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OPERATION CHARACTERISTICS OF NEWLY ESTABLISHED ENTERPRISES IN CENTRAL HIGHLANDS IN THE CONTEXT OF THE FOURTH INDUSTRIAL REVOLUTION

Abstract: The Central Highlands region holds a particularly important strategic position in Vietnam. It is considered a potential area for newly established enterprises (NEEs), but its entrepreneurs may face more difficulties than in other regions. The paper analyzes some outstanding characteristics of NEEs in Central Highlands in comparison to other regions, with the rate of NEEs tended to increase, but it was not stable. NEEs in Central Highlands generally have limited points compared to other regions, such as: the majority of startups are small business and microenterprises, lack of capital to invest in new technology, the rate of young workers is low, the qualifications of many workers are limited, the ICT infrastructure and regional links are still weak. The paper also proposes some solutions for Central Highlands to help its NEEs take advantage of opportunities and minimize the challenges brought about by the 4th industrial revolution.

Keywords: industrial revolution, newly established enterprises, Central Highlands, Vietnam.

Introduction

The Central Highlands (Tây Nguyên) region of Vietnam consists of five provinces including: Dak Lak, Dak Nong, Gia Lai, Kon Tum, Lam Dong (Figure 1). Central Highlands have a great advantage in fertile soil, together with the diversity of climate and forest resources that give a great potential in agriculture, forestry, and animal husbandry. Mineral resources in Central Highlands are also quite diverse, numerous, and evenly distributed in the provinces.

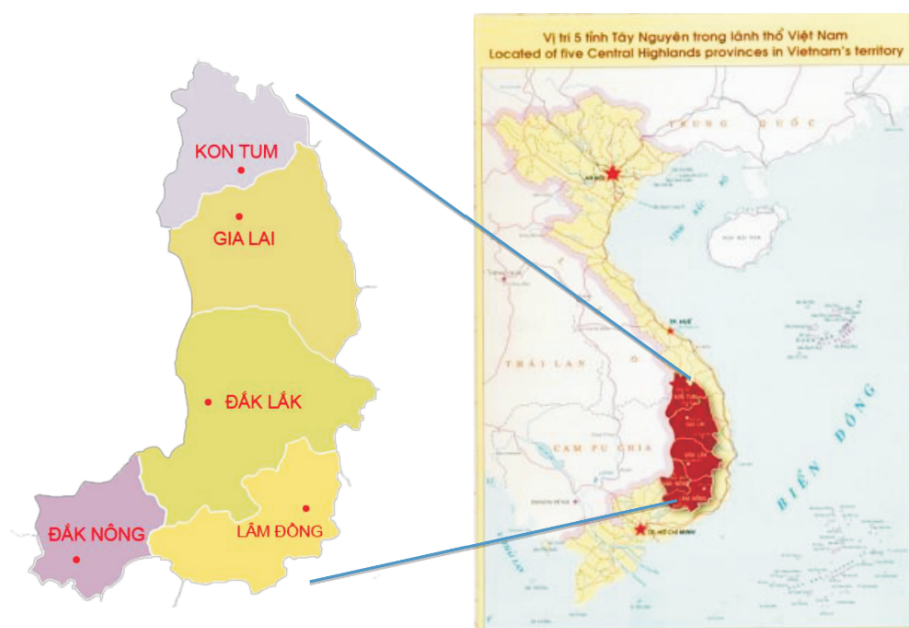


Fig. 1. Map of Central Highlands (Tây Nguyên) in Vietnam. Source: [ADB 2018: 3]

Central Highlands is also a multiethnic and multicultural region. It is the residence of 47 ethnic groups, with many characteristics and nuances. The topography of Central Highlands varies from high mountains to rich valleys, creating favorable conditions all year round. Therefore, this is also the land with great potential and advantages to attract tourists.

In general, the Central Highlands region has many advantages but has not yet explored its strengths. This region contributes about 7.33 % of the gross domestic product (GDP), according to 2011 data [Bach Hong Viet 2013: 688]. Compared to other regions, Central Highlands is still a less developed region.

Therefore, clarifying the causes of this fact and proposing recommendations to overcome this limitation, especially in the context of the 4th industrial revolution (IR 4.0) is essential.

Central Highlands is affirmed by the Communist Party of Vietnam (CPV) and the Government as a region that holds a particularly important strategic position in the defense, security, environment, and socioeconomic development of the country. The goal is to make it become a key economic region. This task is more concerned in the rapid development of science and technology context, when the world is witnessing stronger impact of the IR 4.0.

Enterprises play an important role in the Central Highlands provinces. According to 2017 data, the Central Highlands region has 13,349 operating businesses, accounting for 4.93 % of the total enterprises, creating jobs for 242,188 workers, accounting for 27.83 % of the total number of employees at enterprises of the region [GSO 2018a: 86—87]. This rate is quite low compared to other regions, because many workers in the Central Highlands provinces are engaged in the agricultural sector. As of 2015, agriculture, forestry, and fisheries still account for 44.61 % of the total economic structure of the Central Highlands provinces [MPI 2017: 19—20]. This shows that the potential development of businesses in the region is still very large, and the development of Central Highlands is not fully exploited due to many limitations.

IR 4.0 can make breakthrough development of Central Highlands, improve the living standard of local people, including many ethnic minorities of the region.

The hypothesis of the study are:

H1: Is the Central Highlands region of Vietnam limited in terms of natural geographical conditions, number and qualification of workers?

H2: Is the economic structure of Central Highlands of Vietnam limited and slowly improved?

Using national statistics and secondary data on businesses and NEEs in Vietnam recently, this paper focuses on performance characteristics of NEEs of Central Highlands in the past few years, in order to have better understanding about this kind of enterprises of Vietnam's Central Highlands, its opportunities and challenges in the context of the IR 4.0, and make some recommendations for the Central Highlands provinces.

Literature review

The IR 4.0 is mentioned by many authors in the past few years, with the viewpoints that it will bring about many changes, great impact on all areas and on a global scale. Typical research on this issue is Schwab (2016), presenting key technological changes in the IR 4.0 and analyzing its policy implications. Along this topic, UNIDO (2018), Christian Schroder (2016) analyzed the concept of IR 4.0 and related issues, analyzed opportunities for companies in general, SMEs and startups in particular.

In Vietnam, there have been many studies on IR 4.0. NAPA, LKYSPP, VIE (2018) focused on analyzing the impact of IR 4.0 on Vietnam, especially the challenges for state governance that requires changes to meet requirements of the new era. Yevgeni Kanayev, Nguyen Quang Thuong,

Vi Thi Huong Hue (2019) stated that Vietnam needs to take urgent remedial measures to grasp the emerging possibilities of the foundations for digitalization of businesses. Yevgeni Kanayev, Rebecca Darnell, Dinh Le Hong Giang (2018) analyzed accumulated shortcomings of Vietnam higher education system and the challenges on IR 4.0, especially its conservative mindset regarding the development of human resources.

Beside a number of regular reports on the NEEs, there have been few studies analyzing the opportunities and challenges of NEEs in the context of IR 4.0, most focusing on startups and using NEEs-related data, due to Vietnamese regulations, startups are defined as enterprises that have an operating period of no more than five years from the date of the first business registration certificate [Prime Minister 2016: 2] and “*it is impossible to separate the startup group from newly established businesses*” [Bui Nhat Quang 2017: 38].

Some reports used NEEs-related data to analyze policies to encourage the development of startup enterprises in Vietnam in the context of IR 4.0 such as: Bui Nhat Quang (2017), GEM & VCCI (2018). However, Economica (2017) analyzed the necessary factors to make Vietnam become a good land for startups based on the views and desires of individuals involved in starting a business. Some authors focused on analyzing opportunities and challenges for the economy, especially SMEs and startups in Vietnam. Phan Thi Ngoc Uyen (2017) believed that Vietnam startups are currently lacking of enterprises that directly apply modern technology production due to limited capital. Meanwhile, Bui Nhat Quang (2017) showed that the majority of Vietnam startups are small businesses and microenterprises, not interested in the application of technology, have not enough workers with high scientific and technical qualifications.

The GEM & VCCI (2018) focused on analyzing the status of startups in Vietnam, with the rate in the high value-added sectors are gradually improved, entrepreneurial ecosystem has developed in recent years. Meanwhile, the MPI (2018) analyzed startup activities in Vietnam with a more favorable development, the rate of entrepreneurs with bachelor degree has increased, starting a business at a younger age, have certain experience and business understanding.

There have not been many studies analyzing the impact of IR 4.0 on NEEs in Central Highlands of Vietnam. Besides, some articles reviewed specific startups in the Central Highlands provinces, a number of other papers analyzed the rapidly emerging startup trend in this region such as: *Le Nhuan* (2018); *Nguyen Phuc* (2018). These papers focused on analyzing the potentials for starting a business, the difficulties faced by entrepreneurs in the region and support measures of local government agencies. In general, Central Highlands is considered a potential area for startups, but its entrepreneurs may face more difficulties than in other regions.

Situation of newly established enterprises in Central Highlands of Vietnam in the context of the 4th industrial revolution

Central Highlands has an important position in terms of national defense, security, economy, and society. However, due to the low economic starting point, the size of Central Highlands' economy is still small, so the positive changes of its economy in recent years, including the increase of NEEs, has not created enough force to improve its role in the national economy.

The most important feature of the IR 4.0 is the connection based on the innovation platform. The IR 4.0 is seen as a revolution characterized by the convergence of biotech with real and virtual digital technologies, that are rapidly and creatively applied to change the global economy, creating new products and services, thus posing many opportunities and challenges for businesses in general and NEEs in particular.

Positive characteristics in the operation of newly established enterprises in Central Highlands of Vietnam

NEEs in the Central Highlands region are tending to increase, although the growth is not stable. The growth rate of newly established enterprises in Central Highlands in 2014, 2015, 2016, and 2018 was lower than the overall growth rate of the whole countries in this period (Table 1). However, this rate in Central Highlands in 2017 reached 23 %, much higher than the national average growth rate of 15.2 %.

Table 1. Growth rate of the number of NEEs by region of Vietnam, the 2014—2018 period (Unit: %)

Region	2014	2015	2016	2017	2018
Red River Delta	-1,9	31,4	18,3	13,8	2,1
Northern midlands and mountain areas	-1,6	28,4	14,0	26,4	-0,5
North Central and Central coastal areas	-4,1	24,2	20,2	18,4	7,2
Central Highlands	-5,2	-4,6	8,6	23,0	-0,5
Southeast	0,4	27,8	15,4	14,0	4,0
Mekong River Delta	-16,6	19,4	9,4	14,0	3,1
The country total	-2,7	26,6	16,2	15,2	3,5

Source: [ABR 2014a], [ABR 2015a], [ABR 2016a], [ABR 2017a], [ABR 2018], [GSO 2018b].

The cause of this situation is due to the new legal framework, especially the 2014 Enterprise Law, along with the Government’s solutions to support and encourage the development of businesses nationwide. Therefore, the number of NEEs in all regions has increased in 2015, 2016 and 2017.

While the total number of enterprises in the Central Highlands region is still small, the range of its development is fluctuated larger than that of other regions. Although in 2017, Central Highlands had 3,236 NEEs, compared to 2,631 enterprises in 2016 (Table 2), but the number is still lowest compared to other regions in Vietnam [ABR 2017a]. In 2018, the number of NEEs slowed down nationwide after reaching the peak [ABR 2018]. In that context, the number of NEEs in Central Highlands decreased.

Table 2. Number of NEEs by region of Vietnam, 2016—2018 period (Unit: enterprises)

Region	2016	2017	2018
Red River Delta	33,453	38,075	38,873
Northern midlands and mountain areas	4,193	5,300	5,272
North Central and Central coastal areas	14,825	17,556	18,818
Central Highlands	2,631	3,236	3,219
Southeast	47,108	53,698	55,821
Mekong River Delta	7,890	8,994	9,272
The country total	110,100	126,859	131,275

Source: [ABR 2016b], [ABR 2017b], [ABR 2018], the authors’ calculations are based on data of GSO 2018b.

Thus, the number of enterprises is tending to increase recently in the region, with about 2,600—3,200 NEEs each year. More else, the Central Highlands enterprises found potential in applying new and modern technologies into production and management, improving production capa-

city, innovating products and services, reducing operation costs, meeting more accurately the customer needs.

In terms of dissolution businesses in 2016, 1,186 enterprises in Central Highlands were dissolved, increased by near three times compared to 2015. In 2016, the rate of dissolved enterprises in the whole country increased strongly too, including the increase of 107.1 % in agriculture, forestry and fishery, the highest rate among all sectors [ABR 2016b]. However, in 2017 and 2018 the proportion of dissolved enterprises in Central Highlands decreased respectively. One of the main reasons was that in 2017 and 2018 the proportion of dissolved enterprises in the agricultural sector of the whole country changed -25.5 % and +4.5 % respectively, the lowest rate among all sectors in the same period [ABR 2017b], [ABR 2018].

Some limitations in the operation of startup enterprises in Central Highlands

In general, the majority of NEEs in Central Highlands are small business and microenterprises with limited capital, so they have no capital to invest in new technologies. The average size of NEEs in the Central Highlands provinces in 2017 is 7.45 billion dong, this figure is the lowest level compared to other regions at the same time and much lower than the national average of 10.21 billion dong [ABR 2017a]. NEEs are limited in capital but they have to face many difficulties in borrowing from banks due to strict demands, such as the need for businesses to have collateral and healthy financial status, fulfill cumbersome procedures, and the possibility to use preferential interest rates only for a short time.

The proportion of workers in the Central Highlands' enterprises in middle-age (31—45 years old) and old-age (46—55) is at the second highest level compared to other regions of Vietnam (Table 3). The group of young workers (16—30) in Central Highlands is lower compared to other regions, according to 2017 data (Table 3).

Table 3. Structure of employees of Vietnam's enterprises by age group and by provinces in 2017

Region	≤30	31—45	46—55	56—60	>60
Red River Delta	34,2	43,2	15,1	1,4	3,0
Northern midlands and mountain areas	31,3	46,0	16,4	4,1	2,2
North Central and Central coastal areas	27,3	44,7	19,2	5,1	3,7
Central Highlands	28,5	45,5	18,7	4,5	2,7
Southeast	44,7	39,7	11,2	2,6	1,7
Mekong River Delta	30,3	42,0	18,6	4,9	4,1
The country total	35,2	42,7	15,3	4,0	2,8

Source: [GSO 2018a: 99].

The proportion of workers having the bachelor degree from universities in Central Highlands is relatively high compared to other regions, namely 19.7 % in 2017, while the national average is only 18.4 % at the same period. However, 37.1 % of workers in Central Highlands are untrained compared to 29.7 % as the national average (Table 4).

This fact shows that the technical and professional qualifications of many workers in this region are still low, the proportion of untrained labor is still higher than the average level of the whole country, the ability to adapt is still limited, the qualifications do not meet the market requirements in terms of foreign language and professional skills. This is also an obstacle for businesses in apply-

ing new technologies, promoting the creative capabilities of workers to minimize challenges, transforming ideas into real products and being succeed in the market.

Table 4. Structure of employees of Vietnam’s enterprises by qualification and by provinces

Qualification	Untrained	Trained under 3 months	Primary vocational level	Intermediate vocational level	College	University	Post-graduate	Others
Red River Delta	24,0	16,9	9,0	10,8	7,5	20,2	2,2	9,4
Northern midlands and mountain areas	30,1	11,1	10,7	14,7	8,0	18,5	1,3	5,6
North Central and Central coastal areas	36,7	9,5	8,1	11,6	6,6	17,6	1,3	8,6
Central Highlands	37,1	7,3	5,4	13,2	6,4	19,7	1,3	9,6
Southeast	25,8	15,4	10,2	9,8	7,1	17,1	1,3	13,4
Mekong River Delta	43,9	11,9	5,5	8,4	3,5	13,7	1,0	12,1
The country total	29,7	13,7	8,8	10,7	6,7	18,4	1,6	10,4

Source: [GSO 2018a: 105].

The ICT infrastructure in the Central Highlands region has developed considerably in recent years. However, some provinces in Central Highlands are in difficult economic and natural conditions which are not favorable for the development of ICT infrastructure. Only Lam Dong is in the top 15 provinces (in total of 63 ones) with the highest index for the development and application of ICT (according to the Report on Vietnam ICT Index), while Dak Lak is ranked in the middle group, although in some years it was in the lower group of this index. The other three provinces (Gia Lai, Dak Nong, Kon Tum) regularly ranked in the bottom group compared to other provinces in Vietnam. [MIC & VAIP 2014: 50—52], [MIC & VAIP 2015: 13—15], [MIC & VAIP 2016: 58—59], [MIC & VAIP 2017: 16—17], [MIC & VAIP 2018: 16—18]

In addition, the linkage between Central Highlands and other regions is still weak, there is lack of infrastructure and linkage planning, clear legal framework, binding mechanisms and institutions. On the other hand, there is no close connection between enterprises in order to develop and enhance competitiveness, no good connection between components in the entrepreneurial ecosystem including businesses, universities, research institutions, venture capital funds and support organizations. Therefore, NEEs’ activities have not been closely associated with the training, science-technology application and knowledge transfer, and there is no unified infrastructure to promote the comparative advantages of localities on special ecological and culture characteristics, advantages of natural conditions to develop local and regional products.

Some recommendations for the Central Highlands provinces

For helping NEEs in Central Highlands be able to take advantage of opportunities and limit challenges in the context of the IR 4.0, strong solutions are needed to be implemented at different levels.

The provinces in Central Highlands need to review their strategies and action programs, propose plans and key tasks to implement appropriately with the development of the IR 4.0, pursuant

to the Vietnam Prime Minister's Directive No.16/CT-TTg dated May 4th, 2017 on enhancing the capacity to access the 4th industrial revolution. One of the main contents of this Directive is the request of Prime Minister to focus on promoting the national innovative entrepreneurial ecosystem.

Some specific solutions need to be implemented as follows:

First, it is necessary to raise awareness of leaders of local agencies, businesses and people in the region about the IR 4.0. Providing information and strengthening communication to create a right understanding and awareness of the nature, characteristics, opportunities and challenges of the IR 4.0 for each individual, helping them have appropriate and effective approach and solution.

Second, renewing the curriculum content and methods of education and vocational training to update the programs with digital technology. Education and training institutions should analyze future market needs, create opportunities for students to apply practical skills to improve their knowledge, skills and self-discipline. NEEs need to set up recruitment strategies to attract talents. Workers also need to actively learn the new knowledge of digital technology, equip necessary skills to increase their own competitiveness.

Third, provinces in the Central Highlands region need to renew investment and funding mechanisms for research and development; propose policies and measures to strongly develop innovative NEEs and startups, support startup projects with technology application, focus on promoting innovative entrepreneurial ecosystem toward implementing specific and suitable solutions, creating favorable conditions to apply technologies on production, especially in advantages sectors such as agriculture, forestry, pharmaceuticals, and tourism.

Fourth, it is necessary to have a common development strategy of the whole Central Highlands toward the IR 4.0 and the knowledge economy to strengthen the connection between all the components of the entrepreneurial ecosystem, to support entrepreneurial activities in Central Highlands, to promote the development of NEEs and startups associated with training and transferring knowledge, science and technology in the region, to turn ideas into real products, to improve ecosystems and market conditions.

Conclusion

NEEs in Central Highlands are growing, but they are facing many challenges in the context of IR 4.0. The Central Highlands region is affirmed by the Communist Party and the government of Vietnam as a region of strategic importance, and is considered to have many untapped potentials. In order to support NEEs in Central Highlands to take advantage of opportunities and limit challenges in the context of the IR 4.0, strong solutions need to be implemented at different levels. One of the most important areas is the human resources, which should be focused through education and training to develop the capacity for taking complex jobs that require advanced levels of knowledge and skills, creative and difficult to automate.

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**ОПЕРАЦИОННЫЕ ХАРАКТЕРИСТИКИ
ВНОВЬ СОЗДАНЫХ ПРЕДПРИЯТИЙ
НА ЦЕНТРАЛЬНОМ ПЛАТО
В КОНТЕКСТЕ ЧЕТВЕРТОЙ ПРОМЫШЛЕННОЙ
РЕВОЛЮЦИИ**

Аннотация. Регион Центрального плато занимает особенно важное стратегическое положение во Вьетнаме. Он считается благоприятным местом для вновь создаваемых предприятий (ВСП), но предприниматели могут столкнуться здесь с большими трудностями, чем в других регионах. Авторы анализируют специфические характеристики ВСП на Центральном плато по сравнению с другими регионами, отмечая, что количество ВСП, как правило, возросло, но нестабильно. Выделены также слабые места по сравнению с другими регионами, например: большинство стартапов — это малые и микропредприятия, у них не хватает капитала для инвестирования в новые технологии, низка доля молодых сотрудников, ограничена квалификация многих работников, слабы инфраструктура ИКТ и региональные связи. В статье предлагаются некоторые решения, призванные помочь ВСП использовать возможности и минимизировать проблемы, вызванные Четвертой промышленной революцией.

Ключевые слова: промышленная революция, вновь создаваемые предприятия, Центральное плато, Вьетнам.

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