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# Do Software Technology Parks Units in Chennai Are Benefiting Its Business Clusters

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# DO SOFTWARE TECHNOLOGY PARKS UNITS IN CHENNAI ARE BENEFITING ITS BUSINESS CLUSTERS

**Abstract**

The objective of the study was to determine whether the software and electronic hardware export firms within software technological parks are benefited. Also, to determine the Govt. export schemes that can be easily availed by STP and EHTP firms in STPI Chennai. Herein the data was collected from 198 respondents working as an employer in software and electronic hardware export firm in Chennai. The data was collected using the survey method. Simple random sampling techniques have been employed. The data was collected using a structured questionnaire through online method. Result of the analysis indicates that there are significant associations between the schemes availed by software and electronic hardware export firms within technological parks. Both software and electronic hardware export firms within technological parks have availed; attestation, CG enhancement and CST Reimbursement significantly high over other schemes. Also, most of the large, medium and small size firm easily uses; Import approval – duty-free, SOFTEX form certification and CST reimbursement. Through the findings, it perceived that the schemes availed by STP based firms are higher than EHTP based firms.

***Keywords:*** Software Export, Export-oriented Schemes, STP, EHTP, Export infrastructure.

## 1. Introduction

Successful exports depend on the favorable conditions of the business environment in international trade. Government policies are somehow responsible for the overall economic life of the nation. Promoting exports can be a priority for many governments. Governments play a key role in revitalizing the international trade activity of local firms through Export Promotion Programs (EPP's) (Millath, M. A., & Thowseaf, S., 2016). Export incentives are categorized as input, output and external related. Most governments have followed many good practices, especially within the context of indirect production subsidies and intermediate imports and exports (Falvey and Gemmell, 1990).

To revive the economy in this crisis, India embraces the two pillars of market liberalization and regulation through radical trade and trade policy. There have been three main areas of economic transformation for domestic investment: monetary policy, direct foreign investment and trade liberalization. Many of the former govt. owned industries were privatized while the government reduced the list of industries that were reserved for the general public sector from 18 to 3 industries. Up to 100% foreign ownership is permitted during the period of industrialization other than banking, insurance, telecommunications and aviation. Finally, discounted prices ranged from an average employment rate of 72.5% in 1991–92 to 29% to 2002-03 (Ahluwalia 2002).

And in the 1990s, the software industry within the US was facing an explosion and facing a shortage of skilled workers. India's economically free with its large availability of English cheap and highly skilled workers has made it a good place for U.S. software companies. However, the economy lacks good telecommunications infrastructure, most importantly 'bandwidth' or 'high-speed communication', in the software industry. Govt. of India has acquired technology parks to provide these services as other drawing infrastructure to foreign companies and to encourage emerging and medium enterprises to enter the software industry (Pandey, S., Wali, O. P., & Chandra, R., 2017).

Following the success of the software industry over the past decade, the Indian government has been actively promoting the electronic and biotech sector, which is responsible for India's next major growth sector, by providing individual support within the country to decide on biotech parks.

## 2. Review of Literature

Interestingly, while Asian countries in general and India especially, have emulated the park model, there is a significant difference between technology parks and therefore western science parks. This diversity is important for comparative purposes and broader understanding - high technology growth in India. In terms of such diversity, most of the technology parks in India are geared towards at least one field such as information technology (IT) or Electronic technology, while other technology parks are very specialized in the field. Also, most technical parks in India are not affiliated with any

university. Finally, almost like the technology parks in Taiwan and Singapore, the technical parks in India tend to export and the western science parks focus on R&D (Kumar, R. S., 2007). As in East Asian countries such as Malaysia, Singapore, Taiwan, and Hong Kong, technology parks are the driving force behind India's export and economic process over the past 20 years. A variety of technology parks, especially in the IT sector and more recently in the biotech sector, have started in India in just 20 years. The 2006 Park Profile Survey conducted by the Association of University Research Parks (AURP 2007) reported that Biotechnology / Pharmaceuticals (23.8% companies) and Software Information Technology (20.2% companies) are the two leading technologies in the research fields. Two related types of technology parks have emerged in India over the past two decades: software technology parks and biotech parks. Central and federal governments have played a major role in the development of both types of parks. While the initial growth of software technology parks was under the umbrella of the central government, many software technology parks emerged as joint ventures between private and state-owned enterprises or as completely independent technology parks. However, biotech parks are still in its infancy. According to predictions predicted in the biotech sector over the next decade, several parks are being spread across several regions with the active support of each national government and because of the central government (Kaur, J., & Mohitkar, 2019).

## 3. Objectives

The objective of the study was to determine whether the software and electronic hardware export firms are benefited through software technological parks in Chennai. Also, to determine the schemes that are easily availed by the software and electronic hardware export firms in Chennai.

## 4. Methodology

Herein the data was collected from 198 respondents working as an employer in software and electronic hardware export firm in Chennai. The data was collected using the survey method. Simple random sampling techniques have been employed. The data was collected using a structured questionnaire through online method.

## 5. Analysis & Interpretation

Herein analysis was carried to identify the association that is existing between scheme availed among the firms within the technological parks STP firms and EHTP firms.

$H_0$: There is no significant associations among the schemes availed by software and electronics hardware export firms in Chennai technological parks.

***Table No. 1***

***Chi-Square Test: Scheme Availed by STP firms and EHTP firms Technological Parks***

| Schemes Availed by STP & EHTP Firms | | | STP Firms | EHTP Firms | Total |
|---|---|---|---|---|---|
| Schemes Availed | Import approvals - duty-free | Count | 4 | 1 | 5 |
| | | Expected Count | 3.9 | 1.1 | 5 |
| | CG Enhancement | Count | 29 | 24 | 53 |
| | | Expected Count | 41.1 | 11.9 | 53 |
| | List Attestation | Count | 81 | 15 | 96 |
| | | Expected Count | 74.4 | 21.6 | 96 |
| | NOC for all | Count | 15 | 2 | 17 |
| | | Expected Count | 13.2 | 3.8 | 17 |
| | CST Reimbursement | Count | 11 | 6 | 17 |
| | | Expected Count | 13.2 | 3.8 | 17 |
| | SOFTEX Form certification | Count | 9 | 1 | 10 |
| | | Expected | 7.8 | 2.2 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| | | Count | | | |
| Total | | Count | 149 | 49 | 198 |
| | | Expected Count | 149 | 49 | 198 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 24.272a | 6 | 0.000 |
| Likelihood Ratio | 22.55 | 6 | 0.001 |
| Linear-by-Linear Association | 0.001 | 1 | 0.973 |
| N of Valid Cases | 198 | | |

Source: (Primary data)

The estimated significance value 0.000 which is less than 0.05 [Std. Value] meaning the null hypothesis is rejected. Therefore, there are significant associations between the schemes availed by software and electronics hardware export firms in Chennai technological parks.

From the Cross-table it is interpreted that both software and electronics hardware export firms have availed attestation, CG enhancement and CST Reimbursement significantly high over the other schemes.

Also, it is noted that the software export firms within the technological parks have availed a high amount of government schemes over the electronic hardware export firms in the technological park.

$H_0$: There is a no significant difference in opinion among the schemes easily availed large size, medium size, and small size software and electronic hardware export firms within technological parks.

***Table No. 2***

***ANOVA: Scheme Availed by large, medium and small size firm***

| ANOVA | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Sum of Squares | df | Mean Square | F | Sig. | Null Hypothesis |
| Import approvals - duty-free | Between Groups | 1.722 | 6 | 0.287 | 1.307 | 0.255 | Accepted |
| | Within Groups | 53.13 | 191 | 0.22 | | | |
| | Total | 54.851 | 197 | | | | |
| CG Enhancement | Between Groups | 155.555 | 6 | 25.926 | 41.365 | 0.000 | Rejected |
| | Within Groups | 151.674 | 191 | 0.627 | | | |
| | Total | 307.229 | 197 | | | | |
| List Attestation | Between Groups | 20.442 | 6 | 3.407 | 7.747 | 0.000 | Rejected |
| | Within Groups | 106.434 | 191 | 0.44 | | | |
| | Total | 126.876 | 197 | | | | |
| NOC for all | Between Groups | 61.034 | 6 | 10.172 | 20.353 | 0.000 | Rejected |
| | Within Groups | 120.949 | 191 | 0.5 | | | |
| | Total | 181.984 | 197 | | | | |
| CST Reimbursement | Between Groups | 15.3 | 6 | 2.55 | 6.917 | 0.000 | Rejected |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Within Groups | 89.214 | 191 | 0.369 | | | |
| | Total | 104.514 | 197 | | | | |
| SOFTEX Form certification | Between Groups | 31.563 | 6 | 5.26 | 13.89 | 0.000 | Rejected |
| | Within Groups | 91.65 | 191 | 0.379 | | | |
| | Total | 123.213 | 197 | | | | |

Source: (Primary data)

The estimated significance value 0.000 which is less than 0.05 [Std. Value] meaning the null hypothesis is rejected. Therefore, there is a significant difference between the schemes easily availed large size, medium size, and small size software and electronics export firms within technological parks.

Having a significant difference in schemes availed large size, medium size, and small size software and electronic hardware export firms within technological parks rank test were performed.

***Table No. 3***

***Rank Test – Schemes easily availed by large, Medium and Small Size Firms***

| Rank Test | | | | | | |
|---|---|---|---|---|---|---|
| | Large Size Firm | Rank | Medium Size Firm | Rank | Small Size Firm | Rank |
| Import approvals - duty free | 1.2941 | 1 | 1.4 | 1 | 1.1321 | 1 |
| CG Enhancement | 1.8627 | 5 | 2 | 5 | 3.9245 | 6 |
| List Attestation | 1.7843 | 3 | 1.8 | 4 | 1.2264 | 3 |
| NOC for all | 1.8039 | 4 | 2.4 | 6 | 2.6792 | 5 |
| CST Reimbursement | 1.7059 | 2 | 1.6 | 3 | 2.0377 | 4 |
| SOFTEX Form certification | 2.0588 | 6 | 1.4 | 1 | 1.1321 | 1 |

Source: (Primary data)

From the rank analysis carried out using mean score, it can be interpreted that; Large size firms can easily avail – Import approval – duty-free and CST reimbursement schemes. Medium size and Small size firms can easily avail – Import approvals – duty-free and SOFTEX form certification.

## 6. Findings & Conclusion

The study was to determine whether the software and electronic hardware export firms in are benefited through software technological parks in Chennai. Through the analysis performed using 198 samples, it is found that there are significant associations between the schemes availed by software and electronic hardware export firms within technological parks. Also, it is interpreted that both software and electronics hardware export firms within technological parks have availed attestation, CG enhancement and CST Reimbursement significantly high over the other benefits. Further, it is noted that the software export firms within the technological parks have availed a high amount of government schemes over the electronic hardware export firms in the technological park. It was further found from the analysis that most of the large, medium and small size firm uses; Import approval – duty-free, SOFTEX form certification and CST reimbursement.

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