this paper is described in Table 2. From Table 2, we can find that the "Mean" of R&D Intensity reaches 2.345, indicating that the R&D investment of sample enterprises is generally high. And the "Mean" about R&D breadth and R&D depth of sample enterprises are at a high level, reaching 6.567 and 7.676 respectively, indicating that the selected samples attach importance to R&D activities as a whole, which meets the research needs of this study.

Table 3 shows the correlation coefficients of variables. Firstly, we can find that ROA($r = -0.446$, $p < 0.001$), Current Ratio($r = -0.702$, $p < 0.001$) and R&D Intensity($r = -0.379$, $p < 0.001$) are significantly negatively correlated with Debt Assets Ratio respectively, indicating that the sample enterprise performance and Current Ratio decrease with the increase of asset-liability Ratio, which is in line with the general rule. At the same time, as the asset-liability ratio of sample enterprises increases, the enterprises will reduce the R&D investment. Second, Firm Size is significant positive correlation between R&D breadth ($r = 0.405$, $p < 0.001$) and the R&D Depth ($r = 0.229$, $p < 0.05$), suggests that the larger the sample Size, the higher the level of Assets and liabilities. At the same time, the larger the enterprise scale, the diversification and specialization of enterprise R&D will be improved. In addition, the Current Ratio of sample enterprises shows a significant positive correlation with R&D Intensity($r = 0.3$, $p < 0.01$), indicating that with the increase of Current Ratio level of sample enterprises, R&D investment will be increased. The negative significance between the R&D Depth and R&D Intensity, and R&D between the Depth and Breadth has the positive significance, indicating that there exists a complex interaction between the three relations. As for the relationship between R&D Depth and R&D Intensity ($r = -0.216$, $p < 0.01$), that is, with the longitudinal deepening of R&D activities, the R&D investment of enterprises will be stagnant or even reduced. For R&D Depth and breadth($r = 0.191$, $p < 0.05$), there is a mutual promoting relationship between them, that is, when R&D diversification

Table 2 Summary descriptive statistics of variables

Variables	Total sample		
	No. of obs	Mean	Std. dev
ROA	107	0.06	0.048
Firm size (ln)	107	21.28	0.819
Debt assets ratio	107	0.329	0.180
Current ratio	107	4.307	4.849
R&D Intensity (ln)	107	2.345	0.321
R&D Breadth (ln)	107	6.567	5.736
R&D Depth (ln)	107	7.676	12.724

Table 3 Correlation of variables

	1	2	3	4	5	6	7
1. ROA	1.000						
2. Firm Size (ln)	−0.1	1.000					
3. Debt Assets Ratio	−0.446***	0.397***	1.000				
4. Current Ratio	0.187	−0.172 +	−0.702***	1.000			
5. R&D Intensity (ln)	0.106	−0.275	−0.379***	0.3**	1.000		
6. R&D Breadth (ln)	0.008	0.405***	0.137 +	0.087	0.076	1.000	
7. R&D Depth (ln)	−0.015	0.229*	0.142 +	−0.142 +	−0.216**	0.191*	1.000

+ $p < 0.1$, *$p < 0.05$,**$p < 0.01$, ***$p < 0.001$.

degree is higher, the level of enterprise R&D Depth will also be improved, when R&D Depth level is higher, it will also promote the diversification of enterprise R&D degree. What is more, in Table 3, the correlation coefficients of other variables are relatively small, which reflects that there is no obvious multicollinearity between the main variables, indicating that the selected variables are suitable for regression analysis.

In Table 4, the results of regression are described as follow. In the part 1, there is no significant influence of R&D intensity and R&D breadth on firm performance respectively, thus, H1 (a) and H1 (c) are denied. Moreover, R&D depth is positively related to firm performance ($\beta = 0.011$, $p < 0.1$). Although the results of the relationship only reached the 10% level of statistical significance, this study considered the results acceptable for two reasons: first, the study sample size was limited (only 107), so the significance level of 10% should not be ignored; Second, as far as this study is concerned, the effect of R&D depth on enterprise performance is significant at the significance level of 10%, which has reached the expected results of this study. thus, H1 (b) is supported. In the part 2, the interplay between R&D depth and R&D breadth is positively associated with firm performance ($\beta = 0.015$, $p < 0.05$), reached the significance level of 5%, hence, H2 (a) is supported. According to the model 5 in part 2, the significant influence of interplay among R&D intensity, R&D depth, and R&D breadth on dependent variable is significantly positive ($\beta = 0.02$, $p < 0.01$), Reached the significance level of 5%. The model 5 also shows that the coefficient of interplay variable is higher than it in model 4. As a result, the H2 (b) is supported.

Table 4 Results of regression

Variable	Part 1: Single effect		
	Model 1	Model 2	Model 3
Firm size (ln)	0.007	0.006	0.004
Debt assets ratio	−0.184***	−0.155***	−0.152***
Current ratio	−0.003*	−0.003*	−0.002*
R&D Intensity (ln)	−0.007		
R&D Breadth (ln)		0.003	
R&D Depth (ln)			0.011 +
Adjusted R^2	0.209	0.176	0.212
F-value	5.287	6.261	3.785
Variable	Part 2: Interplay effect		
	Model 4		Model 5
Firm size (ln)	0.001		0.002
Debt assets ratio	−0.148***		−0.149***
Current ratio	−0.002 +		−0.002 +
R&D Depth * R&D Breadth (ln)	0.015*		
R&D Intensity*R&D Depth * R&D Breadth (ln)			0.02**
Adjusted R^2	0.24		0.232
F-value	6.687		5.838

+ $p < 0.1$, *$p < 0.05$,**$p < 0.01$, ***$p < 0.001$

6 Discussion and Conclusions

According to the characteristics of this study, ICT companies listed on the Shanghai and shenzhen stock exchanges in China in 2010 were selected as research samples, and the relationship between R&D intensity, R&D depth, and R&D breath of ICT enterprises in emerging economies and corporate performance was quantitatively studied by using the ordinary least square method. The results indicate that (1) there is no noticeable influence of high level investment and broad strategy behaviors of R&D on ICT firm performance, that is to say, the single increase of R&D intensity or the implementation of diversified R&D strategies cannot necessarily bring about the improvement of performance of ICT enterprises. However, R&D depth is positively correlated with corporate revenue, that is, focusing on specific R&D areas can improve corporate performance. That is to say, in order to acquire high performance, ICT firms need to concentrate on certain R&D field but not increase R&D investment or disperse resource in diversified research domains. (2) The research results confirm that the R&D depth and breadth of enterprises have complementary effects on the improvement of enterprise performance, that is, the R&D strategy of enterprises focusing on the R&D depth and width can bring a good improvement of enterprise

performance. Because R&D depth and R&D breadth have complementary functions to incent firm performance, this requires ICT firms to plan a better R&D strategy by taking account of R&D breadth and depth simultaneously. (3) R&D investment plays a key role as magnifier and enhances performance of ICT firms by promoting implementations of R&D strategy. ICT firms should search for additional financial support when their R&D breadth and depth are sufficient. (4) Although the relationships between R&D strategy and firm performance are significant, the coefficient is still very small, which means R&D behaviors are just part of reason for ICT firms' success. Successful ICT enterprises, such as Huawei, Apple, et al., are not only good at innovation but also marketing and management.

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Study on the Effect of Factor Efficiency on Economic Restructuring Under Supply—Side Driving

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1 Introduction

With the acceleration of economic globalization, China, where an open economy development model is adopted with an open economy development model, has achieved sustained economic growth. However, in recent years, the imbalance of national economic structure has led to the weakening potential aggregate supply. Meanwhile, the slowdown of technological progress, the decline of capital efficiency and the tightening environmental constraints have resulted in aging internal structure of economic engine. Due to these factors, China's economic growth rate has been declining in recent years. Therefore, in order to adjust China's economic structure, it is important for scholars to address the following questions: (1) How to change the former factor-dependent mode of economic growth under the new economic normal; (2) How to enhance the adaptability of supply structure to the change of demand; (3) How to promote the demand-side economic growth of "consumption + investment + net export" to supply-side economic growth of "labor + investment + efficiency (TFP)".

Supply side structural reform is to improve the quality of supply, correct the distortion of factor allocation, improve the adaptability and flexibility of supply structure to the change of demand, so as to better meet the needs of the masses and promote the sustainable and healthy development of economic society. From the perspective of international economic restructuring process, Japan's four industrial restructuring after the war benefited from the Japanese government's industrial policy and created a development path that actively climbed to the high-end link of the international

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industrial chain; South Korea has transformed from an import-substituting economy to an export-led economy, including a transition from labor-intensive industries to capital-intensive industries and technology-intensive industries; The economic restructuring driven by technological innovation, represented by the United States, clearly reflects the decisive role of industry, technology and applied science in the development of modern civilization. These three typical transformation paths have effectively corrected the allocation of factors and promoted economic restructuring. At the macro level, the efficiency of China's economic structural factors is mainly concentrated on the gradual weakening of potential total supply, including the rise of financing costs, the disappearance of demographic dividends, and the decline in the efficiency of capital, labor, and technological factors caused by the slowdown in technological progress; At the micro level, it is characterized by a severe supply mismatch caused by overcapacity of low-end products and insufficient supply of high-end products.

What is the impact of factor efficiency on economic restructuring? In particular, how do the factors in the context of weak supply levels affect economic restructuring? By comparing the effects of consumption, investment and export on economic restructuring from the perspective of "supply side" and "demand side", this paper verifies the effects of capital, labor and technology on economic restructuring, and hope to provide effective theoretical basis and policy recommendations for relevant departments.

2 Literature Review

2.1 The Relationship Between Factor Efficiency and Economic Restructuring

Economic restructuring is to change the existing economic structure to make it more rational and perfect. The research in this field mainly focuses on the relationship between factor efficiency and economic growth. Minjie and Yongmei (2013) calculated the sources of China's economic growth using provincial data. The results showed that capital contributes the most to economic growth, while Labor contributes the least Minjie and Yongmei 2013. China Economic Growth Frontier Research Group (2014) pointed out that the rate of growth of the Chinese economy will be affected by the decline in the rate of capital accumulation, the disappearance of the demographic dividend and the weakening of the effect of technological progress (Research Group on China's Economic Growthl 2014). In terms of capital elements, Xiaohua et al. (2006) empirically concluded that capital input is the most important source of economic growth (Xiaohua et al. 2006; Yifu and Jian (2007) summarized the existing literature and concluded that China's economic growth was mainly driven by capital from 1978 to the beginning of the twenty-first century (Yifu and Jian. 2007). Zhigang and Xiahui (2015) calculated and compared different economic

growth paths, and concluded that capital investment type is the fundamental path of economic growth under the "new normal" (Zhigang and Xiahui 2015) and transformed to the intensive economic growth mode (Xinghua and Weimin 2007). In terms of labor input, many empirical studies show that human capital accumulation plays an important role in promoting the rapid development of China's economy (Fleisher et al. 2010; Jun et al. 2005) and affects economic growth through influencing TFP (Islam 1995; Aiyar and Feyrer 2002). But Vandenbussche et al. (2006) studies of 19 OECD countries show that only human capital with higher education has a significant effect on TFP (Vandenbussche et al. 2006), and the improvement of human capital quality brought by education will have an absolute effect on economic growth (Xiaolu and Gang 2009; Fang 2015; China Economic Growth Frontier Research Group 2015). In terms of technology input, domestic and foreign scholars use Chinese data to conclude that R&D will have a significant impact on productivity (Jefferson et al. 2006; Yanbing 2008). Zhi-guo et al. (2012) concluded that technological progress is the core driving force of China's economic growth from the aspect of resource allocation efficiency (Zhi-guo et al. 2012). Chunyu et al. (2011); Derong (2013) also pointed out that technological progress is the key factor to promote economic growth (Chun-yu et al. 2011; Derong 2013). Therefore, we formulate the following hypotheses.

Hypothesis 1. The improvement of factor efficiency in a country or region has a significant positive impact on its economic restructuring, especially the role of technical factors.

2.2 Power and Path Analysis of Economic Restructuring from the Perspective of Supply Side and Demand Side

Regarding how to effectively promote economic growth, there has always been a dispute between supply side management and demand side management in the theoretical circle. Supply-side economics emphasizes the absolute position of the market in capacity clearing. Dunne et al. (2013) argue that economic restructuring should focus on the role of the market itself in dynamic resource allocation (Dunne et al. 2013). Keynesianism, on the other hand, holds that the market cannot be cleared out and the combined result of individual rational choice in the market may lead to collective irrational behavior (Yuyan and Junning 1995), hence the demand management school believes that government policy intervention is necessary in economic development. In the face of China's current economic downturn, the lack of efficiency in economic growth, and many other issues, Kang and Jingchun (2015) proposed that we should start from the supply side, adjust the power structure and promote economic transformation and upgrading (Kang and Jingchun 2015). However, the current "supply-side structural reform" in China is not the old way of "Reagan Economics" (Angang et al. 2016), but the structural adjustment and adaptability strategy transformation based on the lack of motive force for China's economic

growth (Jia-yi and Jia-xiang 2016; Kunrong 2016). Zhi-yun (2014) analyzed from the short-term (demand side) and the long-term (supply side) of economic growth, and believed that on the basis of the transformation from demand-side to supply-side, we should tap the potential of economic growth by improving the quality and technical level of workers (Zhi-yun 2014). Liangwen and Sheng-rong (2016) constructed the dynamic mechanism of China's economic growth from the supply side by using the provincial panel data from 1994 to 2014, and alleviated the distortion of factor market and solved the problem of overcapacity through the reform of the supply side (Lei et al. 2016; Qun-hui 2016). Based on this, hypothesis 2 is proposed in this paper.

Hypothesis 2. Compared with the driving efficiency of the "troika" under the demand side perspective, the factor efficiency under the supply side has a greater impact on economic restructuring.

3 Supply Side Total Factor Productivity Measurement and Its Driving Intensity for High-Quality Development.

3.1 Data Sources

This article takes each province and city as the research object, the calculated data is mainly from the China Statistical Yearbook of the National Bureau of Statistics (1999–2016), China Statistical Yearbook for High Tech (1999–2016), China Science and Technology Statistics Yearbook (1999–2016), China Population and Employment Statistics Yearbook (1999–2016), and Compilation of the 60 Years Statistical Yearbook of New China, supplemented by the statistical yearbooks of provinces and municipalities. All data are handled manually based on research needs.

3.2 Measurement of Economic Restructuring in China*'s* Provinces and Cities

Economic restructuring is part of the optimization and efficiency improvement of the overall economic system. Through structural optimization and industrial upgrading, it provides new impetus for rapid economic growth, including industrial structure, consumption structure, technical structure, labor structure, distribution structure and so on. On the basis of the research of scholars at home and abroad, this paper follows the principle of appropriateness, representativeness and availability of indicators, and chooses the following 13 indicators to represent the economic restructuring: The proportion of added value of tertiary industry to GDP, resident consumption rate, urbanization quality coefficient, the proportion of operating profit of high-tech industry to industrial added value, ratio of tax to GDP, ratio of investment in fixed assets to GDP, labor productivity of the whole society, contribution rate of total

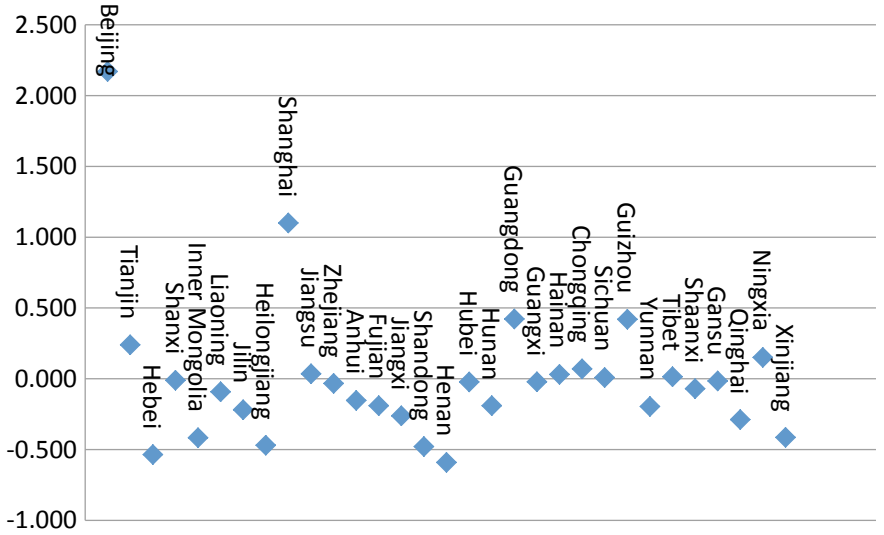

Fig. 1 Average score of comprehensive evaluation on economic restructuring in China's provinces and cities from 1999 to 2015

assets of industrial enterprises above scale, ratio of internal R&D expenditure to GDP, full-time equivalent of R&D personnel per 10,000 employees, wastewater discharge per unit GDP, sulfur dioxide emission per unit GDP and the ratio of per capita disposable income to per capita GDP. The factor analysis method was used to evaluate comprehensively the economic restructuring level of provinces and cities from 1999 to 2015. Results as shown in Fig. 1 and Fig. 2, Beijing had the highest comprehensive evaluation score (2.17), followed by Shanghai (1.10), Guangdong ranked third, and Henan (−0.59) was the lowest. From the overall point of view, China's economic restructuring basically presents the "Eastern > National > Western > Middle" situation, and the eastern region is relatively stable, while the middle and western regions have experienced great ups and downs.

3.3 Analysis of Total Factor Productivity in China's Provinces and Cities

Supply-side structural reform will have an impact on the total factor productivity. A comparative analysis of total factor productivity changes will help us to understand the role of supply-side reform. Due to the shortcomings of DEA in evaluating TFP in horizontal comparison at the same time, Malmquist method can effectively analyze the efficiency changes of decision making units in different periods. In addition, Malmquist index method can not only inspect the situation of total factor productivity

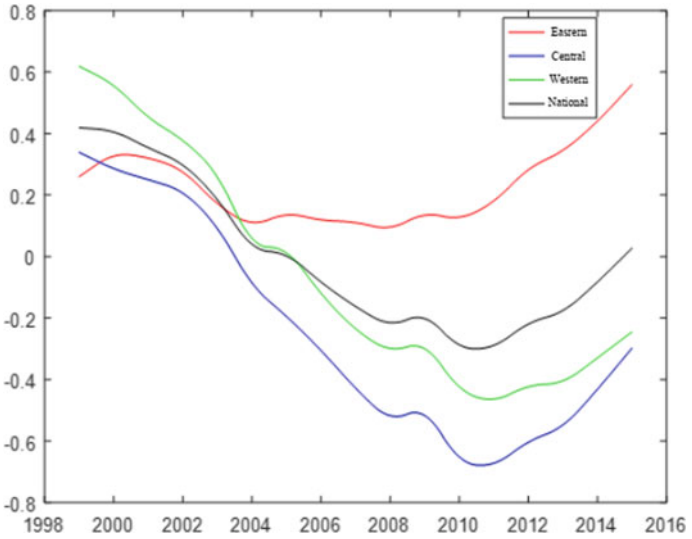

Fig. 2 The trend of economic restructuring in the eastern, middle and western regions of China in 1999–2015

in 31 provinces and cities at the same time point, but also carry out horizontal comparative analysis and future trend determination, which provides a good measuring tool for the change of total factor productivity (Caves et al. 1982).

According to the definition of Malmquist index in Fare (1994), it can be decomposed into technical efficiency change: $TC_t^{t+1}(x^t, y^t, x^{t+1}, y^{t+1}) = \left[\frac{D_t^t(x^t,y^t)}{D_t^{t+1}(x^t,y^t)} \cdot \frac{D_t^t(x^{t+1},y^{t+1})}{D_t^{t+1}(x^{t+1},y^{t+1})}\right]$ and technical progress change rate: $AC_t^{t+1}(x^t, y^t, x^{t+1}, y^{t+1}) = \left[\frac{D_t^{t+1}(x^{t+1},y^{t+1})}{D_t^t(x^t,y^t)}\right]$, namely:

$$M_t^{t+1}\left(x^t, y^t, x^{t+1}, y^{t+1}\right) = TC_t^{t+1}\left(x^t, y^t, x^{t+1}, y^{t+1}\right) \cdot AC_t^{t+1}\left(x^t, y^t, x^{t+1}, y^{t+1}\right)$$

Among them, (x^t, y^t) and (x^{t+1}, y^{t+1}) represent the input–output relationship of t period and t + 1 period respectively; Malmquist index > 1 indicates that total factor productivity of t period and t + 1 period increases; Malmquist index < 1 indicates that total factor productivity of t period and t + 1 period decreases; Malmquist index = 1 indicates that total factor productivity of t period and t + 1 period remains unchanged.

Taking the data of 31 provinces and municipalities in China from 1998 to 2015 as sample intervals, this paper takes capital K (replaced by the total amount of fixed assets investment completed by the whole society), labor L (expressed by urban employees at the end of the year), research expenditure E (expressed by R&D internal expenditure) as input indicators, and industrial gross product (expressed by GDP of expenditure method) as output indicators to calculate the changes of total factor productivity in different provinces and cities in different periods, and analyze

the relationship between economic development degree and total factor productivity in different regions.

Table 1 shows that from 1999 to 2015, the technical efficiency (EFFch) of most regions was greater than 1. Therefore, the improvement of total factor productivity in various provinces and cities in China mainly depends on the improvement of technical efficiency (EFFch). Among them, the regions with technological change rate (TECHch) greater than 1 and greater than the technical efficiency change are Tianjin, Shanghai, Beijing, Shandong, Jiangsu, Shaanxi, Guangdong, Liaoning, and Zhejiang, but only Tianjin, Shanghai and Beijing can really promote TFP. So the promotion of TFP in other provinces and cities in China lacks the drive of advanced technology and management. From the perspective of Malmquist index, in 1999–2015, only 11 regions had positive Malmquist index, and they were generally developed regions. The Malmquist index was negative in most areas during this period. So we can conclude that higher total factor productivity is a reason for the rapid economic growth in developed regions.

3.4 Decomposition and Interprovincial Comparison of Driving Intensity of Supply-Side Factors

The core of supply-side structural reform driving economic restructuring lies in the effective allocation of production factors such as capital, labor force and technology, and use them as the main means to accelerate economic restructuring and upgrading. In this paper, LMDI is used to study the driving intensity of capital, labor and technology on economic growth in the process of economic restructuring under the effect of supply-side (Yu-jing and Lin 2016). The main feature of this method is to decompose all factors without residual error. The calculation formula is as follows:

$$\Delta ET = ET^t - ET^{t-1} = \Delta ET_K + \Delta ET_L + \Delta ET_E$$

$$\Delta ET_K = \frac{ET^t - ET^{t-1}}{\ln ET^t - \ln ET^{t-1}} \cdot \ln\left(\frac{ET_K^t}{ET_K^{t-1}}\right)$$

$$\Delta ET_L = \frac{ET^t - ET^{t-1}}{\ln ET^t - \ln ET^{t-1}} \cdot \ln\left(\frac{ET_L^t}{ET_L^{t-1}}\right)$$

$$\Delta ET_E = \frac{ET^t - ET^{t-1}}{\ln ET^t - \ln ET^{t-1}} \cdot \ln\left(\frac{ET_E^t}{ET_E^{t-1}}\right)$$

According to the general formula of economic growth accounting, factor input generally includes capital, labor and technology. In different stages of economic development, the combination structure of the input of the three factors will be

Table 1 Malmquist index and its decomposition of total factor productivity in China's provinces and cities from 1999 to 2015

Provinces	Changes in technical efficiency (EFFch)	Rate of technological progress (TECHch)	Malmquist index (TFPch)	Provinces	Changes in technical efficiency (EFFch)	Rate of technological progress (TECHch)	Malmquist Index (TFPch)
Tianjin	1.018	1.051	1.07	Sichuan	0.993	0.995	0.988
Shanghai	1.004	1.046	1.05	Hubei	1.002	0.987	0.988
Beijing	1.011	1.022	1.034	Jilin	0.996	0.989	0.985
Shandong	0.997	1.033	1.030	Chongqing	0.992	0.986	0.978
Qinghai	1.034	0.994	1.028	Yunnan	1.005	0.970	0.975
Jiangsu	0.991	1.035	1.026	Heilongjiang	1.005	0.969	0.974
Hebei	1.011	1.000	1.011	Hainan	1.017	0.956	0.972
Shaanxi	0.999	1.011	1.009	Anhui	0.979	0.990	0.969
Liaoning	1.000	1.007	1.007	Shanxi	0.994	0.973	0.967
Xinjiang	1.02	0.985	1.005	Gansu	0.989	0.978	0.967
Guangdong	1.000	1.003	1.003	Hunan	0.988	0.978	0.966
Inner Mongolia	1.000	0.998	0.998	Henan	0.989	0.977	0.966
Ningxia	1.01	0.987	0.997	Fujian	0.987	0.979	0.966
Guizhou	1.016	0.981	0.997	Jiangxi	0.982	0.979	0.962
Zhejiang	0.988	1.004	0.992	Guangxi	1.000	0.963	0.962
Tibet	1.025	0.966	0.991				

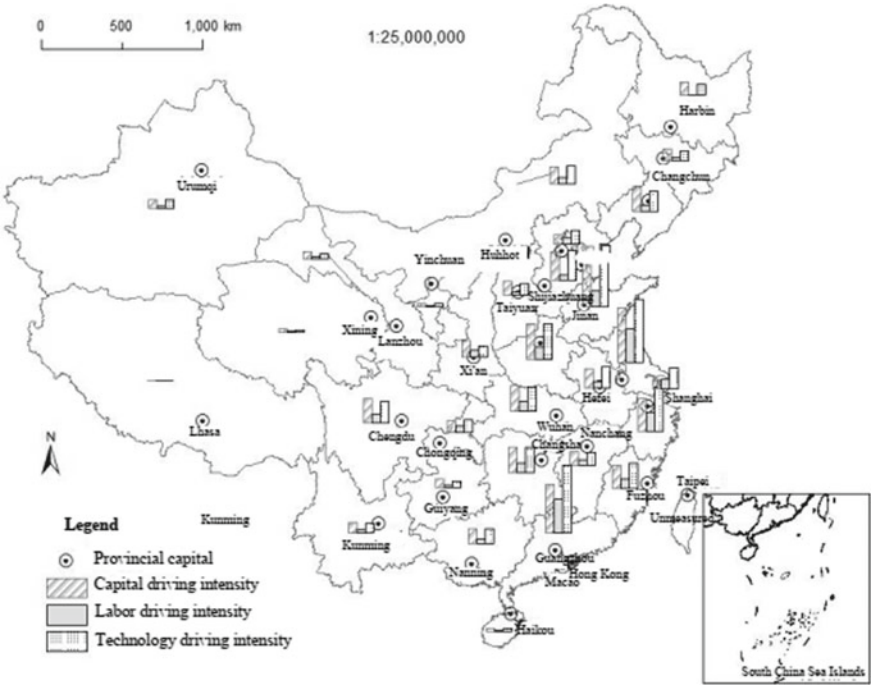

Fig. 3 Decomposition of LMDI intensity of three major elements in China's provinces and cities from 1999 to 2015

different, so the driving intensity of economic growth will be changed correspondingly. ET represents economic development, expressed by expenditure method GDP. The results of decomposition of provinces and cities are shown in Fig. 3 and the results of decomposition by region are shown in Figs. 4, 5 and 6.

According to Fig. 3, the driving intensity of capital and technology is generally higher than that of labor, and the driving intensity of factor is higher in developed areas than in underdeveloped areas. This result shows that during the period of 1999–2015, the driving force of economic growth in the process of economic restructuring mainly comes from capital and technology, while the driving intensity of labor force is relatively weak. Higher driving intensity of factors will promote economic restructuring to a certain extent. From the perspective of regional comparison, the three major factors in the east, middle and west regions of China are consistent in the overall trend of the driving intensity of economic restructuring, but there are obvious differences in the intensity of single factor. China's east, middle and west regions are all in an increasing state on the whole, while the trend of east > middle > west among regions is presented. The intensity of technological factors in east regions is higher than that of capital and labor factors, but there is no obvious trend in middle and west regions. Therefore, there is a positive correlation between factor-driven intensity and economic development. In recent years, the decline of factor-driven intensity needs to be paid attention to.

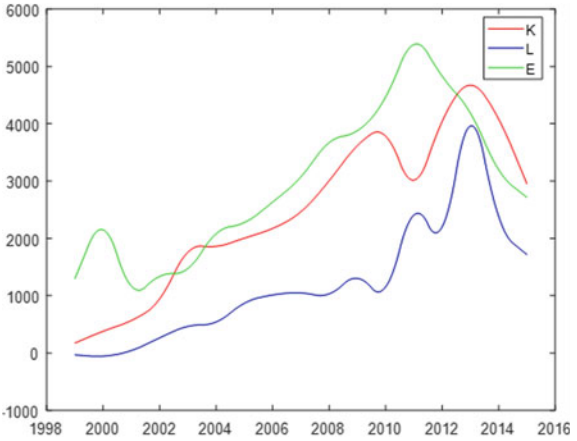

Fig. 4 Changes in the intensity of three major factors in the east of China from 1999 to 2015

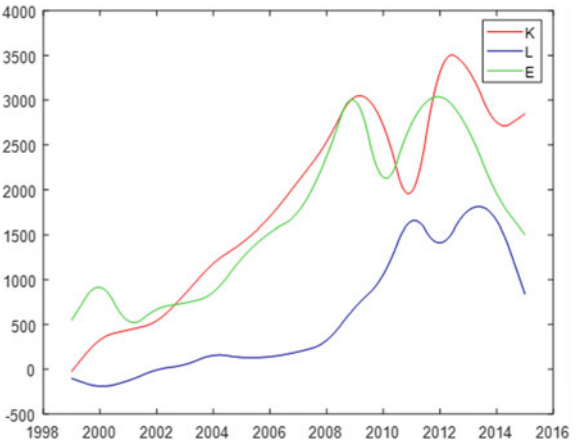

Fig. 5 Changes in the intensity of three major factors in the middle of China from 1999 to 2015

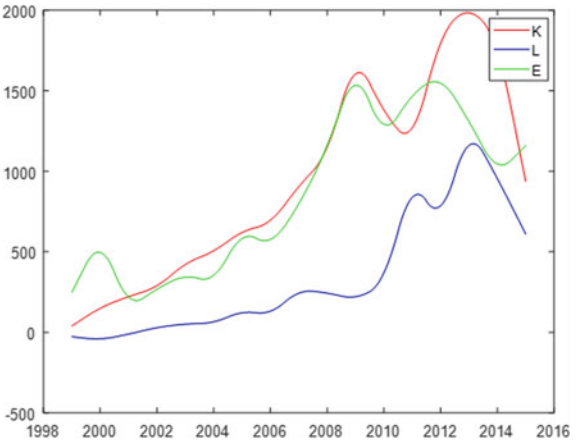

Fig. 6 Changes in the intensity of three major factors in the west of China from 1999 to 2015

4 An Empirical Analysis of the Effect of Supply-Side Factor Efficiency on High Quality Development Level

4.1 Design of an Empirical Testing Model from Supply Side Perspective

As a short-term stimulus policy, demand management policy mainly achieves economic growth by means of government investment and releasing liquidity. Although it has brought economic growth, it has also caused side effects such as overcapacity, asset price bubbles and pressure on resources and environment. Moreover, the marginal effect of demand management policy is decreasing. Therefore, the focus of economic system reform urgently needs to shift from the demand side to the supply side. The preceding theory indicates that the sustained economic restructuring is the normal state of the healthy development of economy, and the investment structure, labor force structure and technology structure are the important factors that affect the economic restructuring. In fact, economic restructuring is reflected by the change of efficiency of capital, labor and technical factors. In addition, economic restructuring is also affected by the utilization ratio of capital, the quality of human capital and the degree of technological innovation. (Henderson et al. 2007; Xiao-hua and Ling-ling 2012) and others believe that the degree of capital deepening and the level of human capital will have an impact on economic restructuring. Zhi-guo et al. (2012); Derong (2013) and others believe that innovation is the core of economic restructuring. In order to verify the impact of factor efficiency on economic restructuring from supply side perspective, this paper establishes the following research models on the basis of sample data of 31 provinces and cities in China from 1999 to 2015:

$$ET_{it} = \alpha + \beta_1 K_{it} * TFP_{it} + \beta_2 L_{it} * TFP_{it} + \beta_3 E_{it} * TFP_{it} + \beta_4 CLR_{it} + \beta_5 SAL_{it} + \beta_6 RDS_{it} + \varepsilon_{it}$$

In the formula above, ET_{it} represents the level of economic restructuring of i province in t year, K_{it}, L_{it} and E_{it} represent the intensity of capital decomposition, labor decomposition and technology decomposition of i province in t year respectively, TFP_{it} represents the total factor productivity of i province in t year, CLR_{it} is the ratio of capital to labor, G represents the level of per capita wage, SAL_{it} represents the percentage of internal expenditure of R&D in GDP, and ε_{it} represents the residual item.

4.2 Design of an Empirical Testing Model from Demand Side Perspective

In order to test the effect of supply side driving factor efficiency on economic restructuring, this paper takes the demand-side effect of economic restructuring as a comparative object. According to the theory of "troika" on demand side to promote economic growth, an empirical model is established from the demand side perspective to examine the effect of the driving efficiency of consumption, investment and net exports on economic restructuring:

$$ET_{it} = \alpha + \beta_1 C_{it} * Eff_{it} + \beta_2 I_{it} * Eff_{it} + \beta_3 Ep_{it} * Eff_{it} + \beta_4 CLR_{it} + \beta_5 SAL_{it} + \beta_6 RDS_{it} + \varepsilon_{it}$$

In the formula above, ET_{it} represents the level of economic restructuring of i province in t year, C_{it}, I_{it} and Ep_{it} represent the intensity of consumption decomposition, investment decomposition and net export decomposition of i province in t year respectively, Eff_{it} represents the "meta-dynamic" efficiency of i province in t year, and ε_{it} represents the residual item. In the calculation of demand-side "meta-power" efficiency, because of the negative value of net exports of goods and services, the calculation of "meta-power" efficiency (Malmquist index) is affected. Therefore, the same positive number is added to the index data to offset the negative number, and the DEA effectiveness of the decision-making unit remains unchanged. In the process of calculating the driving intensity of consumption (C), investment (I) and net export (Ep) by LMDI decomposition method, the approach of (Ang and Liu 2007) is adopted to deal with the individual cases of net export from negative to positive and from positive to negative.

4.3 Analysis of Empirical Results

Table 2 summarizes the effects of factor efficiency driven by supply side and "troika" driving efficiency driven by demand side on economic restructuring.

4.3.1 Analysis of the Impact of Factor Efficiency on Economic Restructuring from Supply Side Perspective

From model 1, we can see that the efficiency of capital, labor and technical factors is significant to economic restructuring, but the technical factors are less significant than the capital and technical factors. The efficiency of capital and technical factors has a negative effect on economic restructuring. Therefore, there are differences in the effects of capital, labor and technology on economic restructuring, which does not fully support hypothesi1 of this paper. Specifically:

Table 2 The results of economic restructuring from supply side perspective and demand side perspective

	Variables	Model 1 (Supply side)	Model 2 (Eastern)	Model 3 (Middle)	Model 4 (Western)	Variables	Model 5 (Demand side)
	Constant	−0.189*** (−5.743)	−0.309*** (−7.132)	0.031 (0.408)	0.319*** (5.323)	Constant	−0.230*** (−7.108)
Explanatory variable	*K*TFP*	−0.306*** (−6.374)	−0.190*** (−3.964)	−0.274*** (−2.728)	−0.212*** (−2.801)	*C*Eff*	0.007 (0.162)
	*L*TFP*	0.118*** (3.212)	0.109*** (3.087)	0.043 (0.477)	0.062 (1.003)	*I*Eff*	-0.303*** (−7.902)
	*E*TFP*	−0.114** (−2.476)	−0.158*** (−3.489)	−0.409*** (−4.078)	−0.155** (−2.201)	*Ep*Eff*	0.007 (0.261)
Control variable	*CLR*	−0.547*** (−11.349)	−0.455*** (−10.702)	−0.405** (−2.035)	−0.409*** (−4.135)	*CLR*	−0.602*** (−12.274)
	SAL	0.253*** (4.828)	0.386*** (7.739)	−0.111 (−0.476)	−0.159 (−1.634)	*SAL*	0.285*** (5.374)
	RDS	0.737*** (23.800)	0.788*** (23.597)	0.294*** (3.196)	0.138** (2.488)	*RDS*	0.724*** (22.782)
	R	0.801	0.939	0.758	0.702	*R*	0.789
	R^2	0.642	0.882	0.574	0.493	R^2	0.622

Note: ***, **, * indicate 1, 5, 10% significant respectively and the value in brackets is t

a. The coefficient of capital intensity acting on total factor productivity driving economic structure adjustment is −0.306($p < 0.01$) and the coefficient of the impact of capital deepening (CLR) on economic restructuring is −0.547($P < 0.01$). Therefore, capital factor efficiency can have a significant impact on economic restructuring, and the capital that can have a significant impact on economic restructuring is mainly fixed assets investment. However, with the saturation of fixed assets investment and the over-investment of social capital, the impact of capital factor efficiency on economic restructuring is gradually weakened or even restrained, so economic restructuring reduces the dependence on capital factors. From the contrast of the east, middle and west, the efficiency of capital factors in the eastern, middle and western regions has significant effect on the economic restructuring. But at the same time, the efficiency of capital factors in the eastern, middle and western regions has negative effect on the economic restructuring. Simply relying on investment in infrastructure construction is not conducive to the further adjustment of economic structure.
b. The coefficient of labor intensity acting on total factor productivity driving economic structure adjustment is 0.118($p < 0.01$), and the coefficient of economic restructuring affected by per capita wage level (SAL) is 0.253($p < 0.01$). Therefore, labor factor efficiency can have a significant positive impact on economic restructuring. However, the influence coefficient of labour factor efficiency on economic restructuring is low and the number of employed persons plays the

major role in economic restructuring. It shows that the effect of labor factor efficiency on economic restructuring is gradually weakening, and relying solely on the "demographic dividend" is not the fundamental way to promote economic restructuring. With the disappearance of "demographic dividend", the impact of labor factor efficiency on economic restructuring will be further weakened. From the contrast of the east, middle and west, only the labor factor efficiency in the eastern region has a significant influence on economic restructuring, but not in the middle and western regions. Therefore, the efficiency of labor factors has played a certain role in promoting the economic restructuring in the eastern region. The outflow of human resources and the low quality of human resources in the middle and western regions have not had a significant impact on the economic restructuring.

c. The coefficient of technical intensity acting on total factor productivity driving economic structure adjustment is-0.114($p < 0.05$), and the influence coefficient of RDS on economic restructuring is 0.737($p < 0.01$). Therefore, the efficiency of technical factors can have a significant impact on the economic restructuring, but the degree of its impact still needs to be improved. The driving coefficient of technical factor efficiency to restructuring is negative. That is to say, the internal expenditure of R&D in China has not been able to play a good role in promoting total factor productivity. The inefficiency of R&D internal expenditure will lead to unreasonable allocation and waste of resources, which is not conducive to economic restructuring. This negates that the efficiency of technological factors has a particularly significant impact on economic restructuring in hypothesis 1. However, RDS has a significant positive effect on economic restructuring. Technology innovation is an important factor affecting economic restructuring and the key is how to improve the efficiency of technology factors. From the contrast of the east, middle and west, the effect of technical factor efficiency in the east and middle areas is higher than that in the west, but the efficiency of technical factors in the east, middle and west regions is negative. Therefore, although R&D internal expenditure has played a certain role in its economic restructuring, the impact of R&D expenditure on economic restructuring has not reached the optimal level, or even entered a bottleneck period. For the east, the middle and the west, technological innovation is still the direction of economic restructuring.

4.3.2 Comparative Analysis on the Effect of Supply and Demand Perspectives on Economic Restructuring

Based on the comparative analysis of the factor efficiency from supply perspective and the "three driving forces" efficiency from demand perspective, it is concluded that supply management can promote the economic restructuring more effectively than demand management which is consistent with hypothesis 2. Specifically:

a. From the perspective of supply management, capital factor efficiency has weakened the driving role of economic restructuring, but it still plays a certain role;

Labor factor efficiency plays a significant role in economic restructuring, but it is mainly due to the existence of "demographic dividend". With the improvement of the quality of human capital, there is still much room to explore the impact of labor factor efficiency on economic restructuring; Technological factor efficiency also plays a significant role in economic restructuring, but its mode of action still needs to be changed to a greater extent. R&D expenditure intensity has a significant positive impact on economic restructuring, that is, technological innovation has always been an important factor in promoting economic restructuring.

b. From the perspective of demand management, only investment-driven efficiency plays a significant role in economic restructuring. Because of China's high savings and low consumption, as well as the low added value of export products, the driving efficiency of consumption and net export in demand management have no significant effect on economic restructuring. Although investment-driven efficiency has significant effect on economic restructuring, its coefficient is negative. Capital deepening (CLR) also has a negative impact on economic restructuring. It shows that the over-investment of local governments and social capital in steel, cement and infrastructure industries has not played a good role in promoting economic restructuring. Social capital has not flowed to industries with great potential for development, such as high-tech industries, and even overcapacity has appeared, thus restraining economic restructuring. Therefore, the effect of factor efficiency driven by supply on economic restructuring is stronger than that driven by "troika" from the perspective of demand.

5 Conclusions and Policy Recommendations

The study shows that the efficiency of capital, labor and technical factors play a significant role in economic restructuring, but the efficiency of technical factors has a lower impact on economic restructuring than the efficiency of capital and technical factors. In the short term, demand management can promote economic growth to a certain extent through investment, but it cannot promote economic restructuring well. Over-investment to stimulate the economy will also bring a series of problems, such as low efficiency of resource utilization and overcapacity.

In order to promote the economic restructuring more effectively, this paper puts forward the following policy recommendations:

(1) Firstly, we should continue to improve the efficiency of labor factors. Labor factor efficiency has a significant positive effect on economic restructuring. We should continue to pay attention to the improvement of labor factor efficiency. With the weakening of "demographic dividend" advantage, the demographic dividend should gradually shift to the demographic quality dividend, which focuses on knowledge and education, especially in the middle region where human resources are abundant. To meet the needs of further development, the eastern region should take talents as the priority development strategy, explore

the deep potential of human capital from the aspects of talent structure, talent system and talent resources and then promote talent-driven innovation strategy.

(2) Secondly, we should improve the efficiency of capital and technology factors. Capital accumulation is the source of economic growth, but excessive capital investment and disorderly allocation of resources will lead to overcapacity. The primary task of supply-side structural reform is to jump out of the strange "more regulation, more expansion" circle of excess capacity and solve the problem of resources misallocation. Therefore, it is necessary to improve the efficiency of capital elements and avoid blind investment of factor resources; In addition, the key to economic restructuring is to fully tap the efficiency of technical elements. At present, China's technological innovation is still in its infancy, and the role of technological factor efficiency in promoting economic restructuring has not been fully demonstrated. Therefore, we should strengthen innovation drive, implement leapfrog independent innovation, establish an effective incentive mechanism for the transformation of scientific and technological achievements, promote the flow of eastern resources to the middle and western regions, enhance total factor productivity, and give full play to the core role of technological factor efficiency in promoting economic restructuring.

(3) Finally, some problems should be noticed in supply-side structural reform. The key to supply-side structural reform is to deal with the relationship between macro-control and decentralization, supply-side reform and demand management. The implementation of supply-side reform is not to abandon demand management. The supply and demand sides are a balanced relationship, and there is no contradiction between them. Supply-side reform emphasizes that demand cannot be simply stimulated, but the ultimate goal of the reform is to create demand; In addition, we should pay attention to the improvement of the system in the process of reform. For example, through the reform of household registration system, we will promote the effective circulation of labor force in the eastern, middle and western regions, and improve the legal system, so as to provide institutional guarantee for market-oriented reform and technological innovation.

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Development of the Vietnamese Iron and Steel Industry Under International Economic Integration

Nozomu Kawabata

1 Introduction

This study discusses the industrial development of developing economies under international economic integration, or globalization, by examining the case of Vietnam's iron and steel industry.

First, this study clarifies that there has been little room for a protectionist policy for local enterprises in the domestic and foreign economic environment of Vietnam since the 1990s. Second, assuming such constraints, this study examines the roles of various types of enterprises in the development of Vietnam's iron and steel industry. Accordingly, it considers state-owned enterprises (SOEs), private enterprises, and foreign enterprises. Through this examination, this study clarifies the factors that drive industrial development under international economic integration.

The path of industrial development varies depending on the time and industry, and it differs across countries. It is impossible to provide a single explanation regarding the potential for industrial development in developing countries and the measures necessary for that development. However, this study suggests that the case of Vietnam's iron and steel industry can provide some insights. This study confirms one realistic path through which industrial development becomes possible under international economic integration and suggests other cases. Moreover, this study clarifies that this development can occur not only via market adaptation behavior by enterprises and laissez-faire policies by government, but also certain entrepreneurial behaviors and policies that offset market and governmental failures.

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2 Steel Industry Promotion Without Highly Protectionist Policies: Analytical Perspective and Previous Studies

Based on the theory of free trade, as world trade expands, each economy increases its income through specialization in industries with comparative advantages. However, global capital-intensive industries, such as iron and steel, were targets of state protectionist policies in the 19th and twentieth centuries. Such policies were justified for various reasons. As iron and steel are basic commodities and raw materials for arms, their domestic production was considered crucial for state independence. Moreover, high fixed costs and various infrastructure needs such as port facilities, electrical power grid, and transportation systems induced the government's involvement. Governments in developing economies protected domestic enterprises by applying high tariffs on imported steel products and provided preferential treatment to domestic companies through infrastructure and financing. Sometimes, even under the capitalist system, the steel industry's development was promoted under state ownership. In a socialist planned economy, the production and distribution of steel was a key factor in the state's "command and control" strategy. In 1986, at the end of the Cold War, about 70% of the world's steel production was under government control. Only the United States and Japan did not have state ownership of their steel companies (Toda 1987, pp. 57–59).

In many Asian economies, the iron and steel industry developed in the twentieth century under the government's industrial policy. The steel industry in Japan in the first half of the century[1] and those in South Korea[2] and Taiwan[3] in the latter half of the century achieved remarkable growth. China and India are more complicated cases. These two economies' iron and steel industries showed astonishing growth after their reforms and opening-up policies at the end of the twentieth century. However, the industrial policy still has a strong influence over these industries.

It should be emphasized here that since the 1990s, it has become extremely difficult to promote the steel industry through highly protectionist policies (Ohno 2003; Kimura 2004). In the current global economy, with huge flows of trade and direct investment, a country cannot promote economic development unless it joins the World Trade Organization (WTO) and exploits the benefits of cross-border trade and investment. It is also important to participate in regional free trade agreements and regional economic partnership agreements. In other words, developing economies

[1] There are various views on the government's role in the development of the Japanese steel industry. However, no researcher denies the important role of the government before World War II or during the wartime and recovery periods. See the survey by Nagura (2015).

[2] On the development of the South Korean iron and steel industry centered on POSCO, see Mitsubishi Research Institute (1981), Park (1989), Juhn (1991), D'Costa (1994, 1999), Fujimoto (2009), Abe (2016).

[3] On the development of the Taiwanese iron and steel industry centered on the China Steel Corporation, see Syu (1995) and Sato (1999, 2008).

must drive industrialization under the condition that they engage in trade and investment liberalization in the early stages of economic development. This makes it difficult to nurture infant industries and local enterprises through targeting and protectionism. Even if a government implements such policies, the probability of success is fairly low. In fact, the joint industrial project of the Association of Southeast Asian Nations (ASEAN) conducted in the 1970 s and the protectionist and nurturing policies for the iron and steel industries in Malaysia, Indonesia, and the Philippines in the 1970s and 1980s ended in failure (Kawabata 2005, pp. 81–83, 2016a, pp. 2–3).

Under the trend of liberalization, some industries in developing economies flourished due to their comparative advantages. Agro-industries that commercialize domestic natural resources as well as labor-intensive industries, including the garment; footwear; and assembly of machinery and electric and electronic equipment industries are a few examples. These industries supported the growth of ASEAN economies from the 1990s to 2000s.

However, as some industries grow, there is a need for machinery and equipment, and the construction of factories, offices, houses, and buildings stimulates demand for materials, which consequently increases imports rapidly.[4] This creates an opportunity to substitute imports through domestic production, utilizing steel demand growth in user industries. Thus, the issue of how to nurture the steel industry without protectionist policies arises. Many countries face this challenge today, in not only ASEAN but also the Middle East and Africa.

Here, the special status of China and India should be emphasized. Neither country is a typical developing economy with regard to the iron and steel industry for two reasons. First, both economies have a long history of industrialization. Both the iron and steel industry and metallurgical research in universities have existed in these countries even under Western or Japanese imperialist control before World War II. Thus, China and India already had a modern steel industry before they opened their economies. Second, these countries have huge populations and large domestic markets. In most developing economies, the problem of low domestic demand deters protectionist policies. In China and India, this was not a serious problem. The experience of China and India cannot be translated to that of many small developing economies with infant steel industries.

What are the opportunities for iron and steel industry development in a developing economy without the use of protectionism? This study examines this issue through the case of Vietnam. This case was treated by the author in a series of policy studies. In the Japan-Viet Nam Joint Research project (1995–2001), this industry was treated as a case of industrialization for the first time (Japanese members of Trade and Industry Group 2001; Kawabata 2001). This was followed by the joint research project between the National Economics University and Japan International Cooperation Agency (2001–2004) and the Vietnam Development Forum (2004-; Kawabata 2005, 2007). In these studies, the issue was determining effective policies for industrial development under market-oriented reform and economic integration.

[4]For Vietnam in the 1990s, see Imaoka and Ohno (1999, p. 215).

However, concerning the real process, the growth of the steel industry remained an open question.

In the 2010s, the growth of the Vietnamese iron and steel industries became an established fact. The analytical perspective shifted from policymaking to industry analysis. Detailed investigation was executed on industrial organization (Kawabata 2016a), private companies (Kawabata 2016b), and SOEs (Kawabata 2017). However, analysis of the role of foreign enterprises is still missing. Moreover, insights into the various types of enterprises should be considered in the total perspective of industrial development under international economic integration. This study tries to fill these gaps.

3 Growth of the Iron and Steel Industry in Vietnam

In 2017, 11.5 million tons of crude steel were produced in Vietnam, an amount that was 3.7 million tons greater than 2016's production (Fig. 1).[5] Thus, the country became the eighteenth largest steel-producing economy worldwide. In that year, the first large-scale integrated iron and steel complex started its blast furnace (BF) operation.[6] Vietnam's production scale was still small compared with that of China

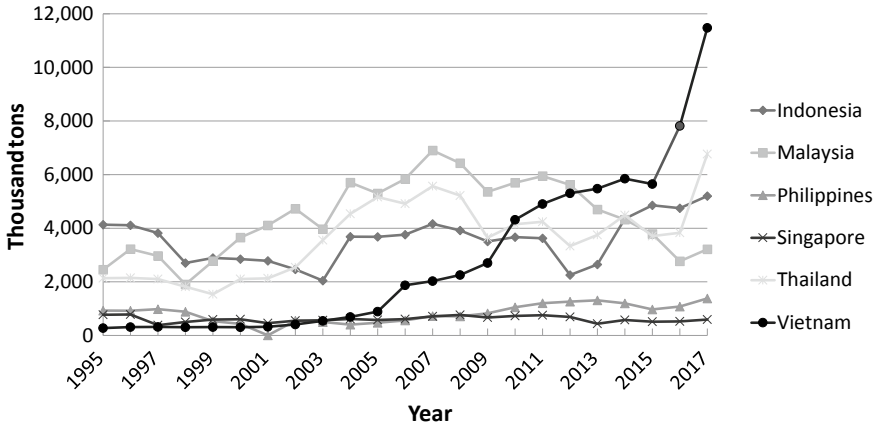

Fig. 1 Crude steel production in the association of Southeast Asian economies, 1995–2017 *Source*: South East Asia Iron and Steel Institute (2018)

[5]In this study, ton means metric ton. Production, exports, imports, and consumption of the Vietnamese iron and steel industry are cited from the South East Asia Iron and Steel Institute (various years) unless otherwise noted.

[6]There are two major types of production systems in the iron and steel industry. The first is an integrated system in which iron, crude steel, and steel products are produced through a continuous process in the same production complex. The major material is iron ore, which is reduced into pig iron in the BF using coke. Next, carbon contents and other elements are adjusted in the basic

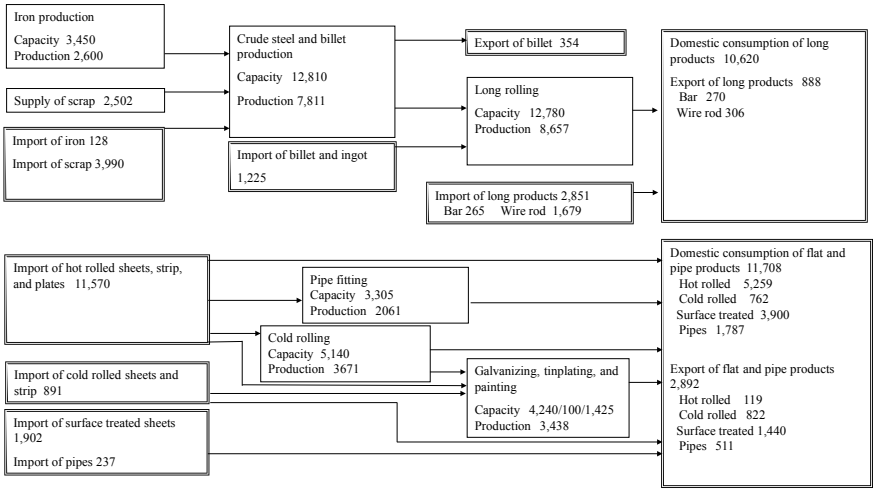

Fig. 2 Estimated flow of material in the Vietnamese iron and steel industry in 2016. *Note* The unit is thousand tons. The author assumed that 65% of galvanized sheet is made from cold rolled coil and that 35% of galvanized sheet is made from hot rolled coil based on discussion with the executives of a flat rolled sheet company
Source Author compilation from South East Asia Iron and Steel Institute (2017)

(the world's largest producer with 831.7 million tons) or Japan (the world's second largest producer with 104.7 million tons; World Steel Association, 2018). However, Vietnam is the largest steel producer among the six South East Asian economies, although it still had the lowest gross domestic product among them.[7] Moreover, Vietnam had the lowest crude steel production before 2003. These numbers illustrate the degree and speed of Vietnam's steel production growth. The country consumed 21.6 million tons of steel products in 2017, which exceeded domestic production and led to large imports.

Figure 2 illustrates the estimated material flow of the iron and steel industry in Vietnam. Until 2016, the flow between the long and flat/pipe sectors was decoupled. In the long sector, Vietnam hosted all three of the major processes; in the flat and pipe sector, however, the country had only cold rolling, surface treatment, and pipe

oxygen furnace. Melted steel is poured into a continuous casting machine and cast into semi-products. Third, the semi-products are hot rolled into variously shaped steel products. Some hot rolled coils are rerolled under regular temperatures. Moreover, some hot or cold rolled coils are surface-treated, such as through galvanizing and painting. An integrated system is suitable for large-scale production. The second is the semi-integrated system in which only crude steel and steel products are produced in the same complex. The major material is steel scrap, which is melted, refined in the electric arc furnace (EAF), and cast in the continuous casting machine. The rolling process is the same as in the integrated system. The semi-integrated system is relatively suitable for medium and small-scale production.

[7] World Bank Open Data.

fitting. There were no ironmaking, steelmaking, or hot rolling processes within the country until the start of large-scale integrated production in 2017.

The Vietnamese iron and steel industry increased its production under trade liberalization while competing with imported products. A tariff of 40% was imposed on imported bar and surface-treated sheets until the first half of the 2000s. However, the tariff rate reduced rapidly thereafter due to Vietnam's commitment to international economic integration (Kawabata 2016a, pp. 34–35). Vietnam joined the WTO in 2007 and participated in various regional free trade agreements through the ASEAN Economic Community and as Trans-Pacific Partnership Agreements. Steel trade was liberalized together with many other items. Only temporal protection measures were executed against high import penetration, especially from China. For example, Vietnam imposed safeguard measures in 2016 with a limited duration.

What types of enterprises are driving this development? Table 1 shows the market shares of the major types of enterprises by product category in 2016. In the long products market, the top seller was a private joint stock company, Hoa Phat Group (HPG). The private enterprises' sales share was 44.7%, while that for SOEs, foreign joint ventures with SOEs, and foreign enterprises contributed 21.1%, 17.5%, and 16.7%, respectively (Vietnam Steel Association [VSA] 2017). In the surface-treated sheets market, the top seller was a private joint stock company, Hoa Sen Group (HSG). The private enterprises' sales share was 66.7%, while the SOEs, foreign joint ventures, and foreign enterprises contributed 2.5%, 8.2%, and 22.6%, respectively. In the cold rolled sheets market, the top seller was POSCO Vietnam from South Korea. The sales share of foreign enterprises was 84.3%, while SEOs contributed 15.6% (VSA 2017). Clearly, private and foreign enterprises had become major producers.

Table 1 Market shares of major types of enterprises by product category in 2016

Product category	Sales share (physical term)				Top seller and its sales share
	SOEs under Vnsteel	Private	JVs between Vnsteel and foreign enterprises	Foreign enterprises	
Long products	21.1%	44.7%	17.5%	16.7%	Hoa Phat Group (private): 22.2%
Surface-treated sheets	2.5%	66.7%	8.2%	22.6%	Hoa Sen Group (private): 32.3%
Cold rolled sheets	15.6%	–	–	84.3%	POSCO Vietnam (foreign): 50.3%

Note SOE=state-owned enterprise; JV=joint venture; Vnsteel=Vietnam Steel Corporation
Source Author compilation from Vietnam Steel Association (2017)

4 Decline of SOEs: Rapid Reduction in State Subsidies and Slow Reform of Ownership and Management

Vietnam Steel Corporation (Vnsteel) was established as a general SOE in 1990 as part of the reform agenda to move toward an open, market-oriented economy. All steel SOEs became business units of Vnsteel. Vnsteel was considered as a unified agent of industrial development and the implementer of industrial policies.

However, Vnsteel's technical, managerial, and financial capabilities were too weak to institute a modern iron and steel industry in Vietnam. Moreover, the SOEs' industry promotion contradicted the competitive and open policy direction under Doi Moi policy.[8] In Vietnam, entry into the steel industry was liberalized as part of the market-oriented reforms.

Under such conditions, Vnsteel had no choice but to draft a cautious plan for expansion. The government approved the master plan for industrial development in 2001 (The Prime Minster of the Government, Decision No. 134/2001/QĐ-TTg). In this plan, the construction of a large-scale integrated complex was postponed until after 2012. Instead, Vnsteel decided to make efforts to construct a semi-integrated EAF mill for long products and rolling companies in the flat sector. This plan stipulated preferential treatment such as funding from the state, Official Development Assistance funds, preferential loans from the development fund, and governmental guarantees for equipment purchases.

Among these plans, the installation of the EAF mill succeeded. Southern Steel Corporation, Vnsteel's subsidiary in the southern region, became a major producer and profit-maker. However, the other projects continued with bumps and detours.

In the long sector, Vnsteel's projects were delayed due to poor funding, bureaucratic interference, and weak bargaining power. Thai Nguyen Iron and Steel (TISCO), a small integrated producer within Vnsteel Group, started its expansion project in 2007 and planned to complete it by 2010. However, the construction was delayed and stopped. Although the investment cost was expected to be 237 million USD in the beginning (The Prime Minster of the government, Decision No. 145/2007/QĐ-TTg), it expanded to about 400 million USD, and half of the cost was already disbursed.[9] Vnsteel entered into serious negotiations with a Chinese engineering company regarding reviving the construction. Another project in the long sector, Viet-Trung Metallurgy and Mineral (VTM) got a license in 2006, with its completion scheduled for 2008. However, in reality, the factory began operations in 2014. Its investment cost expanded from 150 million USD to 338 million USD.[10] Although the company made a profit in 2017 with the assistance of a safeguard policy, the

[8]Doi Moi means "reform" in Vietnamese. The Doi Moi policy is a series of market-oriented Vietnamese economic reforms since 1986.

[9]Interview with a deputy general director of TISCO, August 5, 2014..

[10]Interview with a general director of VTM, August 15, 2015.

heavy financial cost hiked its production cost. Thus, TISCO and VTM are among the 12 non-performing projects listed by the Ministry of Industry and Trade.[11]

In the flat sector, the newly instituted small cold rolling companies could not stay competitive. As Sect. 5 shows, private enterprises rapidly expanded their businesses in the surface-treated sheets market. They also installed small cold rolling mills and made cold coils for their own use. Moreover, POSCO Vietnam from South Korea and China Steel Sumikin Vietnam from Taiwan and Japan installed large-scale cold rolling mills. Phu My Flat Steel and Ton Nhat Flat Steel, under Vnsteel, failed to attract customers.

Moreover, Vnsteel aborted its large-scale projects in the flat sector. It negotiated with companies in India and Italy to construct hot rolling plants and an integrated steel complex, and it established a joint venture company for hot rolling. However, the negotiations did not succeed and the plans did not proceed.

The Vietnamese government had almost no involvement with Vnsteel, which was headed for trouble. There were two aspects to this indifference.

On the one hand, the government did not give preferential treatment to Vnsteel. The Vietnamese government tried to reinforce large-scale SOEs by instituting state economic groups (SEGs) in some industries, such as shipbuilding (Vu-Thanh 2017, p. 87). However, the iron and steel industry was not a subject of the SEGs. The master plan for the steel industry was renewed three times after 2001. In the second plan in 2007, however, private and foreign enterprises owned more than half of the projects. All preferential treatment for Vnsteel disappeared (The Prime Minster of the government, Decision No. 145/2007/QĐ-TTg). In international trade policy, as described in Sect. 3, the tariff rates for steel products were reduced in accordance with the WTO and various free trade agreements. The prohibition of 100% foreign equity capital in the steel industry was removed in the 2000s.

On the other hand, the Vietnamese government did not reform Vnsteel's ownership sufficiently, that is, through privatization or reduction of the state's ownership share. Vnsteel was equitized in September 2011, but the state maintained 90% ownership. Worse still, the publicly offered 9.7% ownership did not have sufficient bidders.[12] After the initial public offering, Vnsteel tried to allocate 29% of its shareholdings to strategic investors. The executives tried to negotiate with foreign steel enterprises, including Nippon Steel Sumikin, but they failed.[13] In 2017, the Ministry of Industry and Trade kept 93.93% of Vnsteel's equity.

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[11] "Ministry of Industry and Trade facing 12 loss-making projects," *dtinews*, February 9, 2017 (http://dtinews.vn/en/news/018/49405/ministry-of-industry-and-trade-facing-12-loss-making-projects.html, retrieved on May 31, 2020).

[12] "Cổ ph`ân hóa VNSTEEL: Thép đã tôi th´ê …á?" (Equitization of VNSTEEL), *AN NINH TI`ÊN TỆ (ANTT)*,

May 8, 2017 (http://antt.vn/co-phan-hoa-vnsteel-thep-da-toi-the-a-8785.htm, retrieved on September 2, 2017).

[13] "Vnsteel senryaku partner sagashi de nihon kigyo wo homon" (Vnsteel's Executive visited Japan to find strategic partners), *Viet-jo.com*, November 4, 2011 (https://www.viet-jo.com/news/economy/110929052607.html, retrieved on May 31, 2020).

Vnsteel recorded a deficit for three consecutive years since 2012. In 2017, the government finally adopted a policy to sell a majority of its ownership of Vnsteel.[14] However, the sale of equity is not progressing even in 2020, because some subsidiaries such as TISCO are weak regarding competitiveness and have heavy debts. Thus, it is not rational to bundle high-performing subsidiaries such as Southern Steel Corporation with troubled subsidiaries such as TISCO.

The Vietnamese government did not support its SOEs, unlike South Korea and Taiwan in the past and China currently. Nevertheless, it did not privatize the SOEs, in contrast with Russia and the Eastern European countries after the collapse of their command and control economies. Thus, Vnsteel continued its quantity-oriented investment, operating as an SOE that incorporates corporate governance and organizational behavior. However, it installed only small-scale uncompetitive factories because it could not mobilize huge amounts of capital.

In essence, SOEs could not become major producers in Vietnam's iron and steel industry during the country's transition into a market economy. However, ironically, the failure of Vnsteel in becoming a giant SOE was a good condition for the steady development of the iron and steel industry, because it left room for growth among private and foreign enterprises.

5 Emergence of Private Enterprises: Catch-Down and Market Creating Innovation

Since the 2000s, local private steel enterprises have emerged in Vietnam and expanded their market share. Among these, HPG in the long sector and HSG in the flat sector grew significantly.

HPG, a top seller in the long sector, was originally a corporate group known for construction, construction machinery, and furniture manufacturing. The company first installed the rolling process in the latter half of the 1990s and then built an electric furnace; in 2009, it launched the Hoa Phat Iron and Steel Complex in the northern region with a small integrated production system for long products. The Hoa Phat Complex was the first new (green field) integrated complex in Vietnam after the start of Doi Moi. Although it was not a coastal factory, its riverside location and facility layout was well prepared for reasonable logistics from raw material loading to product shipment. It had three BFs with internal volumes of 380, 520, and 580 m^3.

[14] "406 SOEs under divestment: exciting opportunities for investors," *Vietnam Investment Review*, August 26,
2017 (http://www.vir.com.vn/406-soes-under-divestment-exciting-opportunities-for-investors.html, retrieved on January 14, 2019); "Vietnam to divest in 406 state owned enterprises by 2020," *Vietnam Briefing*, August 30, 2017
(http://www.vietnam-briefing.com/news/vietnam-sell-stakes-137-state-owned-enterprises-2020.html/, retrieved on January 14, 2019).

Its crude steel production capacity was 2 million tons.[15] HPG also owned an iron ore mine with 40 million tons in reserves in the northern region,[16] which supplied about half of its needs for iron ore. The company instituted cost competitiveness due to vertical process integration from raw materials to iron and steel products. Moreover, HPG made steel pipes, and it began operating cold rolling and surface treating lines in 2018.[17]

HSG, the top seller of surface-treated sheets, started its business from a steel sheets sales shop in 1994. It promoted backward business integration through sales, color coating, galvanizing, and finally cold rolling. Although HSG started its business in the southern region, it has steel factories across the country. Its total capacity was 1.68 million tons for cold rolling, 2.28 million tons for galvanizing, and 660 thousand tons for color coating in 2017 (HSG 2016–2017, pp. 34–35). Additionally, HSG installed factories to produce steel pipes, plastic pipes, and other plastic construction materials.

HSG is characterized by its sales-oriented behavior. It directly owns distribution-retail branches, the number of which surpassed 100 in 2010–2011 and reached 371 by the end of 2017 (HSG 2016–2017, pp. 44–45). These branches concentrate on marketing surface-treated sheets (galvanized sheet, 55% Al-Zinc coated sheets, and color coated sheets) for the roofs and walls of houses, factories, and warehouses. HSG's branches sell not only steel sheets but also steel pipe and plastic construction materials, and they supply roll forming services for fabricating steel sheets into roof and wall parts. Clients favor HSG because it offers availability through low prices and a variety of products and services.

However, HPG and HSG do not necessarily have advanced technology. Rather, the opposite is true.

HPG has made a unique technology selection. It understood that it had limitations in its capital mobilization and technical capabilities, as well as in the market size of Vietnam. Therefore, despite its small scale, HPG tried to maintain cost competitiveness by improving its integrated production structure. Specifically, under the global price hikes of iron ore, HPG developed a small but captive mine and pelletizing plant to lower the material cost. In the ironmaking and steelmaking processes, it introduced proven small-sized facilities, as similar facilities had proven to be effective in China, to save investment costs. On the other hand, in the rolling process, it maintained quality by introducing world standard equipment from Italy. Thus, HPG decided to take advantage of downsized, downgraded technologies for low-cost production.

In contrast, HSG put its effort into marketing. The company responded to customers' needs through a directly managed sales network across the country and quickly distributed low-priced, surface-treated steel sheets to every corner of the country. The quality of HSG's pre-painted steel roof is not necessarily higher than

[15]The specifics of Hoa Phat Complex were provided to the author through a company presentation in a meeting with the Hoa Phat Group, August 17, 2018.

[16]Interview with the executive of HPG, August 8, 2014.

[17]HPG website (http://www.hoaphat.com.vn/en/hoa-phat-steel-sheet-company-limited/, retrieved on October 27, 2018).

that of traditional roof tiles. Moreover, HSG's sheets do not embody higher technology compared with that of foreign enterprises in the production of surface-treated sheets for automobile bodies. Nevertheless, availability anywhere in the country, low prices, and shortened construction periods were more important for Vietnamese customers. This is because, in Vietnamese local custom, the clients specify their steelmakers when building houses and factories. Moreover, by spreading its captive shop network, HSG could directly address its customers. Thus, HSG greatly stimulated construction demand in urban and rural areas.

HPG selected appropriate technology and catch-down innovation (Marukawa 2016), while HSG carried out the primitive stage of disruptive and market creating innovation at the base of the pyramid (Hart and Christensen 2002; Christensen et al. 2004, Chap. 9; Christensen and Bever 2014). What we should learn from the cases of HPG and HSG is that high-level technology is not necessarily the key for success in a developing economy. What is important is supplying a solution for a customer's "job to be done" (Christensen et al. 2004). For this purpose, companies should adopt appropriate technology and business processes.

However, due to the growth of the Vietnamese market, it seems difficult for HPG and HSG to maintain their market share with only their current technologies and business processes. Both companies have plans to install a larger-scale integrated iron and steel complex with state-of-the-art technologies. HPG began construction on a new complex with a 4.8 million ton capacity in the Dung Quat Economic Zone in the central coastal area, while HSG's plan faltered. HPG's planned rolling capacity is 3.5 million tons for hot coil and 2 million tons for bar/wire rod.[18] In an expanded and more sophisticated steel market, competition with imported steel products and foreign enterprises with huge financial resources and better technology is a challenge for local enterprises.

6 Foreign Enterprise Investment: The Step-by-Step and Leap-Frogging Approaches

The last group this study investigates is foreign enterprises. There are various types of foreign enterprises in the Vietnamese iron and steel industry. This section focuses on two companies, Kyoei Steel from Japan and Formosa Plastic Group (FPG) from Taiwan, which took contrasting approaches toward corporate growth.

Kyoei Steel instituted Vina Kyoei Steel (VKS) as a joint venture with Vnsteel in 1994 in the southern region.[19] Similar to other joint ventures from Australia, Singapore, Taiwan, and so on, VKS was a rolling company that produced bar and wire rods. VKS faced Vietnam's special market environment, which was completely different

[18] Specifics of the Hoa Phat Dung Quat Complex were provided to the author through a company presentation in a meeting with Hoa Phat Group, August 17, 2018.

[19] The following two paragraphs are based on records of interviews with Vina Kyoei Steel from 2000 to 2018.

from what Kyoei Steel faced in Japan. In Vietnam, many bars and wire rods are used for individual houses. Moreover, a client specifies steel producers, as mentioned in Sect. 5. To adapt to a housing market with such features, VKS maintained high product quality and detailed services much above the average in Vietnam at that time. It achieved product quality by careful selection of semi-products, use of rolling machines made in Japan, and intensive training for employees. To provide a comprehensive service, sales agents had to act according to VKS's service policy. To that end, VKS emphasized building a long-term, trustworthy relationship with agents. For example, VKS grasped agents' cash flows and inventory situations, and set prices in line with their interests. In addition, it established a brand called "Japanese Steel" by using broadcast TV commercials and other advertising measures. Thus, VKS's products attracted premium prices in the market.

However, due to pressure from Vnsteel for dividends, the joint ventures faced difficulty in making capital expenditures to expand their capacity. In this case, VKS took incremental approach. First, it improved its production capacity 1.5 times through continuous equipment improvements and production controls without huge expenditure. Second, VKS successfully installed EAF and a new rolling machine, and it became a semi-integrated company with a capacity of 650 thousand tons of crude steel and 950 thousand tons of rolled products in 2015. Moreover, between 2012 and 2018, Kyoei Steel acquired one rolling company and one EAF company in the northern region. Among the enterprises in the long sector, VKS (ranked fourth in the sales ranking), Kyoei Steel Vietnam (tenth), and Vietnam Italy Steel (eighth) became members of Kyoei Steel group in 2018 (VSA 2017). Kyoei Steel established itself in the Vietnamese market through continuous efforts and contributed to the development of the long sector in the industry.

In contrast, it was difficult to attract foreign capital for a large-scale integrated iron and steel complex in Vietnam. First, Vnsteel failed in a joint venture with Tata Steel from India. Next, in the latter half of the 2000s, some projects were announced and subsequently did not materialize (Kawabata 2007, pp. 19–26). Tycoon Group from Taiwan underestimated the investment cost to get a license from the provincial government, and construction stopped at the piling stage. Conversely, Eminence Group from Taiwan announced a super large-scale project for a steel complex and urban development worth more than 30 billion USD, but it took no concrete actions. Vina Shin Group, one of the SEGs, tried to enter the iron and steel industry by creating a joint venture with Lion Group in Malaysia. However, the global financial crisis in 2008 and corruption among executives ended this plan. Even POSCO from South Korea, one of the top steel producers worldwide, failed to start construction due to the financial crisis. These projects resulted in lost business opportunities, leaving vast land vacant.

Finally, Formosa Ha Tinh Steel (FHS), a subsidiary of FPG, installed an integrated iron and steel complex in the central region. FHS obtained a project license from Ha Tinh Province in 2008 and acquired land that was formally planned as a location for Vnsteel. As FPG had no experience in the iron and steel industry, it invited Taiwan's China Steel Corporation and Japan's JFE Steel as minority shareholders. FHS planned to invest 10.5 billion USD in what would be the largest iron and steel

project in Vietnam.[20] It rolled its first hot rolled coil in 2015 and started operations of the first BF in 2017. FHS's capacity is 7.10 million tons of crude steel,[21] representing around 30% of Vietnam's capacity. The rolling capacity for hot coil is 5.2 million tons (Kawabata 2016a, p. 32). In 2016, Vietnam imported 11.45 million tons of hot coil (see Fig. 2). Technically, FHS can substitute over 60% of the imports. FHS has standard technologies for an iron and steel complex designed by Chinese, Japanese, and German engineering companies (Kawabata 2016a, pp. 31–33). In fact, FHS is expected to lead the Vietnamese iron and steel industry in the next stage of development.

However, FHS faced serious problems before the completion of construction.[22] In early 2016, 115 tons of fish died in the central coastal area, which hit the fishery industry in the central region. Citizens in all areas were shocked and worried about food safety. A spokesperson for FHS said on a TV program immediately after the incident, "We have to choose whether to catch fish and shrimp or build a modern steel industry." This statement resulted in wide opposition to FHS.[23] As a result of an investigation, in June 2016, FHS claimed responsibility, apologized, and announced that it would pay USD 500 million as compensation. The government announced that the fish died due to FHS's release of waste fluid. After that, critics concentrated on the government in terms of the legitimacy of FHS's licensing process and the Ministry of Natural Resources and Environment's failure to monitor FHS's construction process. FHS started the BF operation in 2017, after the postponement of one year.

Thus, Kyoei Steel and FPG have taken different approaches in adaptation to Vietnamese society. The former utilized a step-by-step approach, while the latter took a leap-frogging approach.

Kyoei Steel gradually accumulated its capability and adapted to the Vietnamese market. Through operations in Vietnam for more than two decades, VKS enhanced its Vietnamese employees' abilities to improve efficiency and established a reputation for high product quality. As VKS accumulated its technical and managerial capabilities, it could proceed through its backward integration in the steelmaking process without difficulty. After observing the success of VKS in the southern region, the parent company, Kyoei Steel, acquired local companies in the north.

In comparison, FPG tried to build a large-scale integrated steel complex from the beginning. The company invested huge amounts of funds, introduced a full deck of technology, and became the largest steel producer in Vietnam. However, FPG was not familiar with the steel industry and naturally had no experience with the construction

[20] FHS website (http://www.fhs.com.tw/Intro/cover03.html, retrieved on March 1, 2016).

[21] *Ibid*. FHS promotion video that the author watched in August 2018.

[22] This paragraph is based on some news reports, including "Vietnam suffers 50 major toxic waste scandals in Vietnam in 2016," *VnExpress*, December 30, 2016 (https://e.vnexpress.net/news/news/vietnam-suffers-50-major-toxic-waste-scandals-in-2016-3521238.html, retrieved on September 26, 2018); "Vietnam blames Formosa mill for fish kill," *Taipei Times*, July 1, 2016 (http://www.taipeitimes.com/News/front/archives/2016/07/01/2003650089, retrieved on September 26, 2018).

[23] "Rare rallies in Vietnam over mysterious mass fish deaths," *Reuters*, May 1, 2016 (https://www.reuters.com/article/us-vietnam-formosa-plastics-environment-idUSKCN0XS0U6, retrieved on September 26, 2018).

of a huge steel complex. Therefore, FHS caused a waste discharge accident, despite the global technology standards embodied in its production facilities. In addition, FHS's public relations with Vietnamese society since the incident have been rather negative. This suggests the importance of management and organizational maturity.

In the past decades, foreign companies such as VKS have contributed to the development of the Vietnamese steel industry. Moreover, FHS will contribute significantly if it manages to operate its large-scale complex normally in the future. FHS is necessary for the import substitution of hot coils in particular. However, there are necessary conditions to realize this contribution. Foreign-funded enterprises should conduct economic activities that meet the needs of the Vietnamese market, communicate well with Vietnamese citizens about social issues, and fulfill their social responsibilities.

The Vietnamese government's open-door policy was successful in essence. The government promoted foreign direct investment by approving 100% foreign ownership. Consequently, a steel company with a competitive edge was established under international economic integration, and steel production grew rapidly.

However, the Vietnamese government failed to implement the complementary policies necessary to accept large-scale foreign investment. The country has limited locations suitable for a large iron and steel complex. Therefore, even in a market economy, the government must properly accredit investment licenses. In addition, environmental control of large-scale steel factories requires proper government regulation and monitoring. The central and local governments in Vietnam lacked the ability to review large-scale steel projects. Thus, troubled projects such as Tycoon and Vinashin occupied coastal locations for a long time without producing value. These locations could otherwise be used for high-quality ports and factories. Moreover, the government failed to monitor FHS's environmental management adequately.

7 Conclusion

The iron and steel industry in Vietnam was developed by private and foreign enterprises under trade and investment liberalization. This example in the iron and steel industry offers important lessons for industrial development under international economic integration.

First, nurturing the iron and steel industry through high protectionism and state ownership is not realistic under international economic integration. However, this does not mean that the government should simply eliminate trade protections and SOE support. Inefficient SOEs should not be left as they are. In addition to eliminating state protection, it is necessary to reform the SOEs' corporate governance and management.

Second, for local private enterprises with inferior capital mobilization and technical capabilities to grow, entrepreneurial activity is necessary to choose technologies and products corresponding to the customers' "jobs to be done," based on local knowledge of the characteristics of the growing domestic market. Such technologies and products are not necessarily advanced and expensive. Through catch-down and/or

disruptive innovation in the base of the pyramid market, local private companies in developing countries can create markets and grow with the macro economy. Moreover, use of such technologies and sale of such products are rather unfamiliar for foreign companies due to their lack of local knowledge. This provides opportunities for local private enterprises.

Third, enterprises with foreign investment can demonstrate their strengths in areas that require international standards of technology and large-scale investment. With direct investment by foreign enterprises, developing economies can more quickly accumulate technical proficiency and capital. However, enterprises with foreign investment must adapt to the market characteristics of developing countries and fulfill their social responsibilities. Moreover, a developing country's government has to review and supervise large-scale projects, even in a market economy. Developing such administrative capacity for this purpose is an important task.

Finally, it is important to mention the relationship between this study and politics against international economic integration in the past few years. In today's world economy, especially in the steel industry, a storm of trade protectionism is brewing. This is exactly why we must emphasize that industrial development is possible under international economic integration. Development of the Vietnamese steel industry did not occur under protectionism; it occurred because the industry found opportunities and learned to compete as international economic integration progressed.

It is also necessary to state that industrial development cannot be realized through simple market adaptation and a laissez-faire approach. Enterprises require entrepreneurial behavior that meets local conditions, while the government is expected to formulate policies and actions to complement the role of the market and resolve social issues.

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Analysis of Rebuilding the Supply Chain in RCEP Region—From the Perspective of New-Economic Geography

Keisuke Kamada and Kentaro Yoshida

1 Introduction

Japanese manufacturing companies (hereinafter Japanese manufacturers) have been expanding their production networks in recent years, mainly in Southeast Asia. Especially since the ASEAN Economic Community (AEC)[1] was launched in 2015, Japanese manufacturers have been building supply chains in the ASEAN region, and their local production in those countries is increasing year by year. Therefore, procurement, production, and sales in optimum environments that match the characteristics of the societies, regional economies, and countries into which they have expanded have been assumed to be a greater importance for Japanese manufacturers than they did previously.

Thus, with drawing up management strategies for overseas development from a cross-border perspective becoming increasingly important for Japanese manufacturers, efficient logistics are needed for globalization of corporate activities. In other words, putting logistics arrangements in place that enables local cross-border supply chains function strengthens Japanese manufacturers' international competitiveness.

Previous works on prominent industrial clustering theory include Saxenians's "Theory of Regional Networks" (1994), Florida's "Theory of Learning Regions" (1995, 2008), and Porter's "Theory of Industrial Clusters" (1998). They argue that economic units, as seen through the lens of globalization, are shifting from the

[1] Economic community of 10 Association of Southeast Asian Nations (ASEAN) countries launched in December 2015. Barriers to economic activity in the area have been dismantled, with liberalization of investment, and trade in goods and services.

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previous "national states" to "regional areas", and regional disparities are widening, not only within countries but also across global regions. Globalization has broadened the geographic scope of physical items, money, information, and industrial production sectors as expected, with manufacturing industries that involve simple labor spreading to mainly Asian countries from a cost performance point of view. Elements of high value-added production are clustering and their activities moving forward in specific locations.[2]

For Japanese SMEs, in particular, aggressive overseas development of trade and investment like the large enterprises that have preceded them is an effective management strategy to secure new markets. This is because such an approach could be one of the measures against market contraction in Japan due to population decline, and also a growth strategy via development of sales channels to overseas markets where demand is set to increase. SMEs account for more than 99% of Japanese business establishments, with smaller manufacturers generating a proportion of added value that is equivalent to a half of all business establishments. It is also likely that the advanced technological capabilities of smaller manufacturers through Japanese-style management can be leveraged to allow them to link to the expansion of sales channels to growing overseas demand. In addition, in recent years, opening up new sales channels in tandem with overseas development has created opportunities for "Innovation" that leads to the development of new products and construction of new business models.[3] One of such previous studies, Chesbrough (2003, 2006) analyses that the approach of vertical integration ("Closed Innovation"), in which product development, manufacturing, and management are all carried out internally by a company, tends to raise costs, and that many prominent companies are achieving success by strategically adopting the concept of "Open Innovation", involving the creation of value through the organic integration of ideas from within and without the company, stimulating the innovation that accrues to the greatest benefit of the company2. From such reason as the background, overseas expansion of Japanese firms with a special mention of SMEs are expected to increase in the future.

One of the related previous research of which Baek (2016) suggests that encouragement of innovation locally via overseas development can have positive ripple effects on headquarters and factories in Japan Hayashi (2016). This effect can be expected everywhere. According to the Federation of Japanese Chambers of Commerce and Industry (FJCCIA) in ASEAN, the number of registrations of Japanese manufacturers has been increasing, rising from 5647 in June 2013 to 7130 in June 2017. As most major companies have already developed business in the region, the majority of new entrants are thought to be SMEs.

These SMEs have been aggressively developing business in Regional Comprehensive Economic Partnership (RCEP) member states.[4] In a manner that is almost as if these developments had been predicted, research that treats such industrial

[2] Yoshida (2020).

[3] Yoshida 2018).

[4] Singapore, Malaysia, Thailand, Indonesia, the Philippines, Brunei, Cambodia, Laos, Myanmar, Vietnam, China, Korea, Australia, New Zealand, and India.

agglomerations and dispersal academically as a form of "New-Economic Geography" (although know as "Spatial Economy") is conducted. As an overview, Krugman (1991) proposed a "core-periphery model", in which the decline of transportation costs and an increase in economics of scale contributes to firms clustering towards large markets, constructing the foundation for New-Economic Geography as a "mainstream economics" discipline. Zeng and Takatsuka (2016), based on the Krugman's model, explains that a "mobile capital" moving freely between nation-states is a significant characteristic of the "contemporary economics", a trend that started in the 2000s. Sato et al. (2011) introduced a model that incorporates an income effect and a pro-competitive effect, respectively, into Krugman's model. In addition to factors of soft aspects of "Innovation", upheavals in hard aspects, such as reduction of tariffs that will come about as a result of the conclusion of FTAs and EPAs, will greatly have a major impact in promoting overseas expansion of Japanese firms. This study, while conducting a survey on previous research, a novel aspect is sought by placing an emphasis on empirical research as one that is derived from Krugman's study. It is for that reason that we performed quantitative analysis by applying actual data, such as transport costs, to the Krugman's model, performing a comprehensive analysis which takes into account the political and economic situations of the RCEP member states of the time.

As a result of RCEP, custom duties have been reduced and scrapped in the regions, enabling Japanese manufacturers to further develop production structures at low cost. In "The Spatial Economy", Paul Krugman argues that lower transportation costs as a result of reductions in custom duties will enable manufacturers to engage in geographically multi-polar development in their overseas business development. He also says this will lead to gradual industrial agglomeration in the regions, followed by dispersion once a certain degree is reached. It is thought that these kinds of ripple effects strengthen companies' economic activities, and knock-on effects from these corporate activities are also desirable in the host countries. In this report, therefore, we outline the following analysis assuming RCEP to be a very hopeful framework to expand economic welfare in the Asia Pacific.

2 Analysis Perspective

ASEAN, as a principle of RCEP, plans to promote trade investment aiming for FTA/EPA beyond the existing "ASEAN plus one" framework. If RCEP exceeds ASEAN's existing degree of liberalization including ASEAN-Japan FTA/EPA, it will be a strong economic framework in tandem with development of supply chains in the region. We therefore examine how enactment of RCEP will benefit Japanese manufacturers' business development in the areas, given the fact that Japanese manufacturers are aggressively developing business in ASEAN countries, which have a combined population of over 600 million.

We analyze and examine what will be the optimal model for Japanese manufacturers' production allocation and location strategies by utilizing RCEP, which

includes import duty reductions in the regions as well as in Oceania. Our analysis centers on Japanese manufacturers' business development in ASEAN countries. We use "Spatial Economics", which employs traditional International Economics as well as Regional Economics and Urban Economics, which analyze regional characteristics overseas.

We also draw up an analogy with Japanese manufacturers' construction of global supply chains in the RCEP area based on examination of the analysis results. This research aims for quantitative analysis supplementing companies' ripple effect development while monitoring FTA/EPA development in the RCEP area. We seek to link this to significant policy proposals for Japanese manufacturers' future development in Asia.

As a result of RCEP coming into effect, we attempt to clarify how the conclusion of FTA/EPA between member states contributes in revitalizing Japanese manufacturers' business activities via agglomeration and dispersion in the areas. This attempt is based on the hypothesis that import duty reduction in FTA/EPA promotes Japanese manufacturers' overseas development.

3 Hypothesis

In this research, we conduct an empirical study on the movement of agglomeration and dispersion in Japanese manufacturers' business development into RCEP member states, based on "The Spatial Economy" developed by Paul Krugman and others[5].

According to Spatial Economics theory, dispersed markets will be formed when transportation costs are high, as trade between regions via transportation is difficult. The theory asserts that if transportation costs are reduced, agglomeration offers more benefits for industry than maintaining a state of dispersion. In other words, reductions in industrial goods transportation costs drive a cycle of "a state of dispersion to agglomeration and again to dispersion". In other words, reductions in industrial goods transportation costs cause competition effects to weaken, temporarily creating a state of full agglomeration. However, this causes inflation in the area concerned, leading again to dispersion.

Japanese manufacturers with production bases in Asia-Oceania will have to increasingly procure good quality intermediate goods from now on. Through further economic integration in the RCEP region, Japanese manufacturers are thought to expand their supply in the regions, helping the development of support industries as a result of construction and development of their supply chains.

To assess the significance of RCEP, we analyze Japanese manufacturers' overseas development and local industry agglomeration based on an agglomeration theory using Spatial Economics.

[5]Fujita, Masahisa & Krugman, Paul & Venables, Anthony J. "The Spatial Economy: Cities, regions, and international trade. The MIT Press."

The target countries in this research are limited to RCEP member states. In order to estimate optimal procurement, production, and sales in the RCEP region for Japanese manufacturers that will newly enter into the region, we examine the state of agglomeration and dispersion in these countries (we measure likelihood of agglomeration and dispersion, not actual change in the number of companies active in the area).

- Reviewing previous research based on Spatial Economics, we find that as a result of custom duty reductions due to FTA/EPA, industries that were initially dispersed due to higher transportation costs start to agglomerate in one location and disperse again when the agglomeration exceeds a certain level.
- There is room to assess whether this cycle causes production activity to snowball, but this could be the case in developing countries, where markets are currently expanding and continuing to develop. In this research, we assess whether conclusion of FTA/EPA among RCEP member states contributes to agglomeration and dispersion effects in the regions where Japanese manufacturers develop business operations.

4 Analysis Methodology: Krugman Model

Krugman assumes that "the desire to locate factories close to major markets" is a centripetal force (agglomeration force) that supports concentration of manufacturing industries, and that "workers' desire for access to items made by other workers" (workers tend to want to live close to factories) is a centrifugal force (dispersion force) that causes dispersion.

Krugman presents a general equilibrium theory-type of core and periphery model, considering factors such as "economies of scale", transportation costs, and labor mobility. The model assumes a country with two regions: East and West, and that there are two types of industries: agriculture and manufacturing.

Analysis definitions:

In the Krugman model, if the total number of agricultural workers (farmers) and manufacturing workers (workers) is standardized at 1, there are "$1 - \pi$" farmers and π workers. As farmers exist in East and West, each region has "$(1 - \pi)/2$" farmers, while Krugman assumes that workers are mobile and they can move to the region with higher real wages.

As noted above, the model takes the total number of workers to be "1", with the number of farmers divided equally between the two regions, assuming also that workers only exist in the East region. The share of factory workers among all workers is taken to be "π".

- East: 1/2 (farmers)
- West: 1/2 (farmers) + π (workers).

Table 1 Definitions of model variables

Variable symbol	Variable
τ	Reciprocal number of transportation costs
π	Exported share of manufactured goods
σ	Economies of scale

Based on the above, to assess agglomeration and dispersion of Japanese manufacturers in RCEP member states, we establish the formula below to obtain the estimated results of "the sustainability of the core-periphery pattern" as pointed out in the Krugman model.

$$K = \frac{\tau^{\pi\sigma}}{2}\left[(1+\pi)\tau^{\sigma-1} + (1-\pi)\tau^{-(\sigma-1)}\right]$$

First, we derive the variable "K" for each individual RCEP member state. Based on the Krugman model, we apply the following variables.

(1) "τ" denotes "the reciprocal number of transportation costs" to RCEP member states (normalized to a maximum of 1 and a minimum of 0.4. value 0 is applied when transportation cost data for the relevant year is not available in order to establish the chart)
(2) "π" denotes "the exported share of manufactured goods". Thus, the proportion of workers in secondary industry among all workers in each RCEP member state.
(3) "σ" denotes "economies of scale". Thus, emulating Krugman's article, it is set at "4" (*as the main purpose of this analysis is a trend analysis, generality can be guaranteed).

- The interpretation of the movement of the variable "K" on the dispersion and agglomeration trend is as follows. When an index K exceeds 1 on the rise ($K > 1$), "agglomeration" develops. From that point, when the index K starts to fall below "1", "dispersion" starts to be formed. When the index K upturns and exceeds "1", agglomeration develops (agglomeration in the dispersed locations). We verify the assumption of this dispersion and agglomeration cycle (Table 1).

Materials regarding transportation costs are taken from the JETRO surveys below where the maximum to minimum range of transportation costs are shown, and their average value is used. Fractions are rounded up.

- FY2000-2008: Surveys of investment-related costs in major cities and regions in Asia
- FY2009: 20th Survey of investment-related costs in major cities and regions in Asia

- FY2010-2015: 21st–26th comparative surveys of investment-related costs in major cities and regions in Asia and Oceania
- FY2016-2018: FY2016-2018 comparative survey of investment-related costs in Asia and Oceania
- International Labor Organization (ILO) statistics are used as source for number of workers in countries covered by the surveys associated with export shares of manufactured goods.

5 Empirical Analysis of Effects by Country

Utilization of FTA/EPA by Japanese manufacturers operating in ASEAN has been increasing year by year in both imports and exports. Effective use of FTA/EPA is a key management strategy issue for such companies.

Based on these assumptions, we assess the possibility of agglomeration and dispersion effect among Japanese manufacturers in the regions due to reductions in transportation costs as a result of the use of FTA/EPA (Fig. 1 and Table 2).

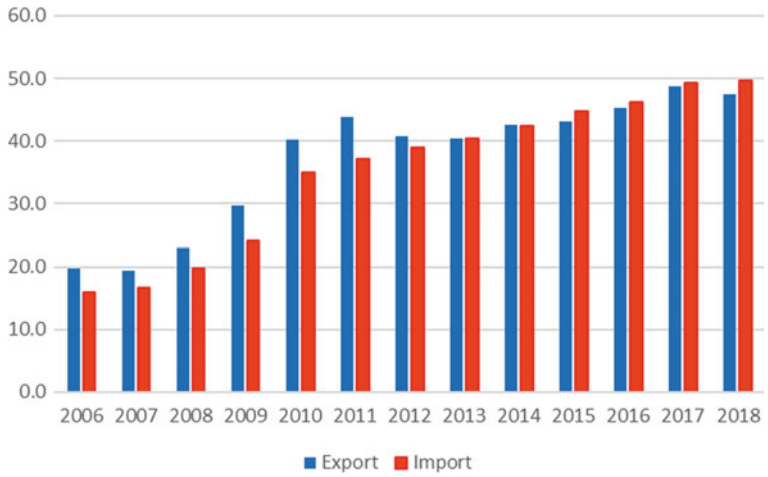

Fig. 1 Use of FTA/EPA by Japanese manufacturers active in ASEAN countries. *Unit %*. *Note* Figures for 2006–09 are for manufacturing only. Figures for later years are for all-industry *Source* Surveys of activity of Japanese manufacturers in Asia and Oceania (JETRO) for each fiscal year

Table 2 Use of FTA/EPA by Japanese manufacturers active in ASEAN countries

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Export	19.7	19.3	23.0	29.7	40.3	43.8	40.7	40.4	42.6	43.1	45.2	48.7	47.4
Import	16.0	16.7	19.7	24.1	35.0	37.2	38.9	40.4	42.4	44.7	46.1	49.3	49.6

Unit %

Results of analysis using Krugman model

《ASEAN10》

Indonesia

- Date joined ASEAN: August 1967
- Date Japan-Indonesia Economic Partnership Agreement (JIEPA) came into effect: 2008
- Date ASEAN-Japan Comprehensive Economic Partnership Agreement (AJCEP) came into effect: March 2018
- The movement of *K* (Fig. 2 and Table 3).

Analysis results

The index *K* gradually rose over 2003–2006. This suggests the possibility of agglomeration effect. It is not possible to assess the correlation with custom duty factor as JIEPA came into effect in 2008, however, it could have risen due to changes in the share of spending on manufactured goods. A major change during this period was that the Yudhoyono administration was inaugurated in 2004 and the country entered a phase of stability.

There was a possibility that Japanese manufacturers saw Indonesia as a stable, low-cost production base, leading to the formation of agglomeration. With JIEPA

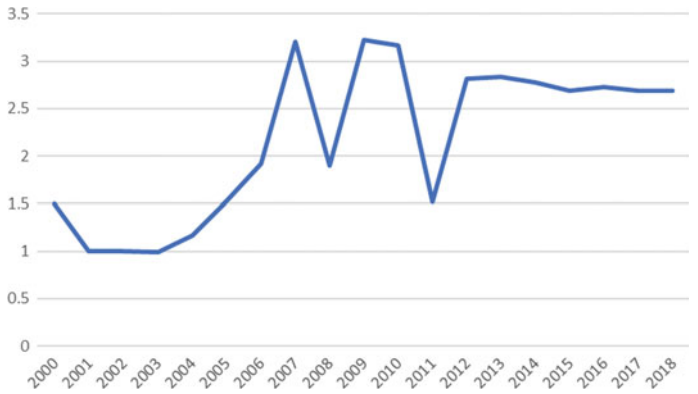

Fig. 2 The movement of *K* in Indonesia *Source* Author

Table 3 The movement of K in Indonesia

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Indonesia	1.50	1.00	1.00	0.99	1.17	1.53	1.92	3.20	1.90	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Indonesia	3.23	3.17	1.52	2.82	2.83	2.77	2.69	2.73	2.69	2.69

Source Author

coming into effect in 2008, transportation costs were reduced and the index *K* started to rise again heading into 2009.

In most other ASEAN countries, AJCEP came into effect in 2008–2009, and this could have led to agglomeration in the region due to development of supply chains mainly via the scrapping of custom duty in AFTA. Agglomeration continued through to 2010, when the critical mass was reached, resulting in a temporary peripheral dispersion effect.

A phase of stable agglomeration started in 2012, and there is a degree of consistency in the chart even when compared with the current situation, where Japanese auto-related companies are aggressively expanding business, with the region remaining attractive as a production base with a population of over 200 million.

Malaysia

- Date joined ASEAN: August 1967
- Date Japan-Malaysia Economic Partnership Agreement (JMEPA) came into effect: 2006
- Date AJCEP came into effect: 2009
- The movement of *K* (Fig. 3 and Table 4).

Analysis results

We cannot confirm any notable changes around 2006 when JMEPA was concluded, however, the index *K* rose sharply from 2011. This could be because transportation

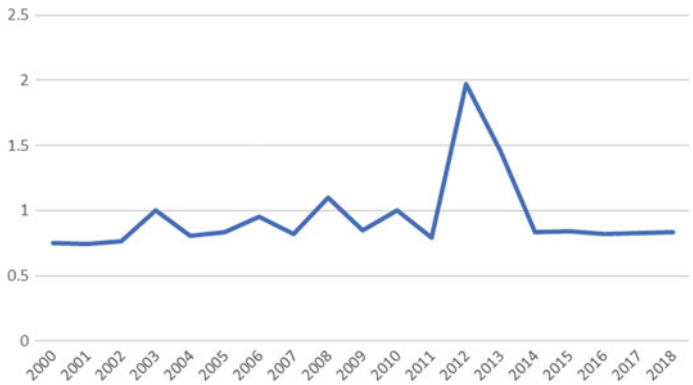

Fig. 3 The movement of *K* in Malaysia *Source* Author

Table 4 The movement of K in Malaysia

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Malaysia	0.75	0.75	0.77	1.00	0.81	0.84	0.96	0.82	1.10	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Malaysia	0.85	1.00	0.80	1.97	1.46	0.84	0.84	0.82	0.83	0.84

Source Author

costs have been reduced with AJCEP coming into effect in 2009, and agglomeration effect took place through to 2012.

We could also reflect the fact that Japan was the biggest investing country in manufacturing industry (approval basis) in 2012. However, there remains a slight doubt in the accuracy of the assessment, as the rise in a single year was very sharp. It is also possible that limited sample data on transportation costs in the year concerned may have had an extreme impact.

The Philippines

- Date joined ASEAN: August 1967
- Date Japan-Philippines Economic Partnership Agreement (JPEPA) came into effect: 2008
- Date AJCEP came into effect: 2010
- The movement of *K* (Fig. 4 and Table 5).

Analysis results

There is a possibility that Cebu was impacted by JPEPA which came into effect in 2008 and AJCEP in 2010. Many Japanese manufacturers entered into the Philippines by the second half of the 2000s, and in Manila industrial estates were in saturation tendency.

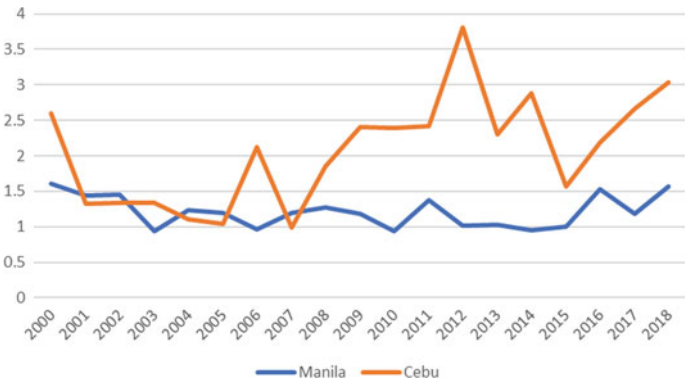

Fig. 4 The movement of *K* in the Philippines *Source* Author

Table 5 The movement of K in the Philippines

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Manila	1.61	1.44	1.45	0.94	1.24	1.20	0.97	1.20	1.27	
Cebu	2.60	1.33	1.34	1.34	1.11	1.04	2.12	0.99	1.85	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Manila	1.19	0.94	1.37	1.02	1.02	0.95	1.00	1.53	1.19	1.56
Cebu	2.41	2.40	2.42	3.80	2.30	2.87	1.57	2.18	2.66	3.04

Source Author

Companies seeking to establish production bases in the Philippines, therefore, developed operations widely within the Cebu island region. The index *K* in Cebu switched to a rising trend exceeding 1 in 2008, when JPEPA, the Philippines' first bilateral FTA, came into effect. In 2011, a year after 2010, when AJCEP came into effect, it rose again, which could have resulted in agglomeration.

Subsequently, Cebu saw dispersion, followed by agglomeration in the areas, which was in line with the agglomeration and dispersion pattern pointed out in the Krugman model.

Singapore

- Date joined ASEAN: August 1967
- Date Japan-Singapore Economic Partnership Agreement (JSEPA) came into effect: 2002
- Date AJCEP came into effect: 2008
- The movement of *K* (Fig. 5 and Table 6).

Analysis results

The index *K* rose sharply over 2009–2010. This could have been due to JSEPA, which resulted in no changes in 2002, but with AJCEP coming into effect in 2008 caused transportation costs to decline. This could have created a foundation for agglomeration effect, and companies developed business all over Singapore as it was a small country.

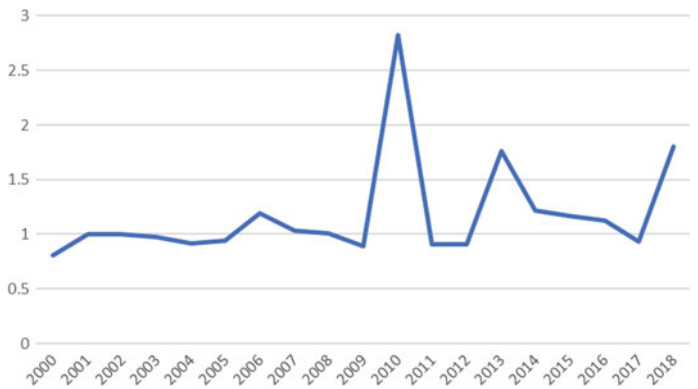

Fig. 5 The movement of *K* in Singapore *Source* Author

Table 6 The movement of K in Singapore

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Singapore	0.80	1.00	1.00	0.97	0.92	0.94	1.19	1.03	1.01	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Singapore	0.89	2.82	0.91	0.91	1.76	1.22	1.17	1.12	0.93	1.80

Source Author

However, there remains a slight doubt in the accuracy of the assessment, as the rise in a single year was very sharp. It is also possible that limited sample data on transportation costs in the year concerned may have had an extreme impact.

Thailand

- Date joined ASEAN: August 1967
- Date Japan-Thailand Economic Partnership Agreement (JTEPA) came into effect: 2007
- Date AJCEP came into effect: 2009
- The movement of *K* (Fig. 6 and Table 7).

Analysis results

Thailand has attracted attention as the lead candidate in the China plus one business model. The chart can also be seen as showing a real cycle of agglomeration to dispersion and back to agglomeration.

However, from the second half of 2007, when JTEPA came into effect, until 2011 (AJCEP came into effect in this period in 2009), the index *K* was below "1", suggesting the possibility of relative dispersion force in effect. However, we were unable to establish a correlation in this assessment between agglomeration and FTA/EPA (JTEPA in 2007, AJCEP in 2009) coming into effect.

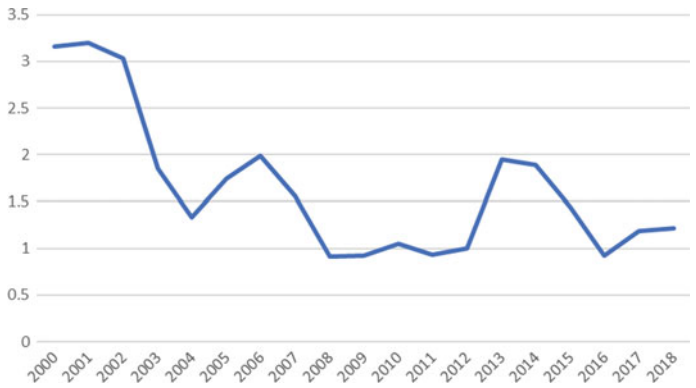

Fig. 6 The movement of *K* in Thailand *Source* Author

Table 7 The movement of K in Thailand

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Thailand	3.16	3.20	3.03	1.85	1.33	1.74	1.98	1.56	0.92	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Thailand	0.92	1.05	0.94	1.00	1.95	1.89	1.44	0.92	1.19	1.21

Source Author

Brunei

- Date joined ASEAN: January 1984
- Date Japan-Brunei Economic Partnership Agreement (JBEPA) came into effect: 2008
- Date AJCEP came into effect: 2009
- Analysis results: We reluctantly gave up analysis as we were unable to perform a fair assessment due to lack of data.

Vietnam

- Date joined ASEAN: July 1995
- Date Japan-Vietnam Economic Partnership Agreement (JVEPA) came into effect: 2009
- AJCEP: 2009
- The movement of *K* (Fig. 7 and Table 8).

Analysis results

JVEPA and AJCEP came into effect in 2009. As in Hanoi the index *K* started to rise in 2009, agglomeration in business development could have taken place in the region. Also in Ho Chi Minh City, the index *K* exceeded "1" in 2010–2011, suggesting that the agglomeration force gradually had an impact.

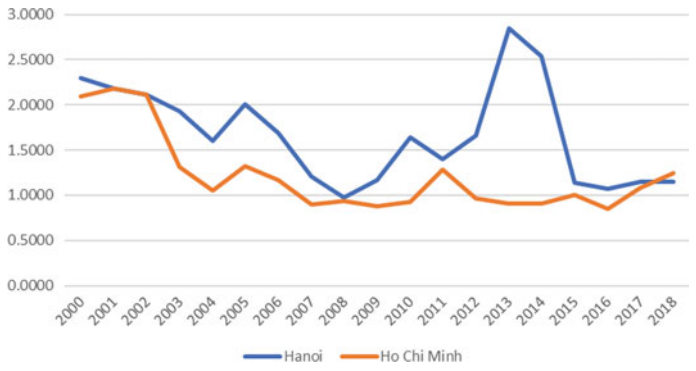

Fig. 7 The movement of *K* in Vietnam *Source* Author

Table 8 The movement of K in Vietnam

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Hanoi	2.30	2.18	2.11	1.93	1.60	2.01	1.69	1.21	0.97	
Ho Chi Minh	2.09	2.18	2.11	1.31	1.05	1.32	1.17	0.90	0.94	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hanoi	1.17	1.64	1.40	1.66	2.85	2.54	1.14	1.07	1.15	1.15
Ho Chi Minh	0.88	0.92	1.28	0.96	0.91	0.91	1.00	0.85	1.08	1.25

Source Author

Vietnam has attracted attention as a candidate country for "China plus one" and "Thailand plus one" business models. As of 2009, Vietnam had concluded a bilateral FTA/EPA only with Japan, suggesting that Japanese manufacturers had a major edge in terms of agglomeration locally and business development in Vietnam benefitting from transportation costs in trade. An environment may have been formed in which Japanese manufacturers could agglomerate in Vietnam as a plus one country, especially around Hanoi.

Laos

- Date joined ASEAN: July 1997
- Bilateral FTA/EPA with Japan: None
- Date AJCEP came into effect: 2008
- Analysis results: We reluctantly gave up analysis as we were unable to perform a fair assessment due to lack of data.

Myanmar

- Date joined ASEAN: July 1997
- Bilateral FTA/EPA with Japan: None
- Date AJCEP came into effect: 2008
- The movement of *K* (Fig. 8 and Table 9).

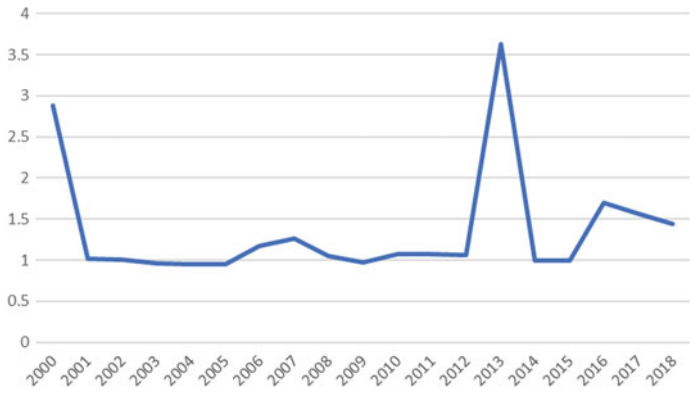

Fig. 8 The movement of *K* in Myanmar *Source* Author

Table 9 The movement of K in Myanmar

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Myanmar	2.88	1.01	1.01	0.96	0.95	0.95	1.18	1.26	1.05	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Myanmar	0.98	1.07	1.07	1.06	3.62	1.00	1.00	1.69	1.57	1.44

Source Author

Analysis results

The index *K* was below "1" in 2001–2012 (apart from 2007). This could suggest the possibility that Japanese manufacturers that developed business in Myanmar did not gather in major cities, with a strong drive to disperse in surrounding areas.

The index *K* rose sharply in 2012–2013. The transition from military rule to democratic government under the Thein Sein administration at the end of March 2011 could have impacted "economies of scale" in Myanmar, resulting in agglomeration of Japanese manufacturers developing in the country.

However, there remains a slight doubt in the accuracy of the assessment, as the rise in a single year was very sharp. It is also possible that limited sample data on transportation costs in the year concerned may have had an extreme impact.

Cambodia

- Date joined ASEAN: April 1999
- Bilateral FTA/EPA with Japan: None
- Date AJCEP came into effect: 2009
- Analysis results: We reluctantly gave up analysis as we were unable to perform a fair assessment due to lack of data.

China, Korea, Australia, New Zealand and India

China

- Bilateral FTA/EPA with Japan: None
- Date when ASEAN-China FTA (ACFTA) came into effect (custom duty on goods was abolished): 2010 (Thailand, Indonesia, Brunei, Malaysia, the Philippines and Singapore), 2015 (Vietnam, Laos, Myanmar and Cambodia)
- The movement of *K* (Fig. 9 and Table 10).

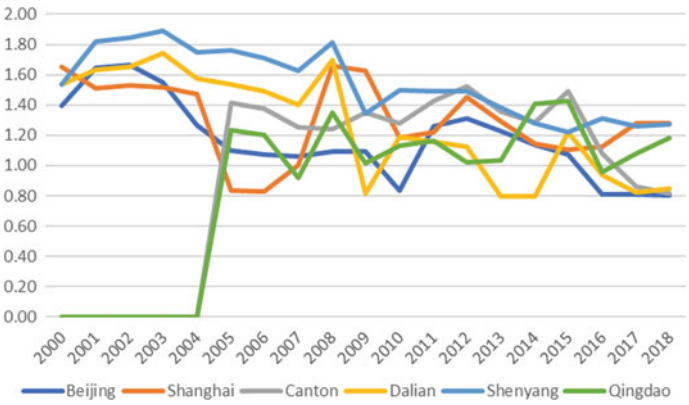

Fig. 9 The movement of *K* in China *Source* Author

Table 10 The movement of K in China

Year	Beijing	Shanghai	Canton	Dalian	Shenyang	Qingdao
2000	1.40	1.65	0.00	1.54	1.54	0.00
2001	1.64	1.51	0.00	1.63	1.82	0.00
2002	1.66	1.53	0.00	1.65	1.85	0.00
2003	1.55	1.52	0.00	1.74	1.89	0.00
2004	1.26	1.47	0.00	1.58	1.75	0.00
2005	1.10	0.84	1.41	1.54	1.76	1.23
2006	1.07	0.83	1.37	1.49	1.71	1.20
2007	1.06	1.00	1.25	1.40	1.63	0.92
2008	1.09	1.66	1.24	1.70	1.81	1.35
2009	1.09	1.63	1.35	0.81	1.34	1.01
2010	0.84	1.18	1.28	1.19	1.50	1.13
2011	1.26	1.22	1.43	1.16	1.49	1.17
2012	1.31	1.45	1.53	1.13	1.49	1.02
2013	1.23	1.29	1.36	0.80	1.38	1.03
2014	1.14	1.14	1.29	0.80	1.28	1.41
2015	1.07	1.10	1.49	1.22	1.22	1.43
2016	0.81	1.13	1.08	0.94	1.31	0.96
2017	0.81	1.28	0.86	0.82	1.26	1.08
2018	0.81	1.28	0.82	0.85	1.27	1.19

Source Author

Analysis results

As there was no FTA/EPA between Japan and China, through indirect effects of ACFTA which came into effect in 2010 (China with initial ASEAN members), the agglomeration force could have had an impact in all areas measured with varying degrees in that year.

However, we can see possible effect of dispersion force towards 2016 in the graph of all measured regions excluding Shenyang, following the expansion of ASEAN in 2015. A conceivable hypothesis is that the impact of the agglomeration force triggered by the original five members of ASEAN (Indonesia, Malaysia, Philippines, Singapore and Thailand) reached a limit in that year (2015), and a periphery dispersion force arose in the countries that joined ASEAN later (Cambodia, Laos, Myanmar and Vietnam), where Japanese manufacturers rapidly built supply chains.

Dalian, Shenyang, Guangzhou, and Qingdao resemble each other in terms of the movement of the index *K*. In Guangzhou and Qingdao in particular, companies were initially at significantly dispersed state. Subsequently, however, as the index *K* exceeded "1", they may have swung to a significantly agglomerated state.

The fact that the cycle shown by the Krugman model occurred simultaneously in several regions indicates the significance in verifying the model.

Korea

- Bilateral FTA/EPA with Japan: None
- Date ASEAN-Korea FTA (AKFTA) came into effect: 2007
- The movement of *K* (Fig. 10 and Table 11).

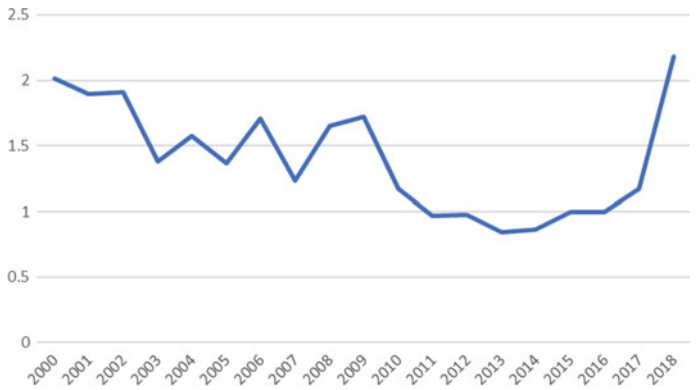

Fig. 10 The movement of *K* in Korea *Source* Author

Table 11 The movement of K in Korea

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Korea	2.02	1.90	1.91	1.38	1.58	1.37	1.71	1.23	1.65	
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Korea	1.72	1.17	0.97	0.98	0.85	0.87	1.00	1.00	1.17	2.18

Analysis results

The index *K* rose from 2007, when AKFTA came into effect, through to 2008, suggesting that agglomeration effects may have been significant. However, there were also similar rises and falls in other periods.

In Korea's relations with Japan there was no bilateral FTA/EPA, and ASEAN was acting as an intermediary between the two countries. As the index moved in an unexplainable way, it is not possible to establish a correlation relationship, nor to determine what this movement suggests.

Australia

- Date bilateral FTA/EPA with Japan came into effect: 2015
- Date the ASEAN-Australia and New Zealand FTA (AANZFAT) came into effect: 2010 (New Zealand, Brunei, Myanmar, Malaysia, the Philippines, Singapore, Vietnam and Thailand), 2012 (Indonesia)
- Analysis results: We reluctantly gave up analysis as we were unable to perform a fair assessment due to lack of data.

New Zealand

- Bilateral FTA/EPA with Japan: None
- Date AANZFAT came into effect: 2010 (Australia, Brunei, Myanmar, Malaysia, the Philippines, Singapore, Vietnam and Thailand), 2011 (Laos and Cambodia), 2012 (Indonesia)
- Analysis results: We reluctantly gave up analysis as we were unable to perform a fair assessment due to lack of data.

India

- Date Comprehensive Economic Partnership Agreement (CEPA) between the Republic of India and Japan came into effect: 2011
- Date ASEAN-India Free Trade Area (AIFTA) came into effect: 2010
- The movement of *K* (Fig. 11 and Table 12).

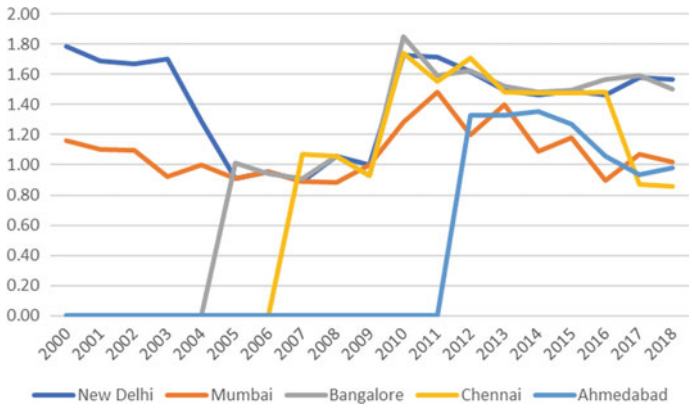

Fig. 11 The movement of *K* in India *Source* Author

Table 12 The movement of K in India

Year	New Delhi	Mumbai	Bangalore	Chennai	Ahmedabad
2000	1.79	1.16	0.00	0.00	0.00
2001	1.69	1.10	0.00	0.00	0.00
2002	1.67	1.09	0.00	0.00	0.00
2003	1.70	0.92	0.00	0.00	0.00
2004	1.29	1.00	0.00	0.00	0.00
2005	0.91	0.91	1.02	0.00	0.00
2006	0.95	0.95	0.94	0.00	0.00
2007	0.89	0.89	0.91	1.07	0.00
2008	1.06	0.89	1.06	1.06	0.00
2009	1.00	1.00	0.93	0.93	0.00
2010	1.72	1.28	1.85	1.74	0.00
2011	1.72	1.48	1.59	1.55	0.00
2012	1.62	1.20	1.62	1.71	1.33
2013	1.50	1.40	1.52	1.48	1.33
2014	1.46	1.09	1.48	1.47	1.36
2015	1.49	1.18	1.50	1.48	1.27
2016	1.47	0.90	1.57	1.48	1.06
2017	1.58	1.07	1.59	0.87	0.94
2018	1.56	1.02	1.50	0.86	0.98

Source Author

Analysis results

India's FTA strategy aims for the formation of an economic zone within Asia-Oceania based on a "look East" policy. AIFTA, a FTA with ASEAN countries, came into effect in 2010. Until then, custom duty of 10% had been levied on most industrial goods. After the agreement came into effect, in 2011 this was reduced to 2.5%.

Thanks to AJCEP, there are indirect benefits for Japan in that it can make effective use of ASEAN supply chains. Due to the fact that CEPA (effective in 2011) and AIFTA (effective in 2010) came into effect one after another, transportation costs of exports to India declined, and that could have led to the rise of the index K.

It is possible to say that Japanese manufacturers had agglomeration force to expand its effect in all measured regions in India from 2009 to 2012. Peripheral dispersion effects could be seen from 2015 heading into 2016. The chart shows the process of agglomeration followed by dispersion after a certain period, as shown in the Krugman's model, in several regions. This proves to be significant in assessing the model.

6 Conclusion

As Weber (1909), Marshall (1920), and other economists from the classical school have already demonstrated in their theories of location and agglomeration, claims of the importance of industrial clustering in economic development are nothing new. The significance of industrial clustering today, however, can no longer be explained merely by theories of increasing returns or economic externalities. A massive change is underway in those mechanisms which is, if anything, making industrial clustering even more important in today's society. It has been increasingly recognized as a platform for intellectual creation which leads a "knowledge spillover." This is also considered a place of learning as well which is becoming significantly important since it would directly be linked to the creation of "Innovation" based on knowledge.

We expect many Japanese manufacturers to leverage mega-FTA such as RCEP in the Asia Pacific. The Asian Development Bank (ADB) forecasts that ASEAN, which plays the leading role in the Asia Pacific, will have a population of over 700 million in 2030. Major countries like China and India are also in the region, and RCEP is the economic framework in the most important region in which Japan should be strengthening its economic ties going forward.

In this research, leveraging Krugman's spatial economics model, we conducted an empirical analysis on whether Japanese manufacturers' development into the region under RCEP could significantly create agglomeration and peripheral dispersion effects in the areas concerned, using data published by JETRO.

As a result, among the total of 15 countries examined, we found statistical significance in five countries (China, India, Indonesia, the Philippines and Vietnam). We deferred objective assessment, due in part to the possibility of abnormal values, of five countries (Singapore, Malaysia, Thailand, Myanmar and Korea), and were unable to conduct fair assessments due to lack of data of five countries (Brunei, Laos, Cambodia, Australia and New Zealand). The proportion of the group in which statistical significance could be confirmed was 50%, five out of ten countries we were able to assess, and it is worth noting that these include countries such as China and India on which substantial sample data were found and used in the assessment. Therefore, as a start, the group identified as significant were the five most populous countries in the RCEP, which excludes Japan, the origin of this survey. The major challenge for moving forward with this research in the future is to quantitatively analyze whether contribution is being made by the large size of these populations, or whether other kinds of significant commonalities can be identified in the region. This is precisely the key factor which will allow us structurally to clarify how the RCEP framework will contribute to the development of Japanese firms in the region. Understanding this factor will also be potentially useful in studies of economic frameworks in other regions, making the insights from this work all the more meaningful.

With the correlation found in this group with statistical significance as security, if we regard the RCEP area as one group or one country, this empirical study shows that RCEP could have significant impacts. With RCEP coming into effect as agreements in its framework, not only Japanese manufacturers' trading activity is revitalized, but

also we can expect ripple effects on overseas expansion as well as business expansion locally. As a result of RCEP coming into effect, we hope that Japanese manufacturers' international activities and the Japanese economy are strongly revitalized, and wish to point out that FTA/EPA could be an effective factor that revitalizes companies' business development overseas. Research results leading to more high-quality proposals would be possible if quantitative analysis can be also supplemented by a qualitative analysis on how the development of cross-border supply chains that lead to growth strategies under theories of "Innovation" can strengthen international competitiveness, as well as its mechanism.

(End)

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The Satisfaction of Corporations When Using Tax Administrative Services: Proceeding in Hanoi—Vietnam

Nghi Phan Huu, Linh Tran Thi Thuy, and Tung Nguyen Duy

1 Background

In recent years, the Government of Vietnam has been extremely determined to reform the administration system. This aim is to construct a Government having integrity, acting for their citizens and corporations. On the aspect of Government management, Tax authorities have also belonged to public administrations and tax is the main revenue for the state budget. Money from taxes is used to consume goods, services to provide for essential public activities such as military, medical healthcare, education, economy regulatory, community welfare increase. Following the Government's direction, meeting the requirements of renovation, international economic integration, over the past time, the management of budget collection and budget structure has been drastically implemented by the Ministry of Finance with steps important progress. Specifically, from 2011 to 2015, despite the implementation of import and export tax reduction under commitments to integrate ASEAN, the European Union (EU), the United States, APEC, the World Trade Organization (WTO), but the state revenue still has many important changes, with strengthening revenue management, promoting anti-revenue loss, anti-transfer pricing and tax arrears settlement. Since 2013, dividends have been distributed to the state capital in joint-stock companies and the remaining profit of 100% state-owned enterprises, state-owned corporations, corporations, total state budget revenue continued to increase, nearly 2 times higher than the period of 2006–2010, an average of 22.3% of GDP, of which average taxes and fee collection reached about 20.8% of GDP, quite close to the target. Out in the Financial Strategy (no more than 22–23% of GDP).

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The state budget revenue in 2016–2017 averaged over 22% of GDP, of which taxes and fees revenues reached over 20% of GDP. In 2018, the state budget revenue balance was estimated at 1422.7 trillion dong, exceeding 103.5 trillion dong (+7.8%) against the estimate, up 64.3 trillion dong against reports by the National Assembly, The rate of mobilization in the state budget reached 25.7% of GDP, taxes, and fees alone were 21.1% of GDP (the target for 2016–2020 period is 23.5% of GDP and 21% of GDP respectively). He state budget revenue over the years shows that the budget revenue structure is increasingly more solid, consistent with the development of the economy and the integration process: the proportion of domestic revenue in the total state budget revenue is increasing, the proportion of indirect taxes in the total revenue of taxes and fees is increasing, the proportion of direct taxes (mainly including corporate income tax and personal income) decreases gradually, in line with the policy of reducing encouragement and increasing in capital gathering; the proportion of taxes and regular revenues is increasing, while one-off revenues are decreasing. In terms of budget decentralization, local budget revenues tend to increase both in size and proportion, the leading role of the central budget is guaranteed.

Revenue from indirect taxes increasingly plays an important role in mobilizing resources for the state budget, direct taxes account for a smaller proportion. In recent years, tax policies have created favorable conditions to promote production and business activities, creating an attractive investment environment, indirect taxes account for an increasing proportion of the total State budget revenue, meanwhile, direct taxes tend to reduce the proportion. Specifically, in 2016–2019, the proportion of revenue from corporate income tax (excluding crude oil) to total state budget revenue tends to decrease and average about 14.5%, down from an average of 16, 1% of the 2011–2015 period. Because part of the people's income has improved, the proportion of personal income tax in the total state budget revenue increased, reaching an average of 6.6%, an increase compared to 5.64% in the period of 2011–2015. The proportion of non-agricultural land use tax revenue in the total state budget revenue reached an average of 0.12%, lower than 0.17% in the period of 2011–2015. For indirect taxes, the positive contribution to the state budget is the value-added tax, followed by the special consumption tax. In 2016–2019, the proportion of revenue from value-added tax to the total state budget revenue increased rapidly and became the most important source of budget encouragement, reaching an average of 24.3%, although still below the level. Averagely 25.78% of the period 2011–2015 but higher than 22.36% in the period 2006–2010. The proportion of excise tax collection on domestic goods to total state budget revenue is also increasing day by day increase from an average of 6.27% in the period of 2011–2015 to 7% in 2016—2019. The reason is due to the increase in excise tax rate increase for some goods according to the schedule. Especially, the environmental protection tax (issued in 2010 and applied from 2012) is accounting for an increasing proportion of the total state budget revenue, about 3.4% in 2019 (compared to 2.71% in 2015 and 1.72% in 2012).

Revenue from fees is gradually playing an important role in mobilizing resources for the state budget. Revenues from fees, charges, and other non-tax revenues also play an important part in mobilizing resources for the state budget. From 2016 to 2019, revenue from fees averaged nearly VND 34 trillion, an increase of about

2.2 times compared to the period of 2011–2015; Revenue from registration fees averaged about VND 31 trillion, 1.9 times higher than the period of 2011–2015. The non-agricultural land use tax policy in Vietnam has allowed the mobilization of financial resources for the state budget on average about VND 1680 billion per year from 2016 to 2019 and the average annual growth rate of 1.3%. The proportion of revenue from non-agricultural land use tax will reach about 0.12% of the total state budget revenue and about 0.15% of the total revenue from taxes, fees, and charges in 2016–2019 (lower than that of (0.17% and 0.19% respectively in the 2011–2015 period). The revenue from non-agricultural land use tax in recent years has been a stable source of revenue, creating a source of revenue for local budgets (local state budget) under the State Budget Law on budget decentralization, performing spending tasks of local state budget. At the same time, more investment sources in the field of land management. Implementing the 2013 Land Law, the issued documents promptly removed difficulties and obstacles arising in the process of implementing the policy of collection of land use fees, land rents, and water surface rent for subjects. using land. As a result, the revenue from land use fees and land rents has increased sharply over the years, creating a source of investment for the socio-economic development of the country, and at the same time showing the exploitation of public resources in general., resources from land, in particular, step by step more effective. Revenue from land use fees in 2019 is estimated at 90 trillion VND, an increase of 2 times compared to 2011; Revenue from land rent in 2019 is estimated at VND 27.3 trillion, an increase of more than 4 times compared to 2011 (Fig. 1).

Taxes from corporations have played an important role in total state budget revenue. Until 2019, corporations have to pay for several taxes such as income tax, value-added tax (VAT), export–import tax, etc. According to statistics of the Ministry of Finance (MOF), about 40% of total state budget revenue comes from the contribution of corporations. However, almost corporations paying taxes have not been

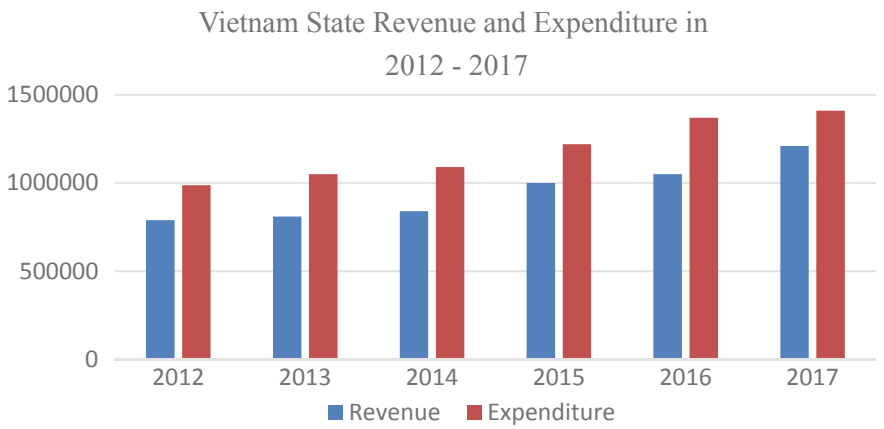

Fig. 1 Vietnam state revenue and expenditure in 2012–2017. *Unit* Billion Dong. *Source* Vietnam Ministry of Finance

fully satisfied with the services of Vietnam tax authorities. According to the statistics of Central Institute for Economic Management, corporations on average need 482 h of their working time to perform tax duties, nearly 41 working days comparatively (calculated to administrative time—12 h/day) and the time authorities request corporations to prepare their documents is very huge. Administration reforms at tax management authorities in general and Hanoi, in particular, have been still having many limits and weaknesses. However, "The barriers of preventing from minimization, simplification still exist and keep going on", Mr. Nguyen Dinh Cung, President of Central Institute of Economic Management said. Hanoi is the starting point of tax reforms and the satisfaction of corporations in Hanoi plays an important role in rating tax reform efforts of the Government. So in Hanoi, how do corporations think about tax administration services and how does tax administrative services need to complete to enhance the service quality?

2 Literature Review

2.1 Theory Framework

The approach of research starts from the point: taxpayers are "customers" and tax authorities are units "providing advisory services and utilities" to enhance the awareness of law compliance and make advantageous conditions for taxpayers to perform their duties. Service quality has many ways to be defined depending on research objects and research environments and finding out service quality is the basis to perform solutions of service quality improvement in organizations, corporations.

The definition of Wikipedia is that: "A **service** is a transaction in which no physical goods are transferred from the seller to the buyer. The benefits of such a service are held to be demonstrated by the buyer's willingness to make the exchange". According to Tse and Wilton (1998), the satisfaction of customers is the reaction of customers towards estimating differences between their desires and the performances of goods, services after being used. While Kotler (1997) defined the satisfaction of customers is the contented feeling (or disappointed) based on comparing the function of services by using with the original expectations of customers. The definition of Kotler approached towards both sides of satisfaction is contentment and disappointment, also pointed out methods to measure satisfaction by the ratio between realities and expectations of services' functions. According to Zeithaml and Bitner (2000), the satisfaction of customers is the rating of customers about a product or service which has responded to their demands and expectations. Although giving many definitions, all definitions have the same constitutive factors: emotions, customers' attitude, expectations of customers with the ability to serve the demands from the service provider, results of performing the missions, the will of being ready to continue or not using the services.

Wikipedia defined that: "**Tax** is a compulsory financial charge or some other type of levy imposed upon a taxpayer (an individual or legal entity) by a governmental organization in order to fund government spending and various public expenditure. Taxes consist of direct or indirect taxes and may be paid in money or as its labour equivalent." Opposed to customers in private services, taxpayers cannot choose a tax service providing units because according to management assignment, they just can receive public administrative services from their direct tax management authorities. Received services which are deserved to the contributed money make taxpayers feel satisfied and stick more to the business location where tax authorities provide the best public administrative services. Keeping taxpayers to stay, making them develop is warranting stable revenue for the state budget, making society and economy at local development, and also raising the awareness of taxpayers to comply with tax laws.

Suharto stated that satisfaction of taxpayers is perceived by service users for services provided, compliance with service quality, the performance of tax officials, the response of taxpayers, the difference between expectation and performance, and exceed the expectation of taxpayers. Tran Thi Ai Thao (2017) has shown the model with 6 independent variables (Tangibles, Officers, Procedures, Reliability, Feedbacks, and Fees to evaluate the satisfaction of citizens using administrative services in Danang, Vietnam. While Hue and Hai (2018) also evaluated the satisfaction of citizens using tax administrative services in Dongnai, with the model having 5 independent variables (Tangibles, Procedures, Levels of service, Attitude, Ability of officers). Dam Thi Huong (2015) also pointed out 5 independent variables when researching the satisfaction of taxpayers in Tuyenquang (Reliability, Responsiveness, Serving ability, Tangibles, Transparency). The limits of previous researches in administrative services in general and tax administrative services in particular in Vietnam are: First of all, they all used the same or mostly the same variables with the same question table, which shows the lack of reliability in these researches. Secondly, the questions given out stand on the view of government or authorities, which cannot reflect the true satisfaction from the experiences of taxpayers. Finally, there are few researches in the satisfaction of corporations, and the area of Hanoi.

2.2 Research Model

To measure service quality, there are many research models given and though the feature of each service is different, but they all have one point in common—levels of feeling about the quality when customers use those services. According to evaluating quality model of Gronroos (1984), to evaluate service quality, Gronoos has given three criteria: technology quality, quality, function, and image.

According to Parasuraman and partners (1985), the satisfaction levels can be measured with 5 distances, and service quality depends on the 5th distance and this distance on other distances before. Those scholars above have also started and used qualitative and quantitative researches to develop and test the scale of service

quality's factors (called SERVQUAL scale). The SERVQUAL scale is adjusted and tested at many kinds of different services. Finally, the SERVQUAL scale included 22 variables to evaluate 5 elements of service quality, there are: Tangibles, Reliability, Responsiveness, Competence, and Knowing the customer.

About the premise and mediate model of Dabholkar and partners (2000), this can be seen as a complete model about service quality. The model concluded that reliability, personal attention, relaxation, specialty would affect service quality, thence effect to the satisfaction of customers then leads their behavior intent.

Inheriting selectively the service quality and customer satisfaction model of Parasuraman and the premise and mediate model of Dabholkar, also based on the theoretical framework about public administrative services' rating criteria at State administrative offices, this research offers model evaluating levels of corporations' satisfaction when using tax administrative in Hanoi, in specific:

SHL is a dependent factor, showing levels of satisfaction of taxpayers towards the service quality of tax authorities. Factors PTHH, STC, SDU, NLPV, SDM are independent factors.

To each independent factor given to be evaluated, one statement is given in the description, and taxpayers are asked to give their own opinions according to the Likert scale 5 points. Point 1 means the respondent disagrees and point 5 means the respondent agrees with the statement.

The scale in this research has been adjusted compared to other scales in domestic and international researches. Based on the theoretical framework and is suitable for the Vietnam environment, the authors offer scales like Table 1.

2.3 Research Methodology

This research uses quantitative research combined with analyzing by SPSS 20.0, proceeded specifically as follows:

Step 1: Proceeding research by question table (based on completed scale) with expected samples N = 550;

Step 2: Analyzing data from the multiple regression model with SPSS 20.0 to test theories in the theoretic framework;

Statistics are collected after testing reasonability and cleaning to proceeding through analyzing steps: Sample description statistics; checking Cronbach's Alpha coefficient to scales; EFA factor analyzation; building multiple regression model and testing theories (Table 2).

Table 1 Encoded scales

Variables	Description		Sources
Tangibles (PTHH)	PTHH1	Infrastructures are always ready to serve	Sureshchandar (2001), Johnston (1997)
	PTHH2	Infrastructures are convenient, modern and useful	
	PTHH3	Designation of infrastructures, arrangement, tax officers' appearance	
	PTHH4	The working environment is clean, neat, tidy	
Reliability (STC)	STC1	Procedures of tax administrative services are regulated unfriendly, easy to apply, correct as being public	Parasuraman (1998), Avkiran (1994), Bahia and Nantel (2000), Sureshchandar (2001), Hu'ò'ng et al. (2015)
	STC2	Tax administrative services received and given back on time as regulated	
	STC3	File samples are clear, easy to do	
	STC4	When needing helps about taxes, corporation often contact with tax authorities	
	STC5	Administrative procedures are simple, convenient	
	STC6	Tax authorities support to secure corporations' information	
Responsiveness (SDU)	SDU1	Tax officers are ready to support stuck about tax when having requirements	Johnston (1997), Parasuraman (1998), Bahia and Nantel (2000)
	SDU2	Calls about tax policies are answered specifically and easily by tax officers	
	SDU3	Tax officers always have an awareness of responsibility when solving tax procedures for corporations	
	SDU4	Corporations don't wait too long when solving problems about taxes	
	SDU5	Tax electronic system always response anytime, anywhere	

(continued)

Table 1 (continued)

Variables	Description		Sources
Competence (NLPV)	NLPV1	Tax officers have ability of specialization and major	Johnston (1997), Parasuraman (1998), Bahia and Nantel (2000), Hu'ò'ng (2015)
	NLPV2	Tax officers always guide, answer on the right point	
	NLPV3	Tax officers are always polite, gentle	
	NLPV3	Tax officers are flexible when solving difficulties	
Knowing the customer (SDC)	SDC1	Tax officers are always sympathetic to the difficulties of corporations and listen to corporations' feedbacks	Johnston (1997), Avkiran (1994), Bahia and Nantel (2000)
	SDC2	The role of family and friend are not important when negotiating with tax officers	
	SDC3	Corporations feel the care of tax officers when working at one-door gadget	
	SDC4	Tax authorities make the best conditions for corporations, always make conversations with corporations to solve difficulties	
Innovation (SDM)	SDM1	Tax administrative procedures are always changing, updated to take advantage for corporations	Hu'ò'ng (2015)
	SDM2	The time to solve administrative procedures is being shortened	
	SDM3	Tax officers are having changes in serving ways	
	SDM4	The speed of tax electronic systems is faster and manipulations are becoming easier	
Satisfaction (SHL)	SHL1	Satisfaction with supports, advice, and providing information of tax administrative services of tax authorities	Hu'ò'ng (2015)
	SHL2	Satisfaction by serving ways of tax authorities	
	SHL3	Satisfaction when performing tax administrative services at tax authorities	

Table 2 Research sample description

Dividing by types of corporations	Number	Proportion (%)
Types of corporations		
Joint-stock company	378	42
Limited liability company	281	31.22
Private enterprise	230	25.55
Cooperative	12	1.33
Total	900	100
Dividing by careers and businesses		
Agriculture, forestry, fishery and exploitation	203	22.55
Industry, construction and transportation	271	30.11
Trading, service	352	39.11
Activity in other fields	126	14
Total	900	100

3 Results

Step 1: Proceeding statistics description and testing reliability of scales by Cronbach's Alpha.

Testing the reliability of scales (Cronbach's Alpha test) of satisfaction of corporations when using tax administrative services in Hanoi with 30 observed variables of 7-factor groups, after excluding unsuitable variables, Cronbach's Alpha coefficient fluctuates from 0.770 to 0.878, which means using the scales is suitable. Correlation coefficients of total variables are all 0.3 and higher (Nunnally and Bernstein 1994). So, these measured variables are all accepted by the aspect of reliability and used in EFA analyzation.

Step 2: Analyzing exploring factors and analyzing correlation coefficients.

Starting EFA analyzation for all measurement factors with Varimax rotation, with the Eigenvalue higher or equal to 1, to find out factors representing for variables. According to Trọng and Ngọc (2012), Varimax allows rotation originally to minimize the number of variables having a big coefficient at the same factor, so it will enhance the ability of explaining independent variables.

The principle of excluding variables is applied as follows (Nguyen 2009): Varimax Rotational matrix will have statistics meaning, if it responds all of these followed conditions in the test of the suitability of KMO (Kaiser–Meyer–Olkin) factor analyzation.

KMO index must be in [0.5; 1] then factor analyzation is suitable, even if it is smaller than 0.5 then analyzation has the probability of not being suitable at input data; the Barlett test has Sig. has to be smaller than 0.05; Eigenvalue is higher or

equal to 1; Total deducted variances are higher or equal to 50% in Rotated Component Matrix.

Independent variables having the factor loading coefficient not higher than 0.3 will be excluded out from the model. Observation variables uploaded from 2 factors and not warranting factor loading coefficient's difference to be smaller than 0.3 will also be excluded. However, in the process of considering factors, the authors will consider contributions of variables to content value before deciding to exclude or not, not depend on testing.

The result of analyzation of KMO = 0.823, sig = 0.000 < 0.05, then observation variables have correlations in overall and exploring factor analyzation technique EFA is suitable.

The result of analyzing correlations between variables shows that Sig. Between independent variables PTHH, STC, SDU, NLPV, SDC, SDM and dependent variable SHL are all <0.05, so it can be concluded that independent variables have linear correlations with the dependent variable and then will be put into a linear regression analysis model on the following part.

Step 3: Linear regression analysis.

Linear regression analysis is to evaluate the level of suitability of the given model in the theoretical framework. The result of regression with the final target is testing the theories and also evaluating both the theory's impact and independent variables' impacts on dependent variables.

After analyzing correlation, the following regression analysis aims to determine the linear relationships between independent variables PTHH, STC, SDU, NLPV, SDC, SDM with dependent variable SHL. First is Sig. Value. T Testing each independent variable, Sig. smaller than or equal to 0.05 means that the variable has meaning in the model, and on the contrary, Sig. bigger than 0.05 means that the variable needs to be excluded. So, when analyzing multiple variable regression at the 1st time, the relationship between variable NLPV and dependent variable SHL still has no statistic meaning (Sig. = 0.476 > 0.05), then excluding this variable and analyzing regression for the 2nd time, the result will be at the Table 3.

The values of Adjusted R Square reflect levels of influence of independent variables on the dependent variable. Specifically, in this situation, 5 independent variables affect 58.3% change of the dependent variable, and 41.7% left is affected by variables outside the model and random error. In general, the value higher than 50% can be used in the research.

The result of the regression model shows that, apart from 1 factor NLPV excluded, 5 factors have statistic meaning with the reliability 95%. The factor affecting most strongly to the satisfaction of the corporation is Knowing the customers (beta = 0.358), Reliability (beta = 0.308), Responsiveness (beta = 0.290), Innovation (beta = 0.106) and finally Tangibles (beta = 0.0095).

Result of model:

$$SHL = 0.095PTHH + 0.308STC + 0.290SDU + 0.358SDC + 0.160SDM$$

Table 3 Results of regression

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant	0.012	0.02		0.01	0.992		
PTHH	0.077	0.021	0.095	1.1	0.01	0.966	1.035
STC	0.179	0.047	0.308	7.68	0	0.801	1.248
SDU	0.346	0.04	0.29	7.1	0	0.771	1.296
SDC	0.202	0.036	0.358	8.749	0	0.771	1.297
SDM	0.088	0.03	0.106	2.915	0.004	0.972	1.029
N				550			
R				0.768			
R Square				0.59			
Adjusted R Square				0.583			
Sig				0			

Source Results from solving data in SPSS

4 Solutions to Improve the Satisfaction of Corporations When Using Tax Administrative Services

From the result collected, applied to the condition of Hanoi, the authors offer some solutions to improve the satisfaction of corporations when using tax administrative services:

For Tangibles

- Proposal base

The basis for this improvement proposal was approved by quantitative evaluation results after a direct survey of enterprises in Hanoi. Seeing when the response affects only 0.095 units to change the business satisfaction with Cronbach's Alpha index of 0.716. The impact index of the independent versus the dependent variable is satisfaction is still small. This proves that the need for tangible facilities needs to be improved so that the quality of public service at tax authorities can be better served.

- Content of implementation

Tangible facilities are external factors, represented by the appearance, tax attire's attire and equipment, facilities, and infrastructure to serve customers. To do this well, you need:

– Equipping a uniform and uniform, with a nameplate clearly stating the position and number is a way to create a model of cadres representing state administrative

agencies, making a good impression and seriously adjusting and show the respect of government agencies to service users.
– Infrastructure needs to be fully equipped with a neat, cool environment, equipped with the necessary items for work to create the most airy and comfortable for service staff and service users.
– Equipping and supplementing and installing new computer systems, technologies, and administrative service systems so that customers can use them directly to search for information and help officials to quickly implement procedures. profane. At the same time, regularly improving and modernizing the computer system and accompanying media.
– Agency premises, with parking for cars and motorcycles, parking arrangements, and instructions for customers on arrival.
– The camera system is retrofitted in the tax office to serve the monitoring of customer service activities and create favorable conditions for managers to monitor the performance of their employees.
– Promote the online support system via hotline, quick support to resolve questions and difficulties of businesses, and receive direct contributions.
– Security Department and Information Technology Department are the two most suitable departments to implement this solution group because the factors appearing in the solution group are suitable for ensuring security and supporting businesses with Means from Information Technology.

For Responsiveness

- Proposal base

Based on this proposed improvement, it was approved by quantitative evaluation results after the direct survey of enterprises in Hanoi Tax Department in the process of using public transport services. Seeing that the response only impacts 0.116 units to change the business satisfaction with the Cronbach's Alpha index of 0.712.

Which 2 variables SDU3 correspond to the question "Employees are always responsible for handling business procedures." And the SDU4 variable corresponds to the question "Enterprises do not have to wait long when solving problems." Are the two variables that have the greatest correlation with the common factor with the total correlation coefficients of 0.537 and 0.476 respectively. The response to the above two questions is directly affected by human issues at tax administration and government policies. There are solutions to solve and implement these two variables as well. requirements for improved business responsiveness. Since then complete the quality of service.

At the same time, the response effects and entails the credibility of the business with the tax administration. These two factors are correlated with each other. If trust

is a factor formed by the process and takes time in using the service, then the response is action, implementation that creates the basis for trust.

- Content of implementation

The response shows the desire and willingness of staff, officers providing tax administrative services to customers. These are among human factors that need to be focused on the implementation of public services.

– Promptly responding and serving tax services requires preparation from tax authorities. Staff should be fully equipped with knowledge and form answers, patterned feedback services, or professional handbooks, to document difficult and difficult issues of businesses often suffer from that to process quickly.
– Establishment of business groups and clearer categorization, this will facilitate the service and implementation of policies and terms easier. The centralization to meet a group of businesses will help to implement more effective and can guide and analyze more clearly the situation of business activities in the province over a while.
– For large-scale enterprises under the support of the province, which are businesses developing in encouraged industries and facing many difficulties, the Tax Department should assign people to directly supervise and associate. with businesses to meet their urgent needs. This has created both reputation for the state agency and the concern of the authorities to the people.
– Because the Personnel Department has the functions of planning, training, retraining, arranging, recruiting, using, evaluating, and managing officials; strengthen the management apparatus; ensure proper and timely implementation of regimes and policies. Therefore, this solution group should be implemented by the Personnel Department to achieve the highest efficiency.

For Reliability

- Proposal base

The basis for this improvement proposal was approved by a quantitative evaluation after a direct survey of enterprises in Nghe An. Seen when the trust only impacted 0.59 units to change business satisfaction with Cronbach's Alpha index of 0.693.

In which, the variable STC2 corresponding to the question "Administrative procedures received and returned results on the prescribed time" has the highest total correlation variable of 0.547, showing that this question has the greatest impact on the common factor. Therefore, to improve the reliability of businesses, special attention should be paid to the STC2 variable in the way of improving administrative services.

- Content of implementation

Foremost, that faith is the trust of users in the service by handling accurately and quickly problems that need to be solved and always holding the promise to create a sensation of security for service users when handling.

- It is necessary to formulate a customs policy in general and a set of customs administrative procedures and customs duties in particular, which are easy to understand and easy to apply following actual conditions.
- Officials serving and implementing customs policies and procedures must regularly supplement their knowledgeable knowledge about operations to give customers confidence about the one-way information guarantee from the State. At the same time closely follow the actual situation in the province, the economic situation is directly related to the business. In case of any mistake, it should be handled immediately and effectively once to bring the trust of service users.
- Publicizing policies and customs provisions related to enterprises, especially newly promulgated and newly implemented policies. Popularize on mass media websites such as the provincial customs website, the provincial website for easy access to businesses and this will avoid the one-stop mechanism of the authorities, and create favorable conditions for businesses to change according to the trend under the newly launched policies.

Problems in the implementation process are still being sought and rectified by state agencies. This problem is the phenomenon of unofficial costs of businesses synonymous with the speed of customs procedures. In recent years, although the publicity on the procedure and time for implementing administrative services has gradually become clear and transparent. However, the situation of bribes for faster procedures or administrative difficulties for businesses to create non-transparent revenues is still going on. This is a sensitive issue, especially for the tax authorities, which is difficult to control. Part of the reliability of service users will be diminished if their thoughts are always formed extremely about the administrative service they will use.

The authorities, managers need to clearly show their role in supervision, management, strict and appropriate penalty for administrative officers who commit fraud, contravention of regulations.

5 Conclusion

By model researching the satisfaction of corporations when using tax administrative services in Hanoi, on basics, tax authorities have done quietly well their mission; however, corporation evaluating levels of satisfaction is not high as expected in enhancing the quality of tax administrative services. For highly evaluated factors, by taxpayers, they need to continue to promote and maintain the quality of services. However, tax authorities also note to enhance more quality to not highly recommended factors like Tangibles or Innovation. On that basis, the authors recommend some solutions to improve the satisfaction of the corporation managed by tax management authorities. However, this research still has some limitations: First of all, it

cannot cover the satisfaction of total corporations in Hanoi. Moreover, the satisfaction of corporations in Hanoi cannot be a representative for the satisfaction of corporation in Vietnam or in worldwide. As a result, this research will be a basic study for further researches in the future.

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Factors Influencing the Intention to Choose E-Wallet in Shopping Online: Case Study of Ha Noi Citizens

Huong Le Thi Lan, Hoa Tran Thi Van, and Hien Tran Thi Phuong

1 Introduction

In developed countries, non-cash payment methods have been used in daily life for a long time and replace the traditional cash payment rapidly. For instant, European Central Bank's statistic shows that 134 billion new non-cash payments were made in 2017, which increases the total payments by those methods in the EU by 7.9% compared to 2016. Furthermore, the ratio around one to ten between the "paper-based transaction" and the "electronic transactions" continues increasing the importance of e-payment methods the EU area (European Central Bank 2017).

E-wallet is a non-cash payment which is gradually used widely in many countries due to its usefulness. This method enables users to pay for both offline and online transactions. In European, the common of using e-wallet among citizens indicated by 42% payments were made via e-wallet in 2017. In some nations such as Italy, UK, etc., PayPal (e-wallet) is the most popular payment service (DPD Group 2017a, b).

The E-wallet in Asia is also developing significantly. Due to WorldPay, by 2021 e-wallet is expected to dominate other payment methods by make up for more than 51% the payments in e-commerce market. Meanwhile, the using of cards payments is predicted to decrease from 30 to 10% among ecommerce transactions in this area (Worldpay 2017).

E-commerce is rapidly developed in Vietnam. This lead to increasing number of non-cash payment methods. Among them is e-wallet. Although e-wallet has been used widely in some countries in the world, e-wallet is a new payment service to Vietnamese citizens. Up to now, 19% of e-commerce transaction value in Vietnam is implemented via e-wallets. The transactions value via e-wallets is equal to that of cash payment, third to card payment (34%) and bank transfer (22%) (Vietnamnet

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2019). However, it is forecasted that Vietnam's e-wallets will be the fastest-growing payment method in e-commerce. Therefore, understanding the factors influencing consumer's intention to use e-wallet in shopping online is very important. This will provide crucial insights for e-wallet providers in managing and developing market share.

2 E-wallet and Online Shopping in Viet Nam

Online Shopping in Viet Nam

It is undeniable that the online shopping market in Vietnam is very dynamic and potential. As in Fig. 1, there are 45.4 million internet users in 2015. It is growing rapidly. It reaches 68.17 million internet user in January of the year 2020 (Vnetwork 2019, 2020; Dammio 2016, 2017, 2018). There are 94% of internet users who use internet daily. The percentage of internet users who use at least one time per week is 6%. The people who access internet through mobile connections are increasing rapidly. Among 64 million internet user in 2019, there are 61.73 million internet users access by using smartphone (vnetwork 2019).

Among people internet users, one third of them use for online shopping. Online shopping is developed in Viet Nam in recent years. There are 40 million people who use online shopping in 2018. The estimated average amount paid by online shoppers for online purchases is $208 per person in 2018. Young generation so love online shopping. According to the age, 49% of online shoppers are people between the ages of 25–34. 28% of online shoppers are people between the ages of 18–24. Regarding

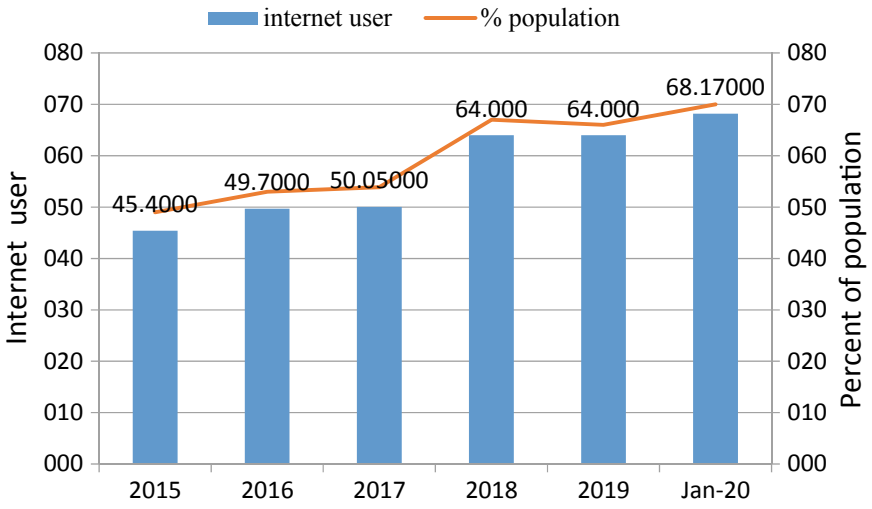

Fig. 1 Internet user in Viet Nam. *Source* Vnetwork 2019, 2020; Dammio 2016, 2017, 2018

gender, 60% of women who have experienced online shopping in compared with 40% of men. Smartphone is the first priority in online shopping (63%) (Linh 2019). Growth rate of online shopping is rapidly increased in period of 2018–2020.

E-Wallet in Viet Nam

E-wallet is non-cash payment method. It is electronic payment method. E-wallet just like a physical wallet, used to store information such as credit card numbers, the identity of the owner, contact information, shipping or billing information including customer address and other information that is used at the time of checkout on e-commerce sites (Junadi and Sfenrianto 2015). Via e-wallets, consumers only need to enter the information once and can be used on any site to transact.

E-wallet was in Vietnam since 2008. There were 9 commercial banks that have launched e-wallet services. The first type of e-wallet was form of allowing for buying online products/services and transferring money between accounts in the same network, and it was not allowed to withdraw money. E-wallet was slowly developed in period of 2009–2013 (Nguyen and Nguyen 2018). It was changed from 2014. There were 28 licensed e-wallets in 2019. However, 70–90% of market share is belonging to six big players (Vietnamnet 2019). They are Payoo, MoMo, SenPay, Moca and Airpay. Airpay, MoMo, Senpay, Moca and VTC Pay. 95% of total transaction value in the market had been made through Payoo, MoMo, Senpay, Airpay and Zalopay. According to the State Bank of Vietnam, Vietnam had more than 3 million e-wallet users by the end of 2016, increased by 4,471% compared to 2009. In addition, the value of e-wallets market was 53,109 VND billion in 2016, increased 64% over 2015. About 25 e-wallet suppliers have been licensed and already provide service recently. There are some popular brand name such as: Momo, Payoo, Bao Kim, Ngan Luong, etc. Up to now, it is allowed to transfer money to account in other network and withdraw money through commercial banks.

E-wallet is interested by many banks and intermediary payment services. In the future, e-wallet will be strongly developed. There also is cooperation between banks and payment service providers. There is development potential for e-wallet in Viet Nam.

3 Theoretical Framework

Taufan and Yuwono (2019) applied TAM model to analyze intention of use e-wallet. They indicated 4 factors that influence the intention of e-wallet use. These factors were perceived value, perceived usefulness, perceived ease of use, perceived security, Among them, perceived security negatively impact on attractiveness of alternative, but it had negative relationship with perceived trust. Perceived security and social influence were also mentioned in analyzing factors impacting on e-payment system (Junadi and Sfenrianto 2015). Perceived security and perceived trust strongly impacted on use of e-payment system (Oney et al. 2014). Chin and Ahmad (2015) confirmed that perceived ease of use and perceived usefulness had relationship with

intention of e-payment method. Previous studies were based on TAM model with two main variables of Perceived usefulness and Perceived ease of use. Other variables that influence intention of use are from actual use. Therefore, the use of TAM model will be reference for analyzing consumer's intention of e-wallet use.

Perceived Usefulness

Perceived usefulness is the subjective perception of potential users regarding to the use of a particular system will improve their performance. In addition, this factor is mentioned in a lot of research articles related to the application of technology. Lee et al. (2001) indicated that consumers' perception of the usefulness of electronic payment methods is an important determinant. Furthermore, Teoh et al. (2013) have come to the same conclusion in their study of factors affecting consumer perceptions in Malaysia. In a similar study by Chin and Ahmad (2015), the degree of usefulness has the greatest impact on customers' payment methods using perception.

Social Influence/Subjective Norms

Subjective norms are one of two important factors affecting consumption intentions in the TRA model (Fishbein and Ajzen 1975). The model defines subjective norms as the individual's perception regarding to the impact of society and community on a given behavior.

Perceived Security

Perceived security related to "perception of risk and right of privacy". According to Roy and Sinha (2014), many people hesitate to use electronic payment services because they think that the banks may provide a good and prestigious service but they do not feel confident about the technical factors. Oney et al. (2014) indicated that consumers' perceptions of individual privacy had a large positive impact on the decision to use the payment system of the customers. Perceived security has a significant impact on user (Taufan and Yuwono 2019). Research was conducted by Kumar et al. (2018) stated that perceived security had impact on intention to use.

Perceived Ease of Use

The TAM model (Davis 1985) refers to perception of ease of use as "the extent to which individuals believe using this particular system will help them to limit physical and mental effort". Diversity allows consumers to have more choices when using a particular payment method. Ahmad and Chin (2015) indicated that the ease to use of electronic payment methods has a big impact on customers' choosing intention. Even in the reasearch by Roy and Sinha (2014), perception of ease to use has the greatest impact on the behavior of using electronic payment methods. However, the study by Daştan and Gürler (2016) shows the opposite result when the ease to use perception does not show significant impact on consumers' decisions.

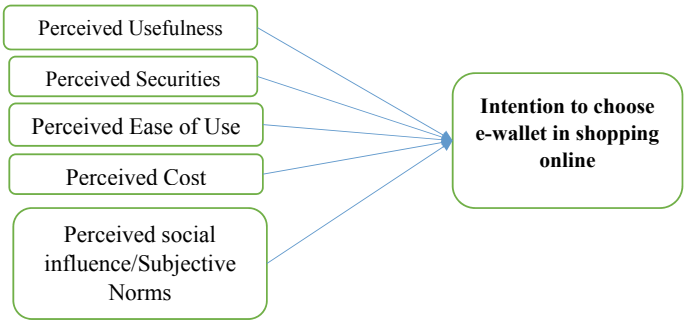

Fig. 2 Research model (Lin et al. 2013; Lai and Ahmad 2015)

Perceived Cost

Perceived Cost indicates that the information about the payment method's usage fee in the study should be provided clearly and accurately to consumers in every payment process: applying, processing, and transfering fees. Li et al. (2003) pointed out a negative relationship between the cost of the payment method and the consumer's choice. The Property management Insider magazine also mentioned this relationship.

Choosing Intention

According to Ajzen (1991), intention behavior reflects the "difficulty level of a person willing to try, and how motivates him or her to perform behavior."

Research Framework

Based on Technology Acceptance Model (TAM) and the above literature review, the initial proposed research model includes five factors that have influence consumer's intention to use e-wallet. These factors (Fig. 2) including perceived usefulness, perceived ease of use, perceived security, perceived cost and social influence/subjective norms.

4 Research Methodology

Secondary Data

- Research framework was designed based on published scientific papers from the Science and Development newspaper; Specialized books about E-commerce and non-cash payment methods; Manuals to analyze and evaluate data; and other highly evaluated thesis.
- Information about B2C transactions officially published in the Vietnam E-commerce Indicators 2017 report by the Vietnam E-commerce Association.

Primary Data Collection

The primary data of this research was collected by conducting survey. Survey was done in the first quarter of 2018. Respondents are Hanoi's citizens. Sample size was 600 citizens who are e-wallet users or aware of e-wallet industry. Respondent was chosen by convenient sampling method. The survey's language was Vietnamese.

The questionnaire consists of two parts:

Part 1: Demographic-related questions, which classify consumer groups. Forms are multiple-choice questions that require choosing one or more answers depending on the nature of each question.

Part 2: Questions evaluate factors that influence the intention to choose e-wallet when shopping online. The Likert scale was used that is rated from 1 (totally disagree) to 5 (totally agree).

(1) Perceived usefulness

- Using e-wallet will help me to save time
- Using e-wallet make it easier for me in shopping online
- Using e-wallet is to have better life quality
- Using e-wallet is modern life style

(2) Social influence

- Family and relatives impact on use e-wallet
- Friends and colleagues impact on use e-wallet
- Communication media impact on choosing e-wallet
- The important people (family/relatives/ friends/colleagues/etc.) use e-wallet

(3) Perceived security

- I know how to use e-wallet safely
- My personal information will be not disclosed when I use e-wallet
- My transaction's Information (time, branded) will be not disclosed when I used e-wallet
- Using e-wallet because there will be no carelessness
- There are rarely technical problems in online shopping when using e-wallet
- I was given full information and alerts when my payment went wrong

(4) Perceived ease of use

- It is very easy to use e-wallet
- There are many attractive option and it is diversified
- There are good customer's care services and supporting services

(5) Perceived cost

- Cost policies are clear
- Cost of using e-wallet is very expensive
- I will not choose e-wallet because of high cost

(6) Intention of use

- I will choose e-wallet when I have appropriate conditions (finance, works, etc.)
- I will choose e-wallet for the next online shopping
- I will recommend e-wallet to other people.

Sample Size:

There are 23 variables to measure consumer intention to choose e-wallet, so minimum size of sample would be 115 consumers (Bollen 1989). Initially, a pilot survey was conducted in a small group of five people to verify the accuracy and comprehensiveness of the survey. Researchers presented during the test and explained if the respondents did not understand. Thus, researchers would know which terms need to be adjusted. After editing questionnaire, 600 questionnaires were sent to consumers by using drop off method and online method. Consumers were chosen by convenient sampling method. 500 questionnaires were collected. Among 500 questionnaires, there were 418 questionnaires that meet the requirement and would be used for further tests. The independent variables are: Perceived usefulness, Perceived Ease of Use, Perceived Security, Perceived Cost, Subjective Norm which would be tested to identify whether they influence the Dependent variables (Intention to choose e-wallet when shopping online) or not. SPSS software was used for statistical analysis.

5 Research Results

As mentioned above, there were 418 respondents. Respondents was divided into categories namely gender, age, monthly online shopping frequency, monthly spent on online shopping. The demographics of respondents are listed in Table 1.

Demographics of respondents

Regarding non-cash payment methods in online shopping, 85.8% of respondents use bank transfer. 76.7% of respondents use credit card. The third choice is e-wallet. 53.5% of respondents use e-wallet. The percentage of respondents that using debit card and international money transferring are 44.2% and 25.8% respectively.

Cronbach's alpha reliability test

After Cronbach's Alpha analysis, the result shows that among 23 observation variables, BM6c (*I am provided sufficient policies and warning information when my*

Table 1 Demographics of respondents

Category	Sub-category	Percentage (%)
Gender	Male	67
	Female	33
Age	<18 years old	1
	18–25	72
	26–35	15
	36–45	8
	>46	4
Online shopping frequency	<2 times/month	66
	2–5 times/month	26
	5–10 times/month	4
	>10 times/ month	4
Monthly spent for online shopping	<500,000 VND	55
	500000–1 mill.	26
	1–3 mills.	13
	3–5 mill	4
	>5 mill	2

Source data analysis

payment has problem) and CP1 (*The cost policies of e-wallet service are clear*) have Corrected Item-Total Correlation less than 0.3 and will be rejected. In particular, variable BM6c has corrected Item-Total Correlation is 0.119 and CP1c is −0.022. However, variable BM5c has Corrected Item-Total Correlation equal 0.289 (<0.3) was not eliminated because if both BM5c and BM6c be eliminated, the Cronbach's Alpha value will be lower (0.547) than eliminate only variable BM6c (0.577).

After eliminated two variables as mentioned, 21 remained variables continue with Exploratory Factor Analysis. In general, all scales assure the reliability coefficient (Corrected Item-Total Correlation is greater than 0.3). In which, the Perceived Usefulness has the largest Cronchbach's Alpha value (0.812) meanwhile Perceived Security has the smallest (0.577) (Table 2).

Exploratory factor analysis

The test's result shows that the KMO measure of sampling adequacy value is 0.770 assure that data is eligible for analysis. Moreover, the Sig. in Barlett test is 0.000 (<0.05) indicate that the provided data is also suitable for analysis.

The e-wallet's Rotated Component Matrix includes 15/20 variables. Five variables was eliminated in which: 2 variables BM6c and CP1c was rejected in reliability test; 3 variables XH4c, BM1c after the first EFA as well as BM4c after the second EFA was not meet the requirement (factor loading is less than 0.5) (Table 3).

After EFA, the change in number of components and variables used to analyze the Intention of choosing Digital-wallet is summarized in this following table:

Component	Before testing	After testing
Perceived usefulness	4	5
Subjective norm	4	3
Perceived security	5	2
Perceived ease of use	3	2
Perceived cost	2	3

Independent sample T-test

The qualitative variable considered in this Independent Samples test is Gender which has 2 values: male and female. The significant value of Levene test is 0.066 greater than 0.05 indicates that variances of 2 genders are not different. Therefore, the significance of t-test with the assumption of equal variance continues to be considered.

Table 2 Table item-total statistic

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's Alpha if item deleted
Perceived usefulness: α= 0.812				
HI1c	10.96	6.758	0.542	0.803
HI2c	11.02	6.004	0.725	0.718
HI3c	10.98	6.045	0.686	0.736
HI4c	10.60	6.452	0.573	0.791
Subjective norm: α=0.693				
XH1c	8.98	6.019	0.511	0.607
XH2c	8.99	5.531	0.576	0.561
XH3c	8.58	6.007	0.497	0.616
XH4c	8.68	7.202	0.331	0.711
Perceived security: α=0.577				
BM1c	11.78	12.196	0.343	0.521
BM2c	11.67	8.913	0.313	0.584
BM3c	11.62	11.578	0.442	0.473
BM4c	11.75	11.987	0.391	0.499
BM5c	12.19	12.867	0.289	0.547
Perceived ease of use: α=0.521				
TD1c	6.83	4.805	0.411	0.357
TD2c	6.87	4.964	0.411	0.372
TD3c	6.81	2.559	0.315	0.632

(continued)

Table 2 (continued)

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's Alpha if item deleted
E-wallet's choosing intention: α=0.734				
YD1c	6.67	3.487	0.578	0.622
YD2c	6.92	3.260	0.578	0.622
YD3c	6.66	3.755	0.517	0.693

Source Data Analysis

Table 3 Rotated component matrix

	Component				
	1	2	3	4	5
HI1c	0.694				
HI2c	0.852				
HI3c	0.841				
HI4c	0.707				
XH1c		0.775			
XH2c		0.852			
XH3c		0.701			
BM2c				0.833	
BM3c				0.745	
BM5c			0.533		
TD1c	0.633				
TD2c					0.657
TD3d					0.811
CP2c			0.810		
CP3c			0.827		

Source Research 2018

The Sig of T-test is 0.383 > 0.05, which leads to the conclusion: There is no statistical difference in the intention to choose E-wallet among consumers with different genders (Table 4).

Analysis of Variance Test

The significant values of occupation, online-shopping frequency, spending for online shopping per month are higher than 0.05 indicates that the variances of each option of those quantitative variables are not different. Meanwhile, for age group and income variables, the significant values lower than 0.05 shows the differences in variances of each option (Table 5).

Table 4 Independent samples test

		Levene's test for equality of variance		T-test for equality of means		
		F	Sig.	T	Df.	Sig. (2-tailed)
E-wallet intention	Equal variance assumed	3.403	0.066	0.874	416	0.383
	Equal variance not assumed			0.844	254.059	0.400

Source Research 2018

Table 5 Table test of homogeneity of variance

	Levene statistic	Sig.
Age group	8.261	0.000
Occupation	1.199	0.311
Income	4.275	0.002
Frequency	1.114[a]	0.343
Spending	1.477[a]	0.208

[a]Asymptotically
Source Research 2018

Welch test is applied to evaluate the difference between the means value of each option in Age group variable. Result from table is as follows:

- Significant level larger than 0.05 (sig.0.419): No statistical difference in intention to choose e-wallet among consumers with different age group.
- Significant level larger than 0.05 (sig.0.532): No statistical difference in intention to choose e-wallet among consumers with different income.

The variables that variances of each option are not different are: occupation, income, frequency. Therefore, the results in ANOVA table can be used:

- There is statistical different in intention of choosing e-wallet among consumers with different occupation because the significant value of this variable in ANOVA table is less than 0.05 (sig.0.03).
- There is no statistical different in intention of choosing e-wallet among consumers with different shopping online frequency per month because the significant value of this variable in ANOVA table is more than 0.05 (sig.0.338).
- There is no statistical different in intention of choosing e-wallet among consumers with different spending for shopping online per month because the significant value of this variable in ANOVA table is more than 0.05 (sig.0.503).

Consumers' Evaluation

Consumers' evaluation toward e-wallet's usefulness:

Usefulness of e-wallet is evaluated at 3.59/5 by consumer in general. Among all statements of Usefulness, consumers have the highest agreement level with the claim that "*E-wallet brings modernity to consumers' lifestyle*". Specifically, this criterion is rated 3.93/5. Meanwhile, consumers believe that e-wallet does not really "*make customer shopping online easier*" and "*its functions are not easy to use*". Such opinions are showed by the lowest agreement rate: 3.50 and 3.42 respectively on a scale of 5. However, in general, the agreement rates of all 5 criteria of e-wallet's usefulness are all above average and the gap between the highest and the lowest is not very large.

Consumers' evaluation toward e-wallet's subjective norms:

Among all statements of Subjective Norms, consumers believe *information from media* impact the most on their choosing intention. Specifically, this criterion has the highest rate 3.16/5. Meanwhile, consumers believe that they are less influenced by the *choosing intention of friends and colleagues.* This indicates by the lowest agreement rate: 2.75 on a scale of 5. However, in general, the agreement rates of all 3 criteria of e-wallet's subjective norms are from average to above, and the gap between the highest and the lowest is 0.31. The overall evaluation for subjective norms of e-wallet is 2.89.

Consumers' evaluation toward e-wallet's security:

Consumers do not highly appreciate about security of e-wallet (overall mean: 3.1/5). Among all statements of Security, consumers have the highest agreement level with the claim that "*the transaction's information will not be revealed when using E-wallet*". Specifically, this criterion has the rate 3.13/5. Meanwhile, consumers do not believe that the "*personal information will be secured well when paying by E-wallet*". Such opinions are showed by the lowest agreement rate: 3.07 on a scale of 5. However, in general, the agreement rates of all 2 criteria of e-wallet's security are tending to be from average to above.

Consumers' evaluation toward e-wallet's ease of use:

Ease of use toward e-wallet is the second preferred among 5 factors. The overall evaluation is 3.4/5. Consumers have the highest agreement level with the claim that "*E-wallet has diverse and attractive services*". Specifically, this criterion is rated 3.45/5. Meanwhile, consumers think that E-wallet is not meeting the *customer service and qualities requirement*. Such opinions are showed by the lowest agreement rate 3.38 on a scale of 5. However, in general, the agreement rates of all 2 criteria of e-wallet's ease of use are all above average and the gap between the highest and the lowest is not very large.

Consumers' evaluation toward e-wallet's cost:

Consumers have the lowest disagreement level with the claim that "*The cost of using E-wallet is very high*". Specifically, this criterion is rated 2.96/5. Meanwhile, consumers believe some issues still often occur when using e-wallet because the statement "*not often occur issues*" has the lowest agreement rate 2.56 on a scale of 5. Therefore, in general, the agreement level of all 3 criteria regarding to Cost of E-wallet is low (2.7/5) and tend to the disagreement side.

Consumers' evaluation toward e-wallet's choosing intention:

Consumers have the highest agreement level with the claim that *they intend to choose e-wallet if having appropriate condition* and *they will introduce this payment method to others*. Specifically, this criterion is both rated 3.46/5. However, consumers do not prioritize the claim that *they will choose E-wallet for the next online shopping time.* Such opinion showed by the lowest agreement rate 3.21 on a scale of 5. However, in general, the agreement rates of all 3 criteria of intention to choose e-wallet are all above average (3.37/5) and the gap between the highest and the lowest is not very large. The results indicate that consumers are likely to choose e-wallet and introduce to others but not set as a priority.

The impact of factors on intention to use e-wallet in online shopping

In order to better understand the impact of factors on the intention to choose e-wallet when shopping online, regression analysis was used and gave the following results.

The modified R2 value of the model is 0.406 which indicates that there are 40.6% variance of the variable "The intention to choose E-wallet" is explained by the variance of the three independent variables (Perceived Usefulness, Perceived Ease to Use and Subjective Norms). Thus, 59.4% variation of the dependent variable is due to other factors not yet explained.

Table ANOVA shows that the sig value of F test is 0.000 (<0.05). Therefore, the linear regression model of "intention to choose e-wallet" is appropriate in general (Table 6).

Table 6 Coefficients of factors influence the intention of choosing E-wallet

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.425	0.181		2.352	0.019		
DWUsefulness	0.608	0.048	0.530	12.805	0.000	0.831	1.204
DWSubNorms	0.171	0.039	0.174	4.437	0.000	0.929	1.077
DWEasetoUse	0.080	0.032	0.100	2.483	0.013	0.880	1.136

Source Research 2018

Due to the above regression, all three independent variables: perceived usefulness, perceived ease of use, sujective norms have positive effect on the dependent variable is the intention to choose the e-wallet. Specifically, when perceived usefulness, perceived ease of use, subjective norms increases by 1 unit, the intention of choosing e-wallet increases 0.608; 0.171; 0.080 units respectively.

6 Conclusion

Implication for e-wallet Providers

E-wallet is a new payment method in Vietnam but many people still aware of this method. However the number of consumers who actually are E-wallet users is not high. In the early stages of promoting this service, e-wallet suppliers need to create the consumers's need first, then build brand awareness, and gradually influence the choosing intention of the consumer.

E-wallet providers should focus on enhancing usefulness, ease to use and pay attention to customer perception regarding to social impact. They are three factors influence the choosing intention of customer as analyzed before. Specifically, suppliers can promote their advantages in creating modern lifestyle for consumers by showing the convenience of this payment method. Moreover, by introducing the variety and multiple features, e-wallet providers may meet the needs of many people and attract new customers effectively. However, some restrictions that e-wallet suppliers should improve to provide the best service, such as being more supportive for consumers when shopping online which can be improved by directly cooperate with some online business companies.

According to the study, customers believe that e-wallet's service is not meet the requirement. To overcome this, e-wallet providers need to ensure the process of customer support before and after using the service is timely and accuracy. With the goal of helping clients to use e-wallet effectively and faithfully with the service, the suppliers need to provide customers clear information and answer their questions carefully. Moreover, training the customer service staff to make them have appropriate knowledge and attitude when serving customers. Besides, in order to save human resources and still serve customers quickly, the vendor can create a manual in both hard and soft version for questions which are asked a lot.

Developing the most up-to-date information system for consumers: As services should be improved often, suppliers need to help customers approach with any new information as soon as possible. A solution is that basing on the customer's information, vendor can send e-mail or message to inform about any new changes.

Implication for Consumers

Consumers should have an e-wallet account because not only makes payment easier, e-wallet may have many promotion services packages to suite different group of customers.

However, customers should pay attention to terms and policies before using because the current network security is very sophisticated. Customers' accounts can be compromised at any time, especially in the Vietnamese environment where many users still do not really concern to the problem of electronic security.

Further Research

- The further research should use more external factors that have been identified in TAM and UTAUT
- In conducting further research, it is expected to have large sample size and being conducted in other big city (Ho Chi Minh City, Da Nang, etc.)
- Further research is recommended to use structural equation modeling (SEM) to analyze relationship between factors.

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Analysis of Consumption and Consumer Behavior Transformation During the Transition Period of Mongolia

Batsukh Davaasuren

1 Introduction

Mongolia had centrally planned economy from 1924 to 1990 and the government had set policies to provide equal distribution and living standard for households and individuals' life standard at same level. As results of the government policies, there was not so big gap between the living standards and income levels of households, therefore patterns of household common consumption of social classes were almost same.[1] In 1990, the transition to a market economy was undertaken and has proceeded successfully. Upon embarking the market economy, numerous changes had been taken in consumer market including number of consumers growth tended to fall and consumers shifted from a small capacity market to the larger one, local and international migration due to the seeking better education and living place, as well as disparity between urban and countryside consumers increased as a result it created uneven household income and unusual pattern of consumption or consumer behavior.[2] Moreover, opening the iron curtain of the socialism and ever changing consumer market worldwide served to the change of the consumption lifestyle and consumer attitude to goods and services.

Mongolia's economic growth has accelerated significantly last few years and so, too, has the spending power of its consumers. Real average household income has almost tripled since 1995.[3] Along with rising incomes have come greater household consumption and new Mongolian high and middle classes (income groups)

[1] Dagvadorj (1998).

[2] Davaasuren (2003).

[3] An estimation of the real average household income growth is made by using the secondary data of the Mongolian Statistical Yearbook, National Statistical Office.

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have emerged.[4] This emergency of new classes and the expanding of the consumptions are growing interest among researchers, scholars, policy makers, and businesses to analyze how consumption or consumer behavior has changed or varied over time and of what the nature of consumption culture is now compared to the past and furthermore to investigate how Mongolia's consumer behavior will evolve in the future. There are many significant questions related to the issues, such as how fundamental forces of last 30 years socioeconomic growth have affected the consumer market development and the change in household consumption pattern? How much spending power Mongolian consumers have? What are the main similarities and differences in consumer behavior of Mongolia from other Asian nations? How the pictures of consumer behavior vary in Mongolia from others? For discovering answers to the above questions, the study tries to examine the current situation and trend of Mongolian consumer market, and the specific features of consumer behavior transformation.

2 Literature Review

With the rise in free market principles and the concept of institutionalization, agencies have increasingly focused on understanding consumer behavior in a market. Consumer behavior is unpredictable and has been changing over the years because of numerous influences, including demographic, social, economic, cultural, political, psychological, and personality forces.[5] Peter and Olson (2008) propose three major approaches to studying consumer actions in terms of theories and research methodologies. Very new approach of them is interpretive approach which is based on theories and methods from cultural anthropology, seeks to develop a deep understanding of consumption and its meaning. The second one is traditional approach which is based on the theories and methods from behavioral psychology and sociology trying to explain consumer decision making and behavior. Lastly, the marketing science approach which is based on the thoeries and methods from economics and statistics, revealing dynamic changes in aggregate of consumers and developing models to predict the impact of marketing strategies on consumer choice and behavior. The scholars reviewed that although primary objective and research methods of these three approaches (interpretive approach's primary methods are interviews, focus group; traditional approach's—survey, experiement; and marketing science approach's-math modeling, simulation) are different from each others, the all approaches have value and provide insights into consumer behavior and marketing strategy in different ways and at different levels of analysis. Since, for examining patterns on consumption behavior studies, two approaches, such as the interpretive and traditional approach are considered for use.

[4]Davaasuren (2003).

[5]Fred (2006).

In conducting consumer studies, scholars and researchers generally have relied on another two major approaches, in terms of subjects of the consumer research. The first approach which is concerned with the behavior of individual consumers or micro behavior is called the study of consumer behavior, and the second one, which is concerned with behavior of aggregate consumption or macro behavior, is called the study of consumption behavior.[6] The study of consumer behavior focuses on how individual consumers and families or households make decisions about how to spend their available resources of time, effort, and money on consumption-related items. That includes what consumers buy, why they buy it, when and where they buy it, how often they buy and use it, how they evaluate it after purchase, the impact of such evaluations on future purchases, and how they dispose of it, what kinds of factors influence this decision making (Schiffman and Kanuk 2010; Peter and Olson 2008; see also Olin et al. 1990). In other words, the main point in consumer behavior studies is the consumer decision-making process.

Theoretically, there are two main factors, external or environmental factors and internal or personal factors that influence decision making at the micro level of consumer analysis. Environmental factors include physical stimuli, such as products, information, advertisements, and shops that can affect a consumer's specific thoughts, feelings, and behaviors. They also include social stimuli, such as face-to-face social interactions among families and reference groups that influence consumers since these groups are affected by macro social environments of culture, subculture, and social class. These factors can have a strong influence on consumer knowledge and feelings about products, services, and on consumption behavior. (Peter and Olson 2008).

Personal factors include individual demographic characteristics, past experiences, knowledge, attitude, and behavior.[7] Adequate case study and theoretical discussion can be found in the marketing and psychology literature of the strong influence of internal factors on decision making. For example: Juliusson et al. (2005) show how a consumer's past experience influence their future decision making. Cohen (1972) considered a consumer's specific attitude or behavior to vary considerably depending upon the relevant positions in the age and sex groupings, family groupings, occupational groupings, friendship or interest groupings, and status groupings that he or she occupies.[8] Bruin et al. (2007) demonstrate that consumers' decision making is influenced by their age, socioeconomic status, and cognitive abilities. And interpret that there are significant differences in decision making across age, such as that cognitive functions decline as a result of age.

A consumption model was created by Schiffman and Kanuk (2010) as the basis for explaining consumer behavior at micro level. According to the model the experience of consuming products and services contributes to consumer satisfaction and overall quality of life. These consumption experiences, which build consumption patterns, in

[6]Glok and Nicosia (1964). And see Francisco M. Nicosia, "*Consumer Decision Processes*", Englewood Cliffs, New Jersey, Prentice Hall.

[7]Olin et al. (1990).

[8]Cohen (1972).

turn, affect consumer's future decision-making processes. Thus, given the importance of experiences, a broader perspective of consumer behavior might view consumer choices as the beginning of a consumption process. In this context, the product choice or buying decision is an input into a process of consumption.[9]

The study of consumption behavior at the macro level is concerned with the description and explanation of the behavior of aggregates of individuals or households at a given time or over a period of time. The subject of the study in consumption behavior at the aggregate level parallels that of consumer behavior at the individual level. (Nicosia and Glok 1964) That includes the distribution of population or households by age, sex, location, education, and other demographic variables and followed by income distribution, consumption expenditures, consumption of goods and services. Although this kind of studies is carried out statistically, for the most part they are estimated dynamically. This is a main point in studying changes of consumption behavior over time.

Very few researches have examined the issue of Mongolian consumer behavior and consumption in a consumer market. This study attempts to examine current development of consumer market, and analyze the specific features of consumption and consumer behavior changes in Mongolia during the transition period.

3 Overview of Mongolia

Mongolia, which lies in the northeast center of the Asian continent, has a vast territory of approximately 1.56 million sq.km, and a sparse population (3.3 million). (See Table 1).

Table 1 Overview of Mongolia

	Indicators	Mongolia
1	Territory [sq.km, (rank)]*	1,564,116 (19)
2	Population, total (millions), 2019	3.3
3	Number of households/thousand/, 2019**	897.4
4	Size of household (person), 2019**	3.7
5	United Nations, Human development index (HDI rank, out of 189 countries)***	0.735 (92)
6	GDP per capita, by World Bank Atlas method, USD	4.295 USD
7	Life expectancy at birth (years)***	69.7

Sources *Geography IQ World Ranking, https://www.geographyiq.com/ranking/rankings.htm
**Mongolian Statistical Information Service, https://www.1212.mn
***Human Development Data 2019, https://hdr.undp.org/en/data

[9] Schiffman and Kanuk (2010).

Mongolia is one of the transition economies making the shift from central planned economy to the market one since 1990. According to the World Bank classification, Mongolia belongs to lower middle group with GNI per capita.[10]

One of important indicators that represent well-being and life chances of population, is Human Development Index (HDI). The 2019 HDI for Mongolia is 0.735, which gives the country a rank of 92th place out of 189 countries. GDP per capita in Mongolia is estimated 4.295 USD and Mongolians period of life is almost 70 years.

Mongolia has a comparative advantage in natural resources with its vast land. This advantage is reflected in the development of the economic sectors of the country. In Mongolian GDP, 23.7% is from mining & quarrying, 48.0% from the service sector, 11% from manufacturing, and another 10.7% from agriculture.

4 Consumption and Consumer Behavior Transformation in Mongolia

4.1 Demographic Characteristics of the Consumer Market in Mongolia

The consumer market is composed of individuals and households who purchase goods and services for personal or family use. For penetrating the consumer market, marketers primarily should concern with the market structures, which can be defined in terms of geographic (population distribution, migration), and demographic (consumer age, gender, income, education etc.) variables.

Mongolian population or overall consumers has increased five times from 647,500 to 3.3 million during the period between 1918 and 2019 or last 100 years. The growth rate of population grew from in average of 0.9% during 1944 and 1956 to 2.9% during 1969–1979 and slowed down from 2.5% during 1979 and 1989 to 1.4% during 1989–2000[11] and again started to increase and reached to 1.8% in 2008 decreasing by 1.0% point compared to the two decades ago. The growth rate accelerated from the 1960s due to the successful implementation of social and population policy. The growth rate slowed during the 1990s, as Mongolia experienced the transition from a central planned economy to a free market. It was a hard time to live in Mongolia as the people were suffering from economic and social difficulties related to household income, inflation, unemployment, high cost of housing and child care.

Consumer consumption behavior is directly dependent on demographic characteristics since consumption market depends on the distribution of age groups that shows distinctive behavior in the market. The market for children has been the biggest from

[10]Data from https://info.worldbank.org Totally, 210 economies are divided among income groups according to gross national income (GNI) per capita, calculated using the World Bank Atlas method.

[11]The National Statistical Office of Mongolia, 2001. Population and housing census (2010): *Main results*, Ulaanbaatar.

among the groups (31.5% of market share) since the 1990s. Some previous studies have demonstrated that children market spends huge money to their needs and they have a major influence on household purchase and consumption (Table 2).

Younger segment of Mongolia or baby boomers are people born during the 1980s. In 2019, this group consists 14.1% of the total population. Although the family size has decreased since the beginning of the 2000s, the sheer size of the bloomer group led to increase in births in the 2010s—a "baby boom echo". Boomers who are new parents are especially attractive to marketers. The market for children is expected to expand in the future according to the baby boom in progress. The people aged between 25 and 39, called "young adult consumers" are 25% and people aged from 40 to 59 are 22% in the total consumers. A market share of older consumer is the smallest around 7% of the total population in Mongolia.

Mongolia has urbanized rapidly since the past 50 years. The proportion of people who live in urban areas grew from 21.6 to 51.2% from 1956 to 1979 and reached 68.5% in 2019. Acceleration of this urbanization process in Mongolia is

Table 2 Population in Mongolian consumer market, by age group, end of the year

Age group	1990	2000	2019
Total population (thousand)	**2153.4**	**2407.5**	**3296.9**
Under 1	3.3	1.8	11.7
1–4	12.6	7.8	
5–9	13.5	11.1	11.3
10–14	12.1	13.1	8.5
Subtotal, percent	**41.5**	**33.8**	**31.5**
15–19	11.0	11.5	6.8
20–24	9.7	10.4	7.3
Subtotal, percent	**20.7**	**21.9**	**14.1**
25–29	8.7	9.1	8.4
30–34	7.1	7.9	9.2
35–39	4.5	7.2	7.6
Subtotal, percent	**20.3**	**24.2**	**25.2**
40–44	3.4	5.8	6.8
45–49	3.0	3.7	6.0
50–54	2.8	2.8	5.0
55–59	2.4	2.4	4.3
Subtotal, percent	**11.6**	**14.7**	**22.1**
60–64	1.8	1.9	2.9
65–69	1.5	1.5	1.7
70+	2.6	2.1	2.4
Subtotal, percent	**5.9**	**5.5**	**7.0**

Sources Mongolian statistical information service, https://www.1212.mn

directly related to some historical achievements in establishing industrial regions, constructing national infrastructures, and developing crop farming in the river valleys during the socialist period, and getting a human right for all citizens of residing equally within territory by Constitution in 1992.

The growth of urban population was mainly due to the increase in internal migration and reclassification of urban areas and towns. The number of urban center, which has at least 10,000 inhabitants reached 44. Capital Ulaanbaatar, the largest city or consumer market in Mongolia, consists of more than 1.5 million people including foreign residents. Almost 45% of the total population resided in Ulaanbaatar in 2019. Its population density is extremely high, reached to 328 persons per sq. km, compared to the national level of 2.1 persons. During the transition period, the migration from rural to urban has increased rapidly, due to migrant herders suffering from natural disasters, such as dzud (extreme harsh winter) and drought occurring frequently in the last few years. A UNDP migration report indicated that the main reasons for the internal migration are finding job, improving their livelihood, studying, and getting closer to the market.[12]

A household is a basic consumption unit for most consumer goods.[13] Marketers should take into consideration in the households or families, their consumption behavior and changes. Because, a structural changes in family pattern is one of the main reasons for changing consumption behavior. Number of households doubled from 449.400 to 897.400 during the period between 1990 and 2019 of the transition.

4.2 Consumption Patterns in Mongolia

Mongolian household monthly expenditure has been increased 4 times since the beginning of 1990s, along with the growth of household income. The growth rate of household monthly expenditure is always higher than that of the household income. Examining a trend of household expenditure structure, shares of foodstuffs and non-food expenses have been gradually decreased during the transition years. Among items of the consumption, transportation and communication expense has the highest growth rate (Table 3).

Considering the structure of household spending, about 21% of the expenditure is for the consumption of foodstuffs, almost 77% is for services and non-food consumption. The consumption patterns change for both micro and macro reasons in Mongolia. At micro level, it is obviously, changes are attributable to individual consumer's changing tastes. The changes in the macro level have characterized in Mongolia since 1992, upon shifted to new economic system. During the last thirty years, there has been clearly shift from the non-varied consumption pattern to global based various ranged consumption pattern and lifestyle in Mongolia.

[12]MSWL, PTRC, UNDP, 2004 *Poverty and Migration in Ulaanbaatar*, Survey report, UB.

[13]Hawkins et al. (1992).

Table 3 Composition of monthly average expenditures per household in Mongolia

Items	1992	2000	2008*	2019
Monetary Expenditure, MNT	64,059.4 (100.0)	108,011 (100.0)	389,278 (100.0)	1,303,512 (100.0)
Food expenses, percent	43.57	41.70	38	21.1
Non-food expenses, percent	43.36	33.79	30	76.7
Services, percent	13.07	24.36	33	
Savings, percent	–	0.15	–	–

(Unit: %, except total amounts)
Sources "Mongolia in a market system" statistical yearbook 1989–2002, Ulaanbaatar (2004)
*data from Main Report of "household socio-economic survey" 2007–2008 (2009)
Mongolian statistical information service, https://www.1212.mn

Foodstuff Consumption Behaviors in Mongolia

According to the statistical data, Mongolian major foodstuffs are meat and meat products, milk and dairy products, and flour and bakery products, which are consumed respectively 8.5 kg, 11.0 kg, and 10.1 kg a month by an adult. Rice and vegetables consumption are slight amount of 1.9–2.6 kg respectively (see Table 4).

The food consumption pattern in Mongolia has gradually changed from the consumption of meat products to egg, vegetables and cereal consumption. Per capita meat consumption has decreased since the beginning of the 1990s. The data shows that the average monthly per capita meat and meat product consumption in Mongolia dropped from 9.1 kg in 1992 to 8.5 kg in 2019. Per capita consumption of every food except for meat products has increased, but consumption of flour and bakery products (from 6.4 to 10.1 kg), potatoes (from 1 to 2.6 kg), vegetables (0.3 to 2.1 kg), and eggs (from 0.9 to 5.2 pieces) have significantly increased during the transition years. This change in the consumption pattern is attributed to the following reasons: the opening of the economy with the implementation of free trade policy and citizens' freedom

Table 4 Monthly consumption of foodstuffs, per adult equivalent in Mongolia

	1992	2000	2005	2010	2019	2019/1992
Meat and meat products	9.1	10.0	8.3	8.4	8.5	−0.6
Milk and milk products	10.0	10.9	11.7	10.8	11.0	+ 1.0
Flour and bakery products	6.4	9.0	9.9	10.7	10.1	+ 3.7
Rice	0.1	1.2	2.2	1.7	1.9	+ 1.8
Potatoes	1.0	1.8	3.6	3.3	2.6	+ 1.6
Vegetables	0.3	1.0	2.1	1.8	2.1	+ 0.8
Egg (unit = one egg)*	0.9	0.7	1.6	2.7	5.2	+ 4.3

(Unit: kg)
Sources "Mongolia in a market system" statistical yearbook 1989–2002, Ulaanbaatar (2004);
Mongolian statistical information service, https://www.1212.mn

to visit abroad, the freedom to run a private business, increase income, acceleration of the urbanization, and the emergence of middle and high income groups, which provide access to more consumption of other foods, diversifying food consumption patterns and living healthily.

Since food habits reflect a lifestyle formed in the process of adapting to the environment, eating habits can be the optimum source of nutrients in one's culture. Mongolians have historically enjoyed eating meat, since the tradition suits their desert-dwelling, nomadic lifestyle, as it is often difficult to care for agricultural land in the severe climate. It is absurd to say that Mongolians should improve their diet in order to keep healthy by consuming more vegetables and reducing eating meat.

A concern, however, is that Mongolian lifestyle has been urbanizing. In fact, in the last 50 years more than 40% of the rural population has moved to an urban area, giving up nomadic life. Even then, their diet has been pushed toward nomadic meat-eating by economic development.

4.3 Some Features of Consumer Behaviors in Mongolia

As mentioned in the above literature review, theoretically, there are two major factors, environmental and personal factors that influence a decision making at micro level of consumer analysis. From them the environmental factors include physical stimuli, such as products, prices, advertisements, shops that can affect consumer behaviors; and social stimuli, such as face-to-face social interactions among families and reference groups that may influence usage of the product category, a type of the product and/or brand used. In this section, considering how environmental factors influence the buying decision making or consumer behavior of Mongolian consumers in terms of income brackets. For revealing specifics of the consumer decision making, the survey research is conducted. Over 1500 people were surveyed. Main objectives of the survey are the follows.

- To identify who makes final decision to purchase convenience goods (those the consumer purchases frequently with minimal effort), and shopping goods (those the consumer characteristically compares on such basis as quality, price, and brand) in the family.
- To determine which marketing stimulus factors are strongly influence to make decision to buy those products and to examine similarities and differences between income groups in Mongolia.

Obviously, consumptions vary depending on the consumers' choice from categories of the product and whether the product is for household or individual usage. Therefore, in conducting the field research for revealing the consumer decision making, we selected four kinds of products such as sausage and vegetables from the food in the convenience goods category; and television from the household goods, and cellular phone for the individual usage in the shopping goods category.

Table 5 Household decision-making, percent of respondents

	Sausage/Ham	Vegetables	Television	Cellular phone
Husband dominated	14.7	9.7	**26.7**	24
Wife dominated	**58.5**	**65.1**	13.7	19
Child dominated	13	12	4	17.1
Other members dominated	5.3	6	7.3	4.4
Joint with spouse (either equal)	4.3	3	20.4	17
All members equal decision	4.2	4.2	**27.9**	**28.5**

4.3.1 Household Decision Making and Consumption Related Roles

Major products such as housing, television and furniture, are consumed more by households than by individuals. Consumer decision making of household products for the family consumption is different from the individual decision making for their own consumption, because the household consists of at least two related persons and its decision making depends on each household member's degree of involvement in the decision process. The household members have different roles in the decision making, such as information gatherer, influencer, decision maker, purchaser, and user. For developing marketing strategies which can influence to the decision making of households, marketers must decide who in the households plays which role in their decision making. The relative influence of husband and wife can be categorized as husband dominant, wife dominants, joint decision, or individualized decisions (Table 5).[14]

The research comparing family decision-making patterns reveals that the purchase of the food such as sausage/ham and vegetables is strongly wife dominated (more than 58% and about 65% respectively), whereas television buying decision making more often is husband dominated (around 30%) or make decision jointly (about 30%) in Mongolia. In the case of cellular phone decision-making, the children's influence is stronger than other products. The high degree of the children's influence in the decision-making is related to changes in family daily life that is contributed by information technology rapid development. The teenagers and unmarried children in the family have spent considerable time on the internet and search and find information of various products in the market and become not only information gatherer but also influencer or decision maker in their family consumption choices. It has been shown that the children's internet usage contributes significantly to the family consumption.

4.3.2 Marketing Stimulus Influences on Consumer Behavior

One type of input is physical stimuli from the outside environment; the other type of input is provided by individuals in the form of certain predispositions based on

[14]Hawkins et al. (1992).

Table 6 Evaluation to the variables of marketing stimulus that influence on decision making to buy Sausage/Ham and Vegetables (scale of a 1-to-5, not important at all-to-extremely important)

Factors	Sausage/Ham		Vegetables	
	%*	Mean	%*	Mean
Caloric intake	68.9	4.01	68.9	4.10
Freshness	68.5	4.00	74.9	4.16
Taste and smell	71.9	4.10	78.3	4.30
Brand loyalty	57.3	3.69	59.2	3.78
Packaging	59.2	3.81	64.4	3.90
Expiry date	71.2	4.10	76.8	4.22
Country of manufacturer	61.8	3.79	62.2	3.82
Price level	67.8	4.02	68.9	4.02
Reputation of the retailer	43.8	3.41	46.1	3.50
Promotional events (sale, gift…)	47.6	3.47	49.1	3.51
Advertisement (TV, internet…)	37.5	3.26	39.3	3.21
Opinion of the previous user	47.6	3.44	44.6	3.34

*Percent of respondents who answered 'extremely important' and 'somewhat important'

the previous experience. The combination of these two very different kinds of inputs produces for each of consumers a very personal picture in the world.[15] Because each person is a unique individual, with unique experiences, needs, wants, desires, and expectations. This uniqueness is always reflected in the consumption pattern and consumer decision-making.

Consumers receive physical stimuli or the specifics of the marketing strategies of different products and services from the environment and responds to these stimuli in terms of either buying or not buying product. Marketing stimulus include various kinds of variables that affect consumer decision making, such as nature of the product, its physical attributes, packaging, brand name, price, advertisements and commercials etc. Tables 6 and 7 demonstrate comparisons of how marketing stimulus influence on the decision making to purchase the food and non-food products in consumer market in Mongolia.

Taste and smell, expiry date or freshness (70–80%) are major factors that ranks among consumer influencing factors on decision making to buy foods such as sausage/ham and vegetables. However, in case of purchasing decision making for shopping goods such as television and cellular phone, majority (75% and more) of respondents prefer the product design and product with modern technology.

In decision making to buy the selected foods, about 60% of respondents prefer the brand loyalty. For making decision in terms of television and cellular phone, the percentage of respondents who answered brand loyalty was extremely or somewhat important, is about 70% in Mongolia or higher than the data of the above food

[15] Schiffman and Kanuk (2010).

Table 7 Evaluation to the variables of marketing stimulus that influence on decision making to buy TV and Cellular phone (scale of a 1-to-5, not important at all-to-extremely important)

Factors	Television		Cellular phone	
	%*	Mean	%*	Mean
Product design	77.5	4.32	80.1	4.38
Size and weight	77.2	4.22	66.7	3.98
Various functions	–	–	70.8	4.09
Modern technology (3D …)	79.0	4.26	75.3	4.19
Brand loyalty	71.9	4.04	67.4	3.96
Date of manufacturing (model)	70.0	3.96	65.5	3.93
Length of warranty	74.2	4.18	76.0	4.20
Country of manufacturer	73.0	4.04	67.0	3.95
Price level	74.5	4.13	67.8	4.04
Reputation of the retailer	58.8	3.69	55.8	3.68
Promotional events (sale, gift …)	59.9	3.81	56.2	3.76
Advertisement (TV, internet …)	45.7	3.46	48.3	3.50
Opinion of the previous user (word of mouth)	50.2	3.58	49.4	3.58

*Percent of respondents who answered 'extremely important' and 'somewhat important'

purchasing decision. This data show us, although Mongolians have more preferences of the brand loyalty in shopping goods consumption, in general sense the importance of the brand loyalty has grown when consumers buy relatively expensive goods.

One of the very important factors, which affect to the consumption is Origin of the product. As the survey results, majority (62%) of respondents think origin of the food, sausage/ham and vegetables is the most important factor when they make a decision whether buy or not. Most respondents think origin of product especially food is directly related to product quality performance and food safety issues. A price is also a stronger influencer to the consumer decision-making. The percentages of respondents who make decision to buy foods based on the level of price are about 70% in Mongolia. When consumers buy the shopping goods, the percentage of consumers who give importance in the product's price level is higher than the above by 5%.

Among the marketing promotion tools, the sales promotional event is more important influencing factor than the advertisements and commercials and these promotion tools' importance is much greater when people purchase the shopping goods in Mongolia. Furthermore, word of mouth is the primary factor behind 45–50% of all purchasing decision. Its influence is greatest when products are relatively expensive.

It is worthwhile for revealing the consumption behavior of Mongolian consumers in the income groups with regard to their preference for nature of the product, its physical attributes, technology, package, brand's image, level of the price, advertisements and commercials. The survey's one of the objectives was to examine degree of the consumers' preferences for the factors of marketing stimulus in income groups, when they make decision to buy various products. In conducting the survey, we have

divided all households into five different income groups such as low income, lower middle income, middle income, upper middle income, and high income group, based on the household monthly income in statistics.

From the results of survey for revealing the consumers' preferences for the factors of marketing stimulus in income groups of Mongolia, we found some noteworthy following findings. Level of the price is the most important factor, which can affect to Mongolian low income consumers' purchasing decisions of foods. The survey result shows most (more than 80%) of people who belong to low income group prefer to buy cheaper foods, and about 60% of those in certain group give importance to the promotional events, like discounting, providing free samples or gifts. But majority of the respondents, except respondents in low income, give more importance to the food freshness, taste and smell, caloric intake, and expiry date than the product's level of price and marketing promotion.

As considering the marketing stimulus influence on the decision making of the consumers in different income groups in terms of purchasing shopping goods, majority (70% and over) of the respondents who belong to the low income groups of the country give more importance to the level of price and product design. The consumers of upper than low income group have more preferences to the product design, technology, brand loyalty, and price level.

5 Conclusion

With the rise in the significance of free-market systems in Mongolia, market institutions and agents have increasingly focused on understanding consumer behavior. Consumer behavior has intrinsically been shown to be unpredictable and to change over the years because of numerous influences including demographic, social, economic, cultural, and personality factors as well as external relations. The paper presents and analyzes the patterns of the consumption and consumer behaviors transformation in Mongolia during the transition period. The results of the study of consumption and consumer behavior in Mongolia can be used in the following two ways. For the macroeconomic policy, policy planner will utilize the results of the research as a reference for establishment of long-term demographic trend, developing the powers latent for increasing income, improving the equalization among the income groups' living, and promoting trade policy. For the firm's level, the decision makers will utilize the outcomes of the study as a fundamental marketing in the sense that the content is based on an relationship of consumption variables in a consistent way. The current research outcomes would contribute to the solution of challenging issues for market agents.

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