THE IMPACTS OF INDUSTRIAL PARKS TO SOCIO-ECONOMIC DEVELOPMENT EXPERIMENTAL RESEARCH IN THAI BINH PROVINCE, VIETNAM

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ABSTRACT

The formation of industrial parks (IPs) has brought a new face to the emerging economies with a wide range of economic and social changes. Besides, representing a lot of achievements, the IPs operational activities, in an opposite view, have exposed many issues about environment, income, economic structure shift, infrastructure, etc. Therefore, this study aims to evaluate the overall positive and negative impacts of IPs on socio-economic development of Vietnam in general and Thai Binh province in particular. According to the descriptive statistics analysis of SPSS20 software including 165 questionnaires which were sent to enterprises inside and outside 6 IPs in Thai Binh province to determine the average level as well as the standard deviation of survey objects, the implementation of Independent Sample T-Test amongst groups of enterprises inside and outside IPs to examine average difference between two groups, this research results stated in the article can be served as a basis for proposing solutions in order to promote the positive impacts and overcome the negative impacts of IP on socio-economic development of Thai Binh province.

Keywords: IP, Economic Social, Impacts, Thai Binh.

INTRODUCTION

The birth and development of IPs in developing countries is an inevitable requirement of socio-economic development process, especially from the industrialization and modernization process as well as from the international economic integration trend. IPs have not only direct contributions, but also a pervasive impact on other elements in the economy, such as stimulating the attraction for domestic investment resources; increasing the competitiveness, the innovation and technology transfer, improving the production efficiency; developing the supporting industries, paving the way for domestic enterprises to step by step integrate to the global production value chain. However, the development of IPs has caused negative impacts on the socio-economic development of Vietnam in general and Thai Binh in particular, such as the imbalance in industry structure, economic zones, backward of technology transfer, pollution of ecological environment, etc. Regarding Thai Binh a coastal province, within allowed framework, must be equipped with mechanisms, policies, strategies and suggestions to develop the industrial parks, with an aim to serve the provincial socio-economic development goals in the upcoming period. Therefore, Thai Binh province needs to research, analyze, conduct comprehensively systematic assessment toward the impacts of IPs on the province's socio-economic development in the past to make the adjustment in policies, strategies and appropriate solutions for industrial

parks in a synchronous manner. This aims to exploit and take use of the province's resources effectively for the goal of reforming growth model and economic restructure of Thai Binh in direction of fast and sustainable development and successfully implement the provincial socio-economic development strategy in the future. Therefore, this article shall study the impacts of IPs on socio-economic development of Thai Binh province.

LITERATURE REVIEW

The theory of industrial location of Weber (1929) explained the formation of industrial zones based on the principle of saving transportation costs. The basic content of this theory involves spatial model of industrial distribution based on the principle of minimizing costs and maximizing profits. This theory aimed to minimize the cost of transportation in the total cost of production in order to maximize the profitability of investors. It was also based on the fact that transport costs account for a large proportion of the cost of production as it related to producers' transport of inputs and outputs. Therefore, the location of the production facility should be chosen in such a way that the cost of transportation is the highest. In addition, this theory clarified the reason for the formation and development of IPs based on the arguments of centralized industrial production by territory, considering the process of forming IPs as a process of accumulation of production from promoting the concentration of industrial production facilities in certain areas. However, this theory did not show the impacts of the policy system and state management agencies on sustainable development of industrial zones.

Porter (2002) gave his perspective on the formation of economic regions based on competitive advantage through theory of national advantage in industries and clusters. According to him, competitiveness of a country depends on its creativity and dynamism. In particular, Porter showed that competitive advantage is understood as the industrial and national resources which enterprises in the world create their superior advantages compared to other direct competitors. Porter's competitive theory provided arguments for explaining why countries focus on developing specific industries and why businesses play an important role in shaping industry centers for global competitiveness. Also, this theory suggested the idea of attracting investment into IPs based on the competitive advantage of enterprises rather than that of IPs itself.

According to the central place theory of Christaller (1933), the advantages of territorial concentration with external advantages gave manufacturing enterprises the ability to align their market size, afterwards geographic concentration is formed by allocating enterprises closely in the market center. This concentration allowed businesses to share the burden of infrastructure costs, especially transportation, electricity, water supply, and communications. Thus, enterprises could increase labor productivity by linking and supporting each other in their production and business. At the same time, this allowed enterprises to specialize and collaborated for reducing their product costs and making reasonable and economical use of raw materials, energy and other inputs. This theory was worth noting in that it determined the spatial population distribution which allowed planning of residential areas and newly exploited areas to be rationalized. In general, this theory had practical significance and was the basis for the layout and construction of IPs by creating a foundation for the formation of residential areas and new urban areas in vacant lands adjacent to IPs.

Growth pole theory of Francois Peroux (1950) stated that a region's economic development could not be even over all its areas in the same economic space and in the same time, but tends to grow most in some certain areas while others develop slower or less developed. Also, this economic theory holds that industry and services play a major role in

regional growth. Industrial and service concentration in urban areas supports regional development. The development of such a spearhead industry spells out the development of that region, leading to an increase in new jobs, income, and spending. As a result, new industries are more and more increasingly associated with service activities and new forms of investment. Continuing this theory, Myrdal (1957), Hirshman (1958), Salvatore (1972), and Harry Richardson (1978) argued that the impact of growth pole is determined by both spillover effects and the effects of attracting or polarizing on economic growth, increasing per capita income and opportunity for economic development of surroundings. According to these authors, spillover effects created a vibrant commodity exchange environment as a major source of supply or a large market for technology transfer and renewal. At the same time, spillover effects contributed to upgrading facilities, promoting research and development of science and technology, and applying science and technology; thus, creating a change in awareness, culture, education and training, institutional development and other innovations in psychology of producers and consumers. As a result, an attractive environment for attracting investment was established through new activities, thus boosting investment in socio-economic infrastructure and urban development. In general, growth pole theory was useful for the selection of key areas for development.

The development of IPs and their spread has changed the socio-economic face and vitality. However, as opposed to positive contributions to the province's socio-economic development, the development of industrial zones still contains unintended impacts: employment, income and living standards of workers in industrial zones are still difficult and unsustainable; The hot development of the infrastructure system inside and outside the IPs has disrupted the life of a part of the population, threatened the social order, environmental pollution, etc.

In 2004, Roberts has introduced a new concept in sustainable development of Eco-industrial park (EIPs) with specific criteria and proof in Australia's conditions. Some surveys were conducted under the study scope on the application of eco-industrial model in Queensland State (Australia) in a sustainable way. Since then, under the research, a set of principles and planning guidelines were developed to facilitate the development of EIPs. In the same research view, the study which was conducted by Gibbs et al. (2007) revealed that the combination of sustainable development goals among policies has actually achieved the "win-win-win" (win) goal. Ecological industrial models have increased business competitiveness along with reducing environmental pollution creating jobs and improving the working conditions. However, in reality, many problems related to economic, environmental and social development still exist in the IPs developing period in the US. In a contrast view, the researcher has only paid attention to sustainably develop IPs in terms of economy and environment without considering social issues satisfactorily.

Kien (2016) affirmed the development of IPs is an indispensable process contributing positively to the renovation of the localities. However, the author, in this study, points out the concept of social problems arising from the development of IPs. The author considered that social problems arising from the development of IPs are social issues that appear to have either positive or negative impacts on the quality of life so that it is a need for the community to take actions with the last aim is to ensure the existence and sustainable development of community.

Giang (2012) believes that the development of IPs in Vietnam is an indispensable process in industrialization and modernization development. Along with the economic impacts, the social impact of IPs was considered in two directions; positive and negative on specific aspects such as:

1. Employment and occupational impacts.
2. Income and living standards impacts.
3. Demographic impacts.
4. Consumption opportunities and public services impacts.
5. Urbanization and infrastructure impacts.
6. Social security and hierarchy impacts.

Researching the impacts of IPs on socio-economic development not only identifies affected economic, social and environmental factors but also points out the impact (positive or negative), impact level (big or small) and quantifies that level of impact. On that basis, it is suggested to propose solutions to promote positive impacts and at the same time limit negative impacts on sustainable development of localities (Anh, 2018). Therefore, in this study, the authors give a comprehensive assessment, both positive and negative through the criteria of assessing the impacts of IPs on the following basic economic, social and environmental aspects (Table 1).

Table 1
CRITERIA TO ASSESS THE IMPACT OF INDUSTRIAL ZONES ON LOCAL SOCIO-ECONOMIC DEVELOPMENT

No	Criteria	Code
I.	Assess the positive impact of industrial zones on local socio-economic development	
A.	Positive impact on the economy	
1	IPs create economic space attracting domestic and foreign investment to the locality	PE1
2	IPs contribute to promote the process of economic and social development in local	PE2
3	IPs create favorable conditions for sustainable development of the economy	PE3
4	IPs plays a vital role in boosting good and service supply with an aim to meet domestic and exporting demands	PE4
5	IPs improve operational capacity (better promote the reception and transfer of modern technology and advanced management methods from developed countries)	PE5
6	IPs contribute to increasing import and export value and provincialbudget	PE6
7	IPs have positive impacts on industrial development and restructuring in a modern, rational and effective way	PE7
8	IPs contribute to the development of infrastructure systems and promote local economic links	PE8
B.	Positive impact on the society	
9	IPs with vital roles in creating jobs and changing labor structure.	PS9
10	IPs help train labors to have better skills and discipline	PS10
11	IPs with vital roles in increasing income and improve living standard for employees.	PS11
12	IPs promote school, hospital systems and other forms of local service.	PS12
13	IPs contribute to better council house and guarantee local security	PS13
C.	Positive impact on the environment	
14	IPs create favorable opportunities for waste treatment and environment protection	PIE 14
15	IPs have concentrated waste treatment areas to reduce emission to local	PIE 15
16	IPs have factory to handle solid waste(metal, chemicals, etc) to ensure safe environment for local	PIE 16
II.	Evaluate negative impacts of industrial zones on local socio-economic development	
A.	Negative impact on the economy	
17	Policies to attract enterprises to “fill up” IPs cause waste of resources	NIE17
18	Increasing production and training cost because of low technical skills	NIE18
19	Low potential to attract investment of IPs cause lack of fully take advantage of investment in building infrastructure	NIE19
20	IPs cause adverse effects on transportation infrastructure, urban of local.	NIE20
21	Strengthen link chain of unclear activities	NIE21
22	Changing in price and technology exchange, etc. have bad effects on manufacture of IPs and budget revenue of local	NIE22

Table 1 CRITERIA TO ASSESS THE IMPACT OF INDUSTRIAL ZONES ON LOCAL SOCIO-ECONOMIC DEVELOPMENT		
B.	Negative impact on the society	
23	The massive construction of IPs makes people's lands confiscated, thereby impeding cultivation. Thus, this increases unemployment and adversely affects income and life of people whose lands are retrieved	NIS23
24	The development of IPs has caused pressure on public services: housing for workers, parks, schools, hospitals, etc.	NIS24
25	IPs is one of the causes of increasing social instability (increasing social evils, strikes, protests, etc.)	NIS25
26	Local culture in IPs will be mixed due to the large number of migrant workers from provinces and cities to work for enterprises	NIS26
C.	Negative impact on the environment	
27	The development of IPs is one of the causes of leading to water, air, and soil pollution	XMT27
28	The management, collection and treatment of solid waste in IPs are inadequate, unsuitable, so the recovery and recycling efficiency is not high and cause secondary pollution	XMT28

The above studies have established a framework for analyzing the inner function of the IPs and developed a set of criteria with an aim to assess the positive and negative impacts of IPs on the socio-economic development in other studied geographical areas. However, the research context has been changed under the impacts from global issues in economy politics and science and technology, this set of criteria should be applied and developed flexibly. Accordingly, the article continues to inherit the assessing criteria toward the impacts of IPs on socio-economic development within Thai Binh province under the enterprise's perspective.

METHODOLOGY

Research Approach

The paper uses the following research approaches:

1. Access to policies and institutions: This is a factor directly related to the development of IPs and socio-economy; through the study of policies, it will see its impact on industrial park development and socio-economic development.
2. Access to history: With this approach, consideration will be given to the formation and development of IPs; the impacts of IPs on socio-economic development and local changes when there are IPs; thereby helping to see the differences between the stages of the development process.
3. Access to the system: To help research comprehensively the impacts of the industrial park on economic, social and environmental development.
4. Participatory approach: The research process has participation, exchange, investigation of enterprises, managers in order to collect, verify and evaluate the impacts of the IPs to social economic development.

Source of Data

This study chose Thai Binh province as the research setting since it is one of potential industrial area in Red River Delta region. The data used in this research are secondary and primary data. The primary sources include information about Thai Binh province's natural and socio-economic conditions; the assessment information related to IPs' impacts on socio-economic development of Thai Binh province: The formation and development phase of IPs; IPs development plans; the status quo of infrastructure and society; The status quo of land using and investment attraction; preferential policies on investment in province's IPs etc. The secondary

data includes 170 questionnaires which were sent to enterprises inside and outside IPs along with 165 valid questionnaires which were used for data analysis purposes (Table 2).

Table 2
THE SURVEY ENTERPRISES CLASSIFICATION

Inside/outside IPs	Number	Ratio (%)	Domestic/International Enterprises	Number	Ratio (%)
Inside IPs	130	78.8	Domestic Direct Investment (DDI)	107	64.8
Outside IPs	35	21.2	Foreign Direct Investment (FDI)	58	35.2
Total	**165**	**100.0**	**Total**	**165**	**100.0**

The Selection of Investigated Area

With an aim to assess the impacts of IPs, the reasearchers have used a comparative approach over time and space, namely: comparation toward the enterprises before and after entering IPs; Comparation toward the enterprises inside and outside IPs in 6 currently operating IPs within Thai Binh Province (Table 3).

Table 3
POPULATION

For enterprises	Number	Ratio (%)
Nguyen Duc Canh	40	24.2
Phuc Khanh	45	27.3
Gia Le	14	8.5
Tien Hai	42	25.5
Cau Nghin	12	7.3
Tra River	12	7.3
Total	**165**	**100.0**

Method for Data Processing and Analysis

The gathered data shall be processed, cleared out, entered and encoded in SPSS 20.0 software. The analytical instruments used in this research are: First, the Descriptive statistics, which is used to identify the average level and standard deviation of the participants. Second, The comparison between 2 groups of enterprises inside and outside IPs shall clarify the assessment level, which help to identify the focused group then find out suitable solutions. After that, the research uses Independent Sample T-Test method to test the average differences between groups of enterprises inside and outside IPs.

DISCUSSION OF RESEARCH FINDINGS

In Thai Binh province, There are currently 6 operating IPs in 10 planned IPs which were mentioned above namely: Phuc Khanh IP, Nguyen Duc Canh IP, Tien Hai IP, Gia Le IP, Cau Nghin IP and Tra River IP. The Nguyen Duc Canh, Phu Khanh and Gia Le IPs have fully filled whereas the Tien Hai IP has been 60-70% filled; the Cau Nghin and Tra River have been 35-40% filled[1].

The Positive Impacts of IPs on Enterprises in Thai Binh Province

The positive impacts on the economy

Firstly: IPs create economic space attracting domestic and foreign investement to the province. With 6 available IPs, Thai Binh province has created economic space that attracts domestic and foreign investement. According to statistics, it is accumulated to December 2017 that there are 171 investment projects with total registered investment capital of VND27,811,017 billion, total disbursement of VND17,818,499 billion, achieving 65% of the registered capital. Accordingly, there are 43 FDI projects (accounting for 25% of total number); the registered investment capital is VND9,683,014 billion (covering 36% of the total registered capital); disbursement is VND6,728 billion, achieving 70.4% in the registered capital; 128 domestic investment projects (making up for 75% in the total projects number), registered investment capital of VND18,128,003 billion (accounting for 65.2% of total registered capital), disbursement of VND11,090,500 billionachieving 62.1% of the registered capital[2]. According to the survey results carried out with enterprises inside and outside IPs (Table 4), IPs have created economic space that attracts domestic and foreign investment to the province (Mean=4.28). The research continues to use data from the survey for 165 enterprises, including 130 enterprises in the IP and 35 enterprises outside the IP. The research uses T Test (Table 5) to verify the differences in the level of evaluation between these two groups, and the results are stated as follows:

Table 4
STATISTICS ON IPS' POSITIVE IMPACTS IN TERM OF ECONOMY

Criteria	N	Mean
IPs create economic space attracting domestic and foreign investment to the locality (PE1)	165	4.28
IPs contribute to promote the process of economic and social development in local(PE2).	165	4.73
IPs create favorable conditions for sustainable development of the economy (PE3)	165	3.78
IPs plays a vital role in boosting good and service supply with an aim to meet domestic and exporting demands (PE4).	165	4.11
IPs improve operational capacity (better promote the reception and transfer of modern technology and advanced management methods from developed countries) – PE5	165	3.67
IPs contribute to increasing import and export value and provincialbudget (PE6).	165	4.31
IPs have positive impacts on industrial development and restructuring in a modern, rational and effective way (PE7).	165	4.02
IPs contribute to the development of infrastructure systems and promote local economic links (PE8)	165	4.75

Source: Calculated by the authors

Table 5
GROUP STATISTICS

Criteria	IPs	N	Mean	Std. Deviation	Std. Error Mean
IPs create economic space attracting domestic and foreign investment to the locality (PE1)	Inside	130	4.32	0.469	0.041
	Outside	35	4.11	0.404	0.068
IPs contribute to promote the process of economic and social development in local (PE2).	Inside	130	4.73	0.510	0.045
	Outside	35	4.71	0.458	0.077
IPs create favorable conditions for sustainable development of the economy (PE3)	Inside	130	3.85	0.468	0.041
	Outside	35	3.51	0.612	0.103
IPs plays a vital role in boosting good and service supply with an aim to meet domestic and exporting demands (PE4).	Inside	130	4.15	0.505	0.044
	Outside	35	3.94	0.482	0.081
IPs improve operational capacity (better promote the reception and transfer of modern technology and advanced management methods from developed countries) – PE5	Inside	130	3.89	0.595	0.052
	Outside	35	3.27	0.655	0.111

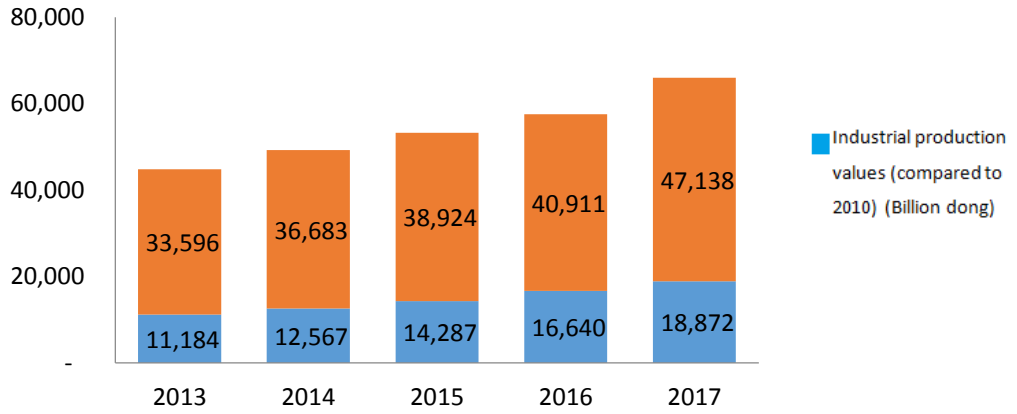
Table 5 GROUP STATISTICS					
IPs contribute to increasing import and export value and provincial budget (PE6).	Inside	130	4.33	0.686	0.060
	Outside	35	4.23	0.808	0.136
IPs have positive impacts on industrial development and restructuring in a modern, rational and effective way (PE7).	Inside	130	4.00	0.715	0.063
	Outside	35	4.09	0.612	0.103
IPs contribute to the development of infrastructure systems and promote local economic links (PE8)	Inside	130	4.74	0.507	0.044
	Outside	35	4.80	0.406	0.069

Source: Calculated by the authors

The evaluation level for the group of enterprises inside IPs (130 observations) seems to be higher than that of the outside Ips group (35 observations): The average score for the inside Ips group is 4.32/5, while the score for the outside IPs group is 4.11/5 (Table 5).

Levene's Test finds Sig.=0.000<0.05, which means the variance between the groups of enterprises inside and outside IPs is different. The test result T shall be used in Equal variances not assumed. We can see that Sig.=0,000<0.05, showing a difference in the level of evaluation between these two groups. The Mean Difference value shows that the average score of the group of enterprises inside IPs is 0.11/5 higher than the other.

Secondly: IPs contribute to promote the local socio-economic development and creating favorable conditions for the sustainable economic development. Industrial production value which has been contributed from IPs is getting higher and more stable, ranging from 36 to 40% of the province's total industrial production value. It demonstrates that the industrial development in general as well as the impacts of IPs on Thai Binh province's economy in particular over the last 5 years has met most of the requirements. (Graph 1)



GRAPH 1
INDUSTRIAL PRODUCTION VALUE IN THE 2013-2017 PERIOD[3]

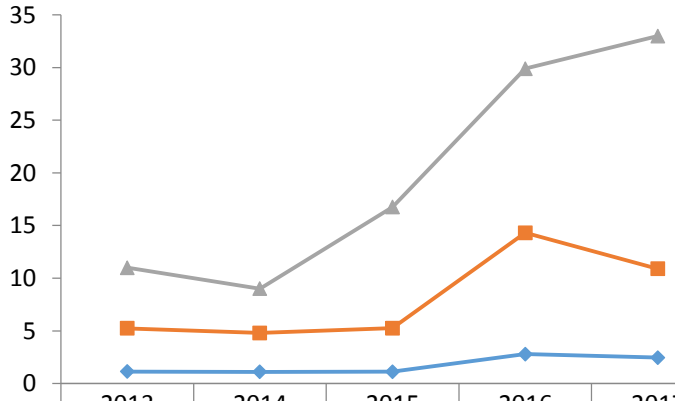
Source: Cited in annual socio-economic report in Thai Binh province

Most of the enterprises participating in the survey highly appreciate the criterion "IPs contribute to promote the process of economic and social development in local" and "IPs create favorable conditions for sustainable development of the economy". With average grades are 4.73/5 and 3.78/5 respectively. Analysis of variance found no difference among enterprises inside and outside IPs.

Thirdly: IPs improve operational competence. The survey indicated that with high quality environment and facilities along with great foreign investment, many enterprises have

grabbed modern management technology (Mean=3.67). This brought a significant value for Vietnamese business when joining IPs. Policies for labor, working attitude, company culture, etc. are social and highly effective management tools motivating workers to actively engage jobs. Levene's Test finds Sig=0.004<0.05 which means that analysis of variance shows difference among enterprises inside and outside IPs. In fact, with the same vision toupscale the production, the enterprises, in general, are always active in technological innovation investment in order to improve productivity, product quality and simultaneously reduce manufacturing cost and time. Investment and innovation in technology is especially important and becomes a key factor for enterprises to avoid being out-of-date and losing market share in the market economy. This is much clearer when enterprises join IPs and witness the direct competition among companies. The earlier enterprises get access to advanced technology, the sooner they have motivation to conduct technology innovation to aim to boost productivity.

Fourthly: IPs plays a vital role in boosting good and service supply with an aim to meet domestic and exporting demands and also contributing to the shift of economic structure. Surveys demonstrate that most enterprises agree that IPs play a main role in industry and focusing on Ips development in Thai Binh province is the core of industrial development, creating the lever for industrial development (Graph 2). 6 IPs have started operation and there will be more and more in the future. Industry in Thai Binh province has enormous potential with the score of 3.67/5 and 4.02/5 (Table 6). According to analysis of variance, there is no difference among groups with level of significance more than 0.05 (reliability 95%).



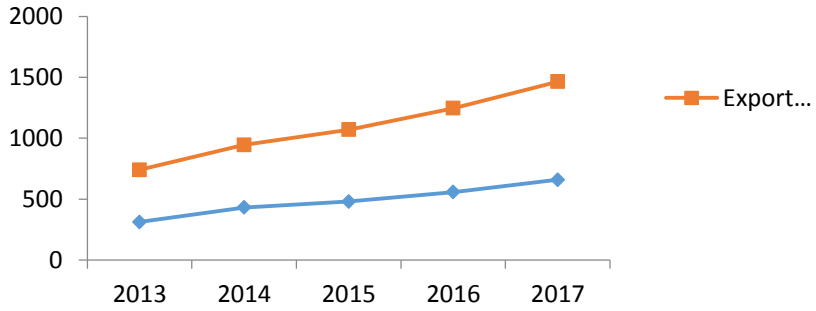
	2013	2014	2015	2016	2017
Industry and construction	5.75	4.2	11.5	15.6	22.1
Service	4.1	3.7	4.13	11.5	8.43
Agriculture, Forestry and fisheries	1.14	1.1	1.12	2.8	2.46

GRAPH 2
ECONOMIC STRUCTURE SHIFT IN THAI BINH PROVINCE 2013-2017[4]
Source: Processed results from surveyed data with the support of SPSS20.0 software

Fifthly: IPs make a great contribution to export value and budget of the province. In recent

years, export value in IPs has dramatically increased which accounts for 49.24% export value and 44% import value of the province. Graph 3 indicates that export value is always higher than the import value and it is clear that export volume is quite big. This signal is good for the province in general and business in IPs in particular.

According to a research conducted of 165 enterprises, IPs have positive effects on increasing export value and budget with the score of 4.31/5 (Table 3). Inspection variance among enterprises inside and outside IPs finds no difference which indicates the essential role of IPs in economic development of Thai Binh province.



GRAPH 3
QUANTITY OF THE EXPORTED AND IMPORTED COMMODITY IN IPS[5]
Source: Department of industry and trade 2013-2017

Sixthly: IPs contributes to develop infrastructure and strengthen economic connection of the province. All businesses claim that IPs not only contribute to high portion of GRDP and economic restructure of Thai Binh province but also greatly effects on developing and bettering infrastructure, technology and social of the province (Mean=4.75). Beside investment in infrastructure inside IPs, developing infrastructure including transportation, electricity, post office, water supply, etc. is the commitment from authorities and other economic sectors participating in investment.

Positive impacts on society

Firstly: IPs contribute to solve unemployment problem and change labor market in the direction of industrialization and modernization in Thai Binh province. Table 6 shows enterprises' opinions about evaluating positive influence on society, "*Creating jobs and changing in labor structure*" is the most highly appreciated (Mean=4.11/5). This highlighted crucial role of IPs in creating jobs. The survey of 165 enterprises (130 internal IPs and 35 external IPs) use T-Test (Table 7) to verify the difference between two groups' evaluation and the result is no difference.

Table 6
STATISTICS ON IPS' POSITIVE IMPACTS IN TERM OF SOCIETY

Criteria	N	Mean
IPs with vital roles in creating jobs and changing labor structure. (PS9)	165	4.11
IPs help train labors to have better skills and discipline (PS10)	165	3.22
IPs with vital roles in increasing income and improve living standard for employees. (PS11)	165	3.27
IPs promote school, hospital systems and other forms of local service. (PS12)	165	3.28

Table 6 STATISTICS ON IPS' POSITIVE IMPACTS IN TERM OF SOCIETY		
IPs contribute to better council house and guarantee local security (PS13)	165	2.19

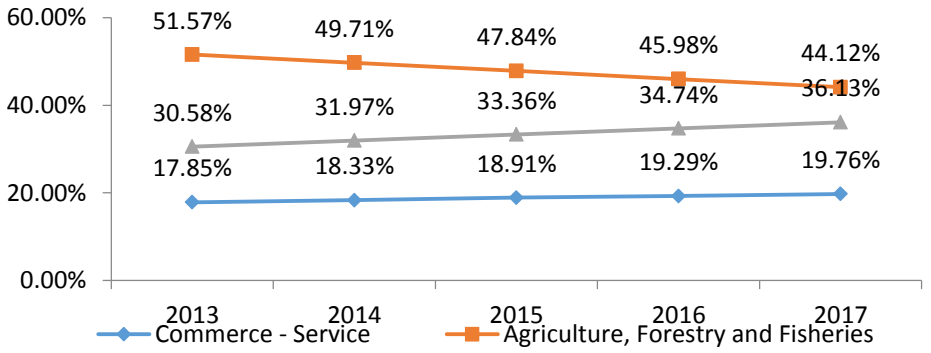
Source: Calculated by the authors

Table 7
COMPARISON OF AVERAGE VALUE AMONG ENTERPRISES INSIDE AND OUTSIDE IPS

Criteria	IPs	Quantity	Average score	Standard deviation	Standard error
PS9	Inside	130	4.08	0.499	0.044
	Outside	35	4.20	0.406	0.069
PS10	Inside	130	3.20	0.628	0.055
	Outside	35	3.29	0.710	0.120
PS11	Inside	130	3.16	0.463	0.041
	Outside	35	3.69	0.867	0.147
PS12	Inside	130	3.24	0.668	0.059
	Outside	35	3.46	0.701	0.118
PS13	Inside	130	2.16	0.595	0.052
	Outside	35	2.29	0.789	0.133

Source: Calculated by the authors.

In recent years the development of IPs has made great contributions to economic restructure and inevitably shaped training human resource to conform to economic development targets (Graph 4).



GRAPH 4
RATIO OF LABOR STRUCTURE IN ECONOMIC SECTORS IN THAI BINH PROVINCE 2013-2017 (%)[6]

Source: Thai Binh Industry and Trade Department

Graph 4 shows that over period of 2013 and 2017 ratio of labors working in Agriculture, Forestry and Fisheries gradually fell. In contrast, the portion for industrial sector rose.

Secondly: IPs also plays a crucial role in boosting income and bettering living standard for labors. In addition, IPs helps to build new countryside in community and district where IPs locate with the score of 3.27/5.

Thirdly: IPs support to train and better skills for labors, promote discipline and get access to professional working environment. It is undeniable that working in a professional environment with access to technology, qualified production process and constantly enhance skills to meet company demands. This enables workers to have professional manners. The survey shows that all enterprises agree with this result (Mean=3.22/5) and variance analysis finds no

difference among enterprises inside and outside IPs with level of significance more than 0.05 (reliability 95%) (Tables 6 and 7).

Fourthly: IPs promote the development of schools and hospital systems and other forms of local service as well. According to the survey, all businesses share the same idea that**,** IPs promote the development of school and hospital systems and other forms of local service with the average score of 3.28/5 (Table 6) and variance analysis finds no difference among enterprises inside and outside IPs with level of significance Sig.>0.05 (Table 7). In short, it is clear that medical centers and hospitals support better and deal with labor demand of diagnosis and treatment. This is two-way effects between IPs development and the foundation of medical centers. It also reflect the inevitability of urbanization and the shift of labor market in the province.

Fifthly: IPs creates benefit opportunities to upgrade council house and guarantee local security. According to the survey all enterprises have not highly appreciated this problem with the average score of 2.19/5 (Table 6) even though in recent years Thai Binh province has made efforts to solve housing shortage for labors in IPs.

Positive impacts on environment

Firstly: IPs create favorable conditions for solving environmental pollution in locality. Achievements to deal with environmental pollution in Thai Binh province thanks for the development of IPs are:

1. IPs were established and developed, system of policies, sanctions and regulations are added, completed and developed basing on the respect for the harmony among local enterprise and citizens including environment protection rules inside and outside Ips.
2. Thai Binh highly focus on the implementation and investment in projects on waste treatment. These projects contribute to handle surface water pollution, soil and solid waste from IPs and neighborhood.

When enterprises inside and outside IPs participated in this survey, they may not really satisfy with evaluation of IPs positive impacts on environment in Thai Binh province (Tables 8 and 9).

Table 8
STATISTICS FOR EVALUATION LEVEL OF ENVIRONMENTAL IMPACTS

Criteria	N	Mean
IPs create favorable opportunities for waste treatment and environment protection (PIE 14)	165	2.99
IPs have concentrated waste treatment areas to reduce emission to local (PIE 15)	165	2.97
IPs have factory to handle solid waste (metal, chemicals, etc.) to ensure safe environment for loca (PIE 16)	165	2.69

Source: Calculated by the authors

Table 9
AVERAGE COMPARISON AMONG ENTERPRISES INSIDE AND OUTSIDE IPS

Criteria	IPs	Quantity	Average grade	Standard deviation	Standard error
PIE 14	Inside	130	2.99	0.629	0.055
	Outside	35	3.00	0.542	0.092
PIE 15	Inside	130	2.99	0.506	0.044
	Outside	35	2.89	0.471	0.080
PIE 16	Inside	130	2.68	0.707	0.062
	Outside	35	2.74	0.701	0.118

Source: Calculated by the authors

Negative Impacts of IPs on the Development of Social Economy in Thai Binh Province

Negative impacts on economy

The results of survey and comparison among enterprises inside and outside IPs showed in Tables 10 and 11 indicates that IPs have both positive and negative impacts on economic development in Thai Binh province:

Table 10
STATISTICS OF NEGATIVE IMPACTS ON ECONOMY

Criteria	N	Mean
Policies to attract enterprises to "fill up" IPs cause waste of resources (NIE17)	165	3.08
Increasing production and training cost because of low technical skills (NIE18)	165	3.81
Low potential to attract investment of IPs cause lack of fully take advantage of investment in building infrastructure (NIE 19)	165	4.25
IPs cause adverse effects on transportation infrastructure, urban of local. (NIE 20)	165	2.92
Strengthen link chain of unclear activities (NIE 21)	165	3.88
Changing in price and technology exchange, etc. have bad effects on manufacture of IPs and budget revenue of local (NIE 22)	165	3.44

Source: Calculated by the authors

Table 11
COMPARISON OF AVERAGE VALUE AMONG ENTERPRISES INSIDE AND OUTSIDE IPS

Criteria	IPs	Quantity	Average grade	Standard deviation	Standard error
NIE 17	Inside	130	3.13	0.675	0.059
	Outside	35	2.89	0.676	0.114
NIE 18	Inside	130	3.82	0.632	0.055
	Outside	35	3.77	0.490	0.083
NIE 19	Inside	130	4.25	0.626	0.055
	Outside	35	4.23	0.598	0.101
NIE 20	Inside	130	2.96	0.820	0.072
	Outside	35	2.77	0.808	0.136
NIE 21	Inside	130	3.85	0.683	0.060
	Outside	35	3.97	0.453	0.077
NIE 22	Inside	130	3.46	0.661	0.058
	Outside	35	3.37	0.808	0.136

Source: Calculated by the authors

Firstly: Policies to attract enterprises to "fill up" IPs cause waste of resources. Thai Binh industrial parks were established in the same period with quite similar industry structure, thus limiting the ability of attracting investment. Most IPs are located too adjacently to urban areas, residential areas restricted to industries that can be invested. Therefore, the investment structure is not suitable, mainly in the areas of using a wide range of unskilled workers with a small amount of capital which is virtual for processing and assembly, so many IPs suffer from low occupancy rates.

Secondly: the quality of investment attraction is not good and unstable. Basically, the development of IPs must address the relationship between the interests of the locality and investors with an average score of 4.25/5 and variance analysis shows that there is no difference between enterprises in the enterprises inside and outside IPs with level of observation significance Sig>0.05 (Tables 10 and 11). The IPs of Thai Binh province are mainly extensive

labor multi-industry such as garment, processing, assembly, footwear, etc. (accounted for 56%) Investment projects in industries requiring high technology or secondary industries has been paid to attention but attraction results are still low (represented roughly 10%), making the linkage of professions not yet effective[7].

Thirdly: Increasing production and training cost because of low technical skills. Survey results indicate that all enterprises agree that in order to participate in a professional environment with synchronous infrastructure planning; water and electricity systems and waste water treatment to serve the standard for production in industry, all businesses have to bear additional costs compared to when conducting production beyond the scope of IPs (mean=3.81/5 and analysis of variance shows no difference between enterprises inside and outside IPs with an observation significance level greater than 0.05 (reality 95%).

Fourthly: IPs cause adverse effects on transportation infrastructure, urban of local. The surveyed enterprises all suppose that some IPs are not interested in adjusting the detailed planning when changes arise, which affects the operation of enterprises (mean=2.92/5, there is no difference between enterprises inside and outside IPs). IPs have not yet controlled the quality of input water, as a result some wastewater treatment plants have failed to meet environmental standards. Investment in infrastructure outside IPs in some IPs in the province still faces many limitations on infrastructure connection, mainly traffic.

Fifthly: Strengthen link chain of unclear activities. The survey results of enterprises show that the process of economic linkage between enterprises in IPs in Thai Binh is not clear because there are no "cluster" area links with average score of 3.88/5 (Table 10). Currently, majority of businesses are "independent operations", so the economic efficiency is not high due to not making use of its comparative advantages.

Sixthly: Changing in price and ancient technology exchange, etc. have bad effects on manufacture of IPs and budget revenue of local. The development of IPs has attracted a large amount of capital investment of FDI enterprises in Vietnam. However, the downside of this process has formed many ways of transferring capital prices that often are exploited by FDI enterprises to evade taxes and maximize profits with average score of 3.44/5 (Table 10). The phenomenon of price transfer of FDI enterprises in Vietnam originates from numerous different causes: (i) due to differences in income tax rates of enterprises among countries; (ii) Vietnam's supporting industry is still too weak to possibly meet the demands for components, materials, and intermediate products of production and business process for FDI enterprises; (iii) because Vietnam's legal system is incomplete, which contains many loopholes and often lags behind the country's socio-economic development. With the ability of attracting a large amount of FDI enterprises, the phenomenon of price transfer is becoming a rather painful problem in Vietnam.

Negative impacts on the society

Firstly: The massive construction of IPs made people’s lands confiscated, impeding cultivation. Therefore, increasing unemployment rates adversely affect the income and life of people whose land is confiscated. According to the survey results (mean=2.15/5), enterprises also disagree with this issue (Table 12). According to them, Thai Binh IPs has provided nearly 65,000 jobs for citizens mainly in the province, but most of them migrates from the rural to urban areas (75%), especially in two IPs of Phuc Khanh and Nguyen Duc Canh. This contains certain risks and difficulties for businesses and localities. In the first place, it is a must for businesses must to “retain" workforce so as to maintain their production and business activities.

The second point is the locality has to manage a large force of rural labor after working hours; therefore, the pressure on space, environment and services is growing.

Table 12
STATISTICS ABOUT THE ASSESSMENT LEVEL OF NEGATIVE IMPACTS ON SOCIETY

Criteria	N	Mean
The massive construction of IPs makes people's lands confiscated, thereby impeding cultivation. Thus, this increases unemployment and adversely affects income and life of people whose lands are retrieved (NIS23)	165	2.15
The development of IPs has caused pressure on public services: housing for workers, parks, schools, hospitals, etc. (NIS 24)	165	3.04
IPs is one of the causes of increasing social instability (increasing social evils, strikes, protests, etc.) (NIS 25).	165	3.84
Local culture in IPs will be mixed due to the large number of migrant workers from provinces and cities to work for enterprises (NIS 26).	165	3.68

Source: Calculated by the authors

According to the variance analysis, this issue has the difference between enterprises inside and outside IPs with level of observation significance Sig.=0.000<0.05 (Table 13). A number of enterprises outside IPs believe that when IPs are constructed, people's lands are confiscated without the cultivation. This puts an adverse impact on people's income and life. Therefore, it is possible to indirectly affect the production and business efficiency of enterprises, so they still consider not to participating in the IPs.

Table 13
COMPARISON OF AVERAGE VALUES BETWEEN ENTERPRISES INSIDE AND OUTSIDE IPS

Criteria	IPs	Quantity	Average score	Standard deviation	Standard errors
NIS 23	Inside	130	2.10	0.480	0.042
	Outside	35	2.31	0.758	0.128
NIS 24	Inside	130	3.05	0.496	0.043
	Outside	35	3.00	0.485	0.082
NIS 25	Inside	130	3.82	0.656	0.058
	Outside	35	3.94	0.684	0.116
NIS 26	Inside	130	3.71	0.687	0.060
	Outside	35	3.57	0.655	0.111

Source: Calculated by the authors

Secondly: The development of IPs has resulted in constant pressure on public services such as housing for workers, parks, schools and hospitals. The establishment and development of IPs in the last 15 years have attracted many local and some neighboring workforce, which creates pressures on public services such as housing, schools, hospitals, entertainment areas, etc. (mean=3.08/5), namely: (i) Solving housing problems, creating the best conditions as much as possible for employees; (ii): The development of IPs and the process of population growth have put great pressures on public services such as: schools, hospitals, entertainment centers, sports for migrant workers.

Thirdly: IPs is one of the causes of increasing social instability. Most enterprises inside and outside IPs surveyed suggest that IP is one of the reasons for increasing social evils, strikes, protests, etc. as well as the local culture where industrial parks will be doped due to the large number of migrant workers from provinces and cities to work in enterprises (mean=3.84/5).

Fourthly: the local culture that has IPs will be a melting pot due to the massive of migrant workers from the provinces and cities to work in the enterprises. The invasion of lifestyles and cultures in different regions has made some local cultural traditions gradually eroded, the traditional beauty of families, relatives and neighbors is somewhat damaged. Therefore, a part of young people quickly absorbs the modern trend, leading to contrary opinions to the generation the elderly who are trying to keep traditional cultural values. This sparks many conflicts, and most surveyed companies agreed with the average score of 3.68/5.

Negative impacts on environment

The development of IPs also puts negative impacts on the ecological environment, thereby affecting the lives and health of local people. The process of operation and development of IPs is showing signs of inadequacy related to air pollution, noise, water and waste pollution. The higher the occupancy rate of IPs is, the more enterprises and companies in the IPs are. As a result the population of workers from other places is more and more crowed. Living environment pollution caused by sewage and waste is increasing, polluting soil environment, inhibiting the growth and development of plants and animals, affecting crop and livestock productivity. Besides, the negative aspects such as noise, toxic substances discharged into the environment, etc. also affect the living environment of local people. Therefore, the analytical results from surveying enterprises inside and outside IPs indicate that most of the surveyed enterprises say that living environment pollution is a negative impact due to the development of IPs, and this recognition also reached the average score of 3.71/5 and 4.59/5 in the evaluation scale (Table 14).

Table 14
STATISTICS ABOUT THE ASSESSMENT LEVEL OF NEGATIVE IMPACTS ON THE ENVIRONMENT

Criteria	N	Mean
The development of IPs is one of the causes of leading to water, air, and soil pollution (XMT27).	165	3.71
The management, collection and treatment of solid waste in IPs are inadequate, unsuitable, so the recovery and recycling efficiency is not high and cause secondary pollution (XMT28).	165	4.59

Source: Calculated by the authors.

RECOMMENDATIONS

To promote the positive effects and limit the negative impacts of the development of IPs to the local areas in general and socio economic development of Thai Binh Province in particular, the research has given a number of s proposals and recommendations such as:

The first recommendation is strengthening the positive impacts of IPs on socio-economic development in Thai Binh province.

1. Solution to attract and select the investment projects into IPs corresponding with the potentials, strengths and the socio economic development guidelines. More specifically:

    a. Transforming the way to attract investment by means of direct investment, contract of business cooperation or State budget capital.

    b. Taking advantage of capital to invest in infrastructure such as capital from construction & building business investors; the advanced capital from infrastructure investors inside IPs; provincial budget; Capital from the secondary investors and State supporting expenditure.

    c. Improve, transform the investment environment by boosting administrative procedure reform; Develop and promulgate policies on land rent rates, incentives for investment in infrastructure

construction and business of IPs; Boosting investment promotion activities, propaganda, promote the infrastructure, investment incentive policies in a wide range of ways and methods.

2. Solutions to upgrade technology level and attract effectively the achievements of science and technology from all the projects inside IPs which are attributable to the socio – economic development process of Thai Binh province:

    a. Develop, complete and add mechanism, encourage all the organizations, individuals, economic sectors to invest in technological development, production line, etc., research and develop (R &D), apply technology into the production and life.

    b. Invest thoroughly and effectively into research institutions, production line and technology labs. It addition it is a need to develop research institutions and technology transfer which benefits the production, design, modernization and application of new technology; coordinate with universities, the senior researchers to study, develop and apply technological and technical achievements.

    c. Keep implementing the policies attracting the gifted people, both domestic and international scientists to contribute to the province. It is necessary to retain the following policies: supporting the income, accommodation, labs facilities.

3. Solutions to ensure workforce for IPs contributes to economic restructuring in a modern and sustainable manner include:

    a. Creating numerous job opportunities for citizens living in the areas where the land is confiscated; basing on requirement and purpose to set up vocational and training centers to train or retrain.

    b. Diversifying all the training method relying on "the order" of the enterprises.

4. Solutions to enhance the competitive ability and support all the enterprise inside IPs to expand production and operation.

5. Solution to strengthen the network not only in Thai Binh province but also nationwide proceeding from the network of IPs network planning; cooperate to guarantee consistent transport construction inside and outside provinces with the main focus of road; connect to human training especially high quality workers. link to protect the environment inside and outside IPs; implement numerous the connection methods in developing IPs in particular and socio economic growth in general in the provinces in Northern Viet Nam key economic region.

The second one is surmounting the negative impacts of IPs on Thai Binh province's socio-economic development.

1. Solutions to create new job opportunities for the residents whose land is confiscated such as:

    a. For workers over 35 or have no ability to change the occupation, the authorities need to spend space near IPs and grant for them to set up the service operation like building house for rent, setting up grocery stores, looking after the children, opening restaurant, repairing motor bikes, bicycles, etc. meeting the daily life activities of IPs.

    b. Support the household capital and instruct them how to invest it effectively into running business and change the job.

    c. Enhancing the vocational activities and open the new door of job for the countryside labor.

2. Solutions to cope with the social issue sprouting during the process of development of IPs in a consolidated and rational way:

    a. focus all the effort on attracting investors pouring money into the accommodation project for workers in IPs.

    b. Pay attention to invest, build the infrastructure, consistent and modern cultural institutions with an aim to meet spiritual demand of the workers in IPs such as: Hospital, school, amusement parks, sport center, service center, catering, ect. Organizing numerous extracurricular activities to connect employees, share love, thereby promote the responsibility and loyalty of the employees.

c. Cooperate with local people living around IPs to meet the basic needs of workers namely working, daily living and relaxing.

3. Tackling the environment problems inside and outside the IPs to ensure the sustainable and long-term development of IPs particularly and socio-economic development generally in the province namely:

   a. Construction and building business investors should only take modern, high technology and less polluted or eco-friendly projects.

   b. At the sewer lines collecting wastewater, it is necessary to have exploration wells allowing access and sampling, monitoring the flow and quality of wastewater from factories inside IPs.

   c. Promote the responsibilities of enterprises and investors on environmental protection.

   d. Strengthen inspection and examination of environmental law enforcement in IPs, and consider adjusting sanctions to ensure deterrence against environmental law violations. For the investment in a centralized wastewater treatment plant, there should have compulsory sanctions for enterprises developing the IPs' infrastructure.

CONCLUSION

IPs development is indispensable to enhance industrialization and modernization and promote local socio-economic growth. Through descriptive statistic data analysis, T-Test between enterprises inside and outside IPs, it shows the positive and negative impacts of developing IPs on the economy, society and environment. The study has achieved the following results:

By approaching the system and logic, the article synthesized and analyzed the rationale of the impacts of IPs on the local socio-economic development, which is the consequence of the development of IPs on the local, causing local economic, social and environmental changes. As a result, it is clear to find out the affected local elements and the direction, level, quantification and mechanism of impacts as well.

The study on the status of Thai Binh province and the statistical results described from the analysis of primary data collected through surveys of enterprises inside and outside IPs, the article uncovered that the development of IPs in Thai Binh province has positive and negative impacts on economy, society and environment. This is the basis to offer solutions to enhance the positive impacts and limit the negative ones of IPs on socio-economic development of Thai Binh province.

LIMITATIONS AND FUTURE RESEARCH

The development of IPs is inevitable and objective to promote industrialization modernization of the country. The purpose of the study is considered to have positive and negative impacts to rural areas. To examine these interactions (both positive and negative) as well as propose measures to promote the positive impacts and limit the negative impacts of IPs to socio-economic development of local areas, the research was been practically studied in Thai Binh Province. Through the approaching and collecting methods in combination with other methods of data analysis, descriptive statistics, Independent Sample T-Test method to assess the impact of IPs on economic, social, environmental development as well as test the average differences between groups of enterprises inside and outside IPs about these.

Cohering the development of IPs and the implementation of socio-economic objectives of Thai Binh province is a vital problem, posing many fields of science to study from different perspectives and subjects. Therefore, in the future, the research directions that need to be

continued can be: The system of policies on IPs development to meet the new requirements of sustainable development and under the multidimensional impact of the industrial revolution 4.0; Research on the physical and spiritual wellbeing of workers inside IPs: housing issues, mechanical migration issues, cultural issues, industrial manners, etc. Researching on the relationship of interests among entities: State, enterprises, people, etc. Research on socio-political organizations in enterprises, especially foreign-invested enterprises, etc.

ENDNOTE

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