



## THEORETICAL MODEL FOR PACKING UNITS IN MAHARASHTRA PROVING INCREASED GROWTH RATE (C.A.G.R) FROM GREEN MARKETING

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### **Abstract**

*The present paper is an Original research work of the researcher. The research paper is a theoretical Model that has been tested on Packing Units in Maharashtra state. The model depicts different green life cycle stages of the MSME (medium and small sized )Packing Units in Maharashtra and also discusses prominent features of each green stage along with approximate time period for which each green stage of the concerned packing units lasts. This model not only depicts different life cycle stages of a MSME's post implementation of any green marketing program or practice but also calculates the increased financial returns on investment (ROI) made on such green marketing practices in the form of CAGR (Compounded Annual Growth Rate) pointing towards the fact that implementation of any green marketing program or practice not only results in increased financial returns for the packing company but also higher annual growth rate. To prove this fact the researcher divided Maharashtra state into 6 geographical clusters and sampled equal numbers of green packing MSME's (those which have already implemented green marketing) and Non-green MSME's (those not doing any kind of green marketing) from each geographical cluster and compared their CAGR for the same base period taken from 2015 to 2018. The results prove beyond doubt that green marketing has proved to be not only ecological conservation tool but also provides higher financial returns and increased annual growth rates.*

**Key Words :** *Green Marketing Model, CAGR , MSME, Packing Units, Green Packing Units Etc.*

**Introduction :** While doing my doctoral study on implementation of green marketing practices by the packing organizations in Maharashtra state I had developed basic concept of this model; which now has been developed in to a worked out and applied mechanism. Study of Green Marketing practices in Packing units of Maharashtra State gave information regarding wide array of green activities that could be performed by these units as well as information was obtained regarding variety of green marketing practices that these units are already implementing or preparing to implement. While collection of data was being done ; which subsequently proved to be a long and time consuming exercise; many observations were done regarding different operational aspects of these packing units , few of them were quite astounding as against the general common observation of disinterest in green marketing practices there were some companies which are going out of the way and taking extra efforts to implement green marketing practices and to provide green packing products to the customers. Some have installed ground water tanks to store and recycle used and floating rain water ;which is ordinarily wasted . Some others have gone beyond this and have started training their employees for green processes , green products and green certifications, few companies have already earned green certifications for their efforts while others are in the process to get rewarded for their hard work. Well one very prominent observation was done and that observation was those packing companies which are already implementing green marketing practices and general green practices (CSR) have been found to have improved economic performances over the years as they delve deeper into the green management Researcher then decided to identify the reason as to why the packing companies implementing green marketing practices have better economic performances compared to those packing companies using traditional marketing and manufacturing practices.

For this purpose a theoretical model development was undertaken to calculate CAGR(Compounded Annual Growth Rate) of packing companies ; sample included both types of packing companies i.e which have implemented any kind of green marketing practice as well as those which have not implemented any kind of green marketing practice. A sample size of 120 packing units which are medium and small scale packing units were chosen and the care was taken that almost all of these packing companies have started implementing green marketing activities and other green activities at least 2-3 years back from the date of



data collection i.e base period of implementation was taken at 3 years for each company that has implemented any kind of green marketing practice, also the care was taken that almost all of these packing units have registered similar turnover during last 4-5 years; on identification of such units a detailed discussion was held with the senior employees and operation managers of these organizations for which many repeated visits were done to these organizations. This theoretical model thus calculates C.A.G.R for companies implementing any kind of green marketing practice and then compares this CAGR with the CAGR of non-green packing companies for the same time period and this difference would reveal whether implementation of green marketing in any form and type actually contributes to the financial health of the green packing companies. Also the Model explains different stages (as carefully studied during the conduct of the research study) each MSME packing company goes through in order to become green. In other words the research study conducted on green packing units in the state of Maharashtra has enabled the researcher to identify different stages that the packing units have gone through in order to become green and to implement green marketing. The sample of 120 chosen units were scattered over different districts of Maharashtra hence the units where repeated visits were not possible were contacted by mails and over phone and skype online services to obtain required information in detail. Many of the visits were unfruitful hence more visits were paid to collect the required information and on collection of the data, it was again back-checked with the available company authority on phone to eliminate any error of chance or human –mistake. During this phase it was observed that the companies were unwilling; if not reluctant to disclose their financial figures in any format whatsoever hence they had to be convinced to give approximate financial and investment data to be incorporated in the model. The present theory tries to chalk out a roadway or a pathway for small and medium packing companies which have implemented green CSR and green marketing activities in any form from their end and are continuously evaluating and monitoring its progress.

The above selected packing companies have many business related factors which were common for them i.e their approximate annual turnover figures for last 4-5 years, their product range; which mostly included paper products, corrugated cardboard boxes, wooden packing platforms and packing tapes and straps, their geographical area of operation i.e neither complete metro nor a complete rural area, the geographical surrounding was town like areas, their logistics and transportation facilities, their market segment and most importantly the nature of green activities they were implementing were also observed to be of similar nature.

**Research Methodology :** The idea of developing a working model on the data collected proved to be fruitful, since the data was collected in repeated visits to a limited number of companies that were MSME packing units and scattered all over Maharashtra; it represents the entire packing Industrial units and hence the model outputs could be extended and applied to all MSME packing units in India as more or less their investments, operations and returns are similar for similar packing products. For the convenience of calculation of comparative CAGR; wide area of Maharashtra state has been divided into six cluster depending on the major geographical regions of the state.; they are Mumbai &Konkan Cluster, North Maharashtra Cluster, Amravati Cluster, Nagpur Cluster, West and South Maharashtra Cluster and Marathwada Cluster. For each cluster 10 green packing units (those practicing any kind of green marketing) and 10 Non-green packing units have been taken as samples. Hence total 120 packing units have been sampled from six different geographical clusters. The following are the details of the research methodology for the current study:

**Sampling Area :** Six Geographical Clusters of Maharashtra State i.e Marathwada, Nagpur, Mumbai &Konkan, West & South Maharashtra, North Maharashtra and Amravati Cluster.

**Sampling Unit :** MSME Packing Units (Green and Non-green both).

**Sample Size :** 120 (20 from each cluster; (10 green packing units and 10 Non-green units).

**Sampling Method:** Systematic Random Sampling.



**Primary Data Collection** :Through field visits & subsequent interviews , telephone , e-mails ,skype chats etc

**Primary Data Collected**

1. Type of Green Marketing Practice.
2. Time period of implementation of green marketing practice.
3. Initial investment done in implantation of green marketing.
4. Final returns from the chosen green marketing practice (.3 yrs).

**Secondary Data Sources** : Company manuals, government reports on packing industry, Publications, periodicals, research journals, articles, websites etc.

**Model Theory** : The Model theory elaborates on each stage that a MSME Packing unit in Maharashtra goes through in order to become green i.e to start implantation of green marketing practices and to slowly integrate these green practices into core business areas. Researcher has identified five major stages of the green evolution of the packing companies. These stages are

1. **Superficial Greening or NON-GREEN STAGE**
2. **Tactical Greening or LEAN GREEN STAGE**
3. **Quasi Strategic Greening or PARTIAL GREEN STAGE**
4. **Strategic Greening or INTEGRATED GREEN STAGE**
5. **Maximum Greening or EXTREME GREEN STAGE**

**For implementation of any green program following stages are generally utilized**

1. **Organizational support**: Implementing a green program means changing policies and procedures. For it to be successful, it is essential that management support the initiative fully. In addition, those charged with making purchasing decisions must be involved in the implementation process. Their suggestions and support are critical.
2. **Self-evaluation**: An important step in implementing green program is conducting an evaluation of present purchasing practices. This process will help to clarify what is purchased, in what quantities, from where and at what price. The evaluation will provide a baseline, in order to measure future success and to focus the development of green procurement goals.
3. **Set goals and Objectives**: A broad policy should be established, and specific priorities and targets set.
4. **Develop a strategy**: It is now to time to identify and implement changes, both short and long-term, identify suitable products and services, and evaluate the environmental performance of organizational elements.
5. **Run a pilot project to identify Gaps & problems** : A pilot project can provide practical experience in purchasing green raw materials and manufacturing green products and services, by applying green principles to a specific product or service. Pilot projects can be used to generate more detailed guidance on green practices.
6. **Implementation and Management**: Implementing the green program will require an assignment of accountability, plus a well designed communications plan addressing employees, customers, investors, suppliers and the public.
7. **Sustainment**: As with all business practices, it is important that a systematic review of the green program be carried out, in order to establish whether the scheme is meeting its goals and objectives. The review should take into account changing environmental goals. Following are the identified stages of green evolution of MSME Packing units -

**Superficial greening or non green stage**

This is a phase where the company management arrives at a decision to start implementing green practice which is either associated and aligned with the marketing activity of the company or could be generic green activity in nature. The implementation of green marketing activity is done due to various different reasons such as

1. Competitive Pressure.
2. Conscious Effort towards Green Management.
3. Government Regulations and Norms.
4. Genuine Concern for Environment.
5. Decision towards entering green product manufacturing.
6. To develop Eco-literacy of the Employees.
7. Decision to implement Green Strategy.
8. Due to increasing consumer demand for green products through green companies.
9. Due to strict export norms .
10. To start green innovation to reap benefits from green marketing mix factors.
11. To promote green packing and sustainable lifestyle and consumption.
12. To implement green business operations i.e green supply chain management.
13. To establish their products as green brands etc.

There are numerous reasons as to why a company wishes to implement a green marketing activity or a green csr program; it could be said that such an activity is not only essential but often critical for the business performance and survival of small and medium scale packing units in Maharashtra. In this stage the company is trying to find directions as to what output or achievement it is looking for by the implementation of green marketing and green corporate social responsibility programs. The organization may proceed to implement the green activity for short term or for along term span, the short term span usually for a small and medium scale packing company can be put at 10 to 15 years while a long term span could extend up to 50 years or more . Many companies go for permanent implementation of green marketing activities as they provide much more than what is expected from them at the implementation stage. Since in this stage the decision to implement and start the green marketing activity is taken it is also known as Non-green stage ; as most of the companies have not yet started any kind of green activity or csr program, also there are some companies which are involved only in some kind of green advertising of their product which perhaps has one or two superficial green feature such as biodegradable plastic or a less emission of carbon gases, such companies which are not implementing any kind of green marketing activities, which have not adopted any green manufacturing strategy or which are not involved in any kind of green management but are promoting some singular green feature of their products are called as Superficial Green Companies and hence this starting stage is also often called as the Superficial green stage. It is generally observed for 1 to 3 years but could prolong depending on company policies, culture and green orientation.

This stage is also characterized by making provisions for financial and material requirements to implement proposed green marketing activity or green social program. At the start of green marketing activity often there is confusion amongst the employees about the nature and purpose of the green marketing activity that is being considered, briefings and meetings of employees and staff are taken across different levels of the companies and a brief letter is circulated to inform every employee regarding the proposed green activity. eg SanjeevFlexipackPvt Ltd, Thane, Positive Packaging Industries Ltd, Mumbai, Safepack Industries Ltd, Pune, Bobst India Pvt Ltd, Pirangut, Near Pune etc.

### **Tactical Greening or Lean Green Stage**

This is the Second Stage of implementation of green marketing activities hence the organizations have by and far improved a lot on their green perspective and green vision by carrying out the implemented green activity day in and day out. In this stage even the companies are lean green or in simple terms very little green , they are still carving out their green route and as they progress they get more meaningful ideas and visions to carry forward their green movement. It has been observed that the progress of each company is different with difference in their production pattern, organizational culture, vision, mission and their policy governing the green activity. Some organizations reach this stage very quickly while others take 3-5 years to reach this stage of green roadmap. This stage of company's roadmap is characterized by their overall efforts to become good corporate citizens. The organizations do not emphasize publicizing or marketing of their green initiatives; their interest

lies in reducing the operational costs and expenditures as also improving their operational efficiencies through pro-environmental and ecological activities. Hence they are more focused on creating low cost competitive advantage in as many business areas as possible. Hence they are looking at cost advantage not a green advantage yet. These companies have not yet reached a green maturity platform hence they are not in a position to obtain any benefits from green market segments and as they have not perfected and developed their green initiatives they are yet in the testing stage hence they do not prefer to take any risk by promoting their green initiatives. Though they do not stop promoting any old routine green promotion that has been going on for a long time in fear of losing established market. Yet in this stage the organizations focus on complying with the green norms and regulations, do not wish to be differentiated from their competitors yet. The most important reason for not promoting their products green attributes or their green activities is because they fear that all their products might be labeled as green and they might lose the big major chunk of traditional market segment. Hence companies in this stage prefer to separate their green product (if they feel safe to launch it) and position it differently from their other products. eg Most of the packing companies like Bora Packaging Pvt. Ltd, Pune, Reliance Packaging Industries, Mumbai, APT Packaging Ltd, Aurangabad etc

### **Quasi- Strategic Greening Partialgreen Stage**

In this third stage of greening the organizations now have enough experience and understanding of the green issues hence these organizations start identifying their green research and development plans and objectives, they start planning for their own single large green product or even a range of green products; in case they already have a superficial green product they start an entire new product venture with different paradigms. They shift their focus from cost-effectiveness and economies of operations towards the green competitive advantages that they could obtain from the identified market segment, This stage characterizes their readiness to get into green business. They develop green brands and try to create a niche segment for themselves. Green techniques like Life –Cycle- Assessment and Cradle –to-Cradle Approach are integrated into the NPD (New Product Development) process, the innovative approach is carried into product designing and packing. The product has unique appeal and sets itself apart from the Competitors. Often companies redesign their logos, change their logo colours, change their mission statement to appear more green, more sophisticated and more environment conscious. They start implementing green processes, implementing energy saving methods and techniques and often reach out to public to emphasize their green movement and their approach is to convince the customers of their true green intentions. They reach out to customers, stakeholders, suppliers, general public with their plans on how do they see themselves as green company of future. They change their marketing mix and adopt green marketing mix, they adopt green pricing and green supply chain also (in some cases). This stage generally lasts for about 5-8 years but depends on the company. Common examples are KRIS Flexipacks Pvt. Ltd, Mumbai, S.V.P Packaging Industries Pvt. Ltd, Mumbai, Supreme Packaging Pune, Arms Packaging, Mumbai etc

### **Strategic Greening or Integrated Green Stage**

This is a fourth stage of the green activity implementation, and more or less now the organizations have already chalked out their independent green path, they have their own green communication programs in place due to their meticulously prepared green promotion contents, their products are recognized as true green products some companies have even received green certifications for their various green processes and innovations in manufacturing process, these are generally recognized as green companies and almost each and every product of such companies have green attributes of different weightages. Their technology and automation has reached a stage to provide complete green products with eco-designs and ecological attributes and low carbon footprint, they often establish an independent division or unit only to cater to the green market segments, they often modify their marketing strategy and adopt green supply chain and green logistics and transportation methods, common examples of this stage are Xerox corporation with its green wrap paper which has complete green manufacturing right from the growing of the tree to its complete life cycle. The highlight of this stage is complete integration of green Strategy into its routine operations and aligning its practices and policies with green business objectives. The stage is generally observed for about 8-10 years but it depends on the company. The concern for the environment and sustainability is very high in

this stage and the company often starts wide scale broad programs to involve the employees and community as an integral part of their green manifesto. The companies try their fullest to shoulder and fulfill their environmental and social responsibilities. eg Tetrapack India Pvt. Ltd, Pune, Parksons Packaging Pvt. Ltd, Mumbai, Greenpack Pvt. Ltd, Aurangabad, Amerplast, Tampere, Finland etc.

### Maximum Greening or Extreme Greenstage

This is the fifth and final stage of the roadmap for the Packing Companies i.e however more and more green the packing companies become or try to become they will still be called as extreme green packing companies. At this juncture the organization has fulfilled all its green objectives and have almost tried and tested every green product they could develop, the company here is the one that has established green brands and their logos and performances are taken as benchmarks in the Industry. These companies have nothing more remaining to achieve from the business point of view and now they are concerned only about managing the current state of affairs as it is. It is often said that managing your topmost achievements through time is often the most difficult task even difficult then achieving that position. Hence they are focused on maintaining their high performances and iconic positions in the industries. Since they have achieved almost everything that they had expected when starting their green activities they are now more focused on social and environmental responsibilities and share economic burdens in different social areas. Many such companies have even tied up with the governments and are arranging for the funds and other resources for social and economic upliftment of rural areas, this kind of alliances are commonly seen in developed European countries. This stage is characterized by recognition as a complete green company, ample of government certifications, recognition as eco-efficient company, high stakeholder value, improved environmental performance, contribution towards sustainable development on regional and national levels, green branding and high International recognition. It is sad to note that none of the packing units in Maharashtra or as a matter of fact in India can be classified in this stage. The most common example of this stage is Bodyshop International is a Cosmetics giant of USA known for its complete and true green policies and practices, they started going green in 80's and in 1992 they converted their entire supply chain into a green supply chain management with introduction of Eco-friendly Supplier Awards. This was seen as a milestone step towards going green and since then the company has never looked back. Any packing company which has been focused on their green programs should be able to reach this stage after 10 years approximately from starting their green activities but again it depends on various different factors as mentioned earlier. The above model is a perceived theoretical and conceptual model developed to show and trace roadmap of a MSME Packing unit on green marketing platform.

### Formula and Utility of C.A.G.R- (Compounded Annual Growth Rate)

$$CAGR = \left[ \frac{Final\ Value}{Starting\ Value} \right]^{\frac{1}{No.\ of\ Years}} - 1$$

**The compound annual growth rate (CAGR)** is a useful measure of growth over multiple time periods. It can be thought of as the growth rate that gets you from the initial investment value to the ending investment value if you assume that the investment has been compounding over the time period. Compound annual growth rate (CAGR) is an average growth rate over a period of several years. It is a geometric average of annual growth rates. The CAGR is a mathematical formula that provides a "smoothed" rate of return. It is really a pro forma number that tells you what an investment yields on an annually compounded basis; it indicates to investors what they really have at the end of the investment period. To calculate the CAGR you take the nth root of the total return, where "n" is the number of years you held the investment.

### Data Analysis

The calculation of CAGR for Non- green packing units have been done on the basis of initial investment in the marketing operations done (since they have not implemented any green marketing activity or practice). Also

the calculation of CAGR to 8 decimal places have been done only for CAGR of green packing units to obtain accurate value of the returns.

**Table No. 1: Calculation of Cluster wise CAGR for Selected Non -Green Packing Companies**

| Clusters                          | Samples<br>Time period<br>= 2015 to<br>2018<br>(3yrs)<br>*MSME<br>Packing<br>Units | Approximate<br>Initial<br>Investment<br>Value in<br>Traditional<br>Marketing<br>Operations | Approximate<br>Final Return<br>Value on<br>Investment in<br>Traditional<br>Marketing<br>Activities | CAGR<br>(Approx.)             |
|-----------------------------------|--|--|--|-------------------------------|
| 6<br>Geographical<br>Clusters     | Total =50  | *Approx<br>Representative<br>value per Cluster<br>(Calculated<br>Average)                  | *Approx<br>Representative<br>value per Cluster<br>(Calculated<br>Average)                          | *Calculated<br>CAGR<br>(in %) |
| Mumbai<br>&Konkan                 | 10   | 1,10,121   | 1,12,116   | 0.60 %                        |
| Western &<br>South<br>Maharashtra | 10   | 1,20,320   | 1,22,342   | 0.56 %                        |
| North<br>Maharashtra              | 10   | 96,415   | 97,672   | 0.43 %                        |
| Marathwada                        | 10   | 83,229   | 84,886   | 0.66 %                        |
| Nagpur                            | 10   | 78,316   | 82,337   | 1.68 %                        |
| Amravati                          | 10   | 44,520   | 42,126   | -1.83%                        |

As seen above the CAGR values calculated for Non-green Packing units show very little growth rate during the same time period of 3 years (2015 -2018) ; in fact for Amravati Cluster of Maharashtra it is showing a Negative Growth rate i.e -1.83 % , which means the Non- green Packing Units of Amravati region of Maharashtra have incurred losses on their investment in traditional marketing operations from 2015 to 2018.

**Table 2: Cluster-wise Financial Data for Green Marketing Activities**

Calculation of Cluster wise CAGR (Compounded Annual Growth Rate on the basis of Green Marketing Activities) for Selected Green Packing Companies

| Clusters                       | Samples<br>Time period<br>= 2015 to<br>2018<br>(3yrs)<br>*MSME<br>Packing<br>Units | Approximate<br>Initial Investment<br>Value in Green<br>Marketing<br>Activities | Approximate<br>Final Return<br>Value on<br>Investment in<br>Green Marketing<br>Activities | CAGR<br>(Approx.) |
|--------------------------------|--|--|---|-------------------|
| 6Geographical<br>Clusters      | Total = 50   | *Approx<br>Representative<br>value per Cluster<br>(Calculated<br>Average)      | *Approx<br>Representative<br>value per Cluster<br>(Calculated<br>Average)                 | *Calculated CAGR  |
| Mumbai<br>&Konkan              | 10   | 2,65,344   | 5,43,441  | 27%               |
| Western & South<br>Maharashtra | 10   | 1,14,706   | 3,34,229  | 43%               |
| North<br>Maharashtra           | 10   | 1,09,088   | 3,15,231  | 42%               |
| Marathwada                     | 10   | 98,326   | 2,05,114  | 28%               |
| Nagpur                         | 10   | 90,212   | 2,00,241  | 30%               |
| Amravati                       | 10   | 58,561   | 1,49,314  | 37%               |

### Model Specifications

- 1. Model Type :** Theoretical Model.
- 2. Model Utility :** Model depicts different life stages of a green packing unit utilized to prove statistically that green packing units have higher returns than Non green packing units as well as higher growth rate as calculated by the present model with the help of CAGR (Compounded Annual Growth Rate).
- 3. Base Period for Calculation :** Period of implementation of green marketing practice or activity ;Minimum 3 Years (2015 to 2018).
- 4. Category of Packing Units :** Medium & Small Scale Packing Units.
- 5. Green Packing Units :** Any MSME Packing Unit that has implemented any kind of green marketing practice.
- 6. Non-green Packing Units :** Those MSME Packing Units that have not implemented any kind of green marketing practice or activity.
- 7. Base Geographical Units for representation :** Regional Geographical Clusters covering entire state of Maharashtra.
- 8. Base Units taken for Comparison per cluster :** 10 Green & 10 Non green units.
- 9. CAGR Calculation with 8 decimal places :** Done with MS Excel for accuracy.

**Table 3: Calculation of CAGR for Green Packing Units to 8 decimal places**

| 1/N        | Initial         | Final           | Final / Initial | value <sup>1/N</sup> | CAGR(%)           |
|------------|-----------------|-----------------|-----------------|----------------------|-------------------|
| 0.33333333 | 265344.00000000 | 543441.00000000 | 2.048062        | 1.26993368496716     | 26.99336849671640 |
|            | 114706.00000000 | 334229.00000000 | 2.913788        | 1.42829965529497     | 42.82996552949740 |
|            | 109088.00000000 | 315231.00000000 | 2.889695        | 1.42435194638877     | 42.43519463887700 |
|            | 98326.00000000  | 205114.00000000 | 2.086061        | 1.27773947032545     | 27.77394703254540 |
|            | 90212.00000000  | 200241.00000000 | 2.219671        | 1.30445639060710     | 30.44563906071010 |
| N=3        | 58561.00000000  | 149314.00000000 | 2.549717        | 1.36614673523342     | 36.61467352334240 |

**N= Average Numbers of Yearstaken = 3 Years.**

CAGR was calculated with the help of MS Excel software and to obtain accurate value 8 decimal places were taken. Calculation steps for the CAGR data :

**Table No. 4: Final Calculation of Green Packing Units Cluster Wise CAGR**

|  |                             |
|--|-----------------------------|
| <b>Mumbai &amp;Konkan Cluster</b>              | 0.26993368496716 = 26.9933% |
| <b>Western &amp; South Maharashtra Cluster</b> | 0.42829965529497 = 42.8299% |
| <b>North Maharashtra Cluster</b>               | 0.42435194638877 = 42.4351% |
| <b>Marathwada Cluster</b>                      | 0.27773947032545 = 27.7773% |
| <b>Nagpur Cluster</b>                          | 0.30445639060710 = 30.4456% |
| <b>Amravati Cluster</b>                        | 0.36614673523342 = 36.6146% |

**Table No. 5: Final Comparison Results for CAGR of Green Packing Units Vs Non Green Units**

| I<br>S.No | Geographical<br>Clusters                  | Final Cagr Value<br>For Non-Green<br>Packing Units |  | Final Cagr<br>Value For<br>Green Packing<br>Units<br>(Rounded) | Difference In Cagr<br>For Base Period<br>2015-2018 |
|-----------|---|--|--|--|--|
| 1.        | Mumbai<br>&Konkan Cluster                 | 0.60 %   |  | 27%  | 26.40%   |
| 2.        | Western & South<br>Maharashtra<br>Cluster | 0.56%  |  | 43%  | 42.44%   |
| 3.        | North<br>Maharashtra<br>Cluster           | 0.43%  |  | 42%  | 41.56%   |
| 4.        | Marathwada<br>Cluster                     | 0.66%  |  | 28%  | 27.34%   |
| 5.        | Nagpur Cluster                            | 1.68%  |  | 30%  | 28.32%   |
| 6.        | Amravati Cluster                          | -1.83%   |  | 37%  | 35.17%   |

## Conclusion

As seen from the table below the final CAGR for Non-green Packing Units is far behind as compared to the CAGR of Green Packing Units for the same base period of 2015 – 2018, in fact Non-green Packing Units of Amravati has registered losses. which means that green marketing practices guarantee not only higher financial returns but also promotes overall growth rate of the concerned packing company. The CAGR registered by the Non-green Packing Units is in the tune of average growth of 1 % app. Whereas the CAGR registered by the Green Packing Units is varying from 27% growth to 43 % growth annually, which is quite large for these packing units considering that they are all medium and small scale packing units for whom financial returns and growth becomes a do or die situation considering the ever increasing competition.

**Analyzing Higher CAGR for Green Packing Units :** As seen above the CAGR was calculated for both types of packing units which have been implementing green marketing practices for the average 3-4 years and have started reaping its benefits now, as well as those packaging units that have not implemented any kind of green marketing activity. From the findings it becomes clear that green packing units have much higher financial returns and growth rate as compared to the non-green packing units in Maharashtra state. As has been already proven in the findings of this research study. The highest growth rate in investments have been registered by West and South Maharashtra Cluster as this region contains Pune City and MIDC's as well as industrially developed areas such as Chakan, Ranjangaon, Tathawade, Bhosari, Narayangaon etc. Hence the industrial units were really competing on a high growth rates and use modern technology, this area has an advantage of being in Mumbai-Pune belt the most developed industrial region in Maharashtra and India. These units do not compete with each other and eat up each other's customers as seen in Mumbai City (Mumbai and Konkan Cluster) which is the prime reason about the less growth rate i.e 27% registered by these units, in spite of the largest number of the packaging units present in the city and the region around it and these units are utilizing the latest technologies of packaging manufacturing and logistics. North Maharashtra Cluster units have also registered satisfactory growth rate i.e 42% due to the fact that industrially developed cities like Nashik, Jalgaon, Ahmednagar, Dhule etc lie in this region. The most surprising fact that is observed here is the growth rate registered by the Amravati Cluster i.e 37% despite of numerous problems observed with reference to the packing units i.e lack of proper infrastructure, lack of developed transportation, less developed technology, dependence on locally available raw materials and general disinterest observed by the researcher about green marketing. This might be because the cluster has least numbers of the packaging units and each of them enjoy complete monopoly in their respective local markets. Nagpur and Marathwada Clusters have performed similarly in terms of growth in investments i.e 30% and 28% despite of the differences observed in market segmentation and customer demands with respect to packaging products in the regions. In Marathwada cluster the packaging units are concentrated near the developed cities like Aurangabad, Jalna, Hingoli, Parbhani and Manthawhere as the advantage with Nagpur Cluster is that the packaging units are scattered across the landscape giving each unit a good chance of development and expansion in terms of market sales.

The overall findings and observations of the model support the research study in the fact that most diverse and innovative green practices were observed in West and South Maharashtra clusters with genuine interest of the packing manufacturers and service providers in green marketing; as already mentioned in the research report.

## Further Scope of the Model

Studying the above greening roadmap for the packing units in Maharashtra state is very useful for identification of different green concepts, practices and trends that are being adopted and implemented by various packing companies to convert themselves into green packing companies. There is distinction between different concepts and practices implemented by the packing firms, these concepts range from lean green efforts to extreme green efforts depending on which the "Greenness" of a packing firm is identified. Also the above theoretical green roadmap can be utilized to identify different features of different green phases for the packing companies and establish which green phase the company is existing in. As and when the State and Central government would generate "Green Index" for the packing companies; this roadmap would enable and assist in green

ranking of the packing firms. Government could also allot marks or grade points for different features of different green stages of this model and grant awards to the companies reaching a certain score or grade points to promote greenness amongst the packing firms and the packing industry of Maharashtra. Similar policy can be extended towards the packing firms on the national level.

Further research on the above model can be done to map the green features of every phase or stage of the above roadmap with the green indicators to generate a strong greenness measurement model for the packing companies which could be extended to the other industries across the country. The development of greenness measurement model would enable easy ranking and easy identification of actual greenness of the company. This would also enable ease of choosing organizations for awarding various green certifications given by the government and private institutions working for the protection and preservation of the environment. Further research could be done to fine-tune and establish more green features of each stage mentioned by the above model; this would bring more perfection in the model which could be implemented to study green features of different industries on national level. Also more intermediate green stages of existence of the packing companies could be identified, more importantly the time-frame given for each stage is based on general observation of the researcher and as such are approximate time frames hence these time-frames could be further more accurately measured and fine-tuned for each stage thereby increasing the effectiveness of the above model. As done here this model along with CAGR or any relevant financial formula could be used to compare statistically the growth rate or turnover of any green organization in future.

**Expected Contribution of the Theoretical Model :** The above roadmap for green packing companies would contribute in the following ways-

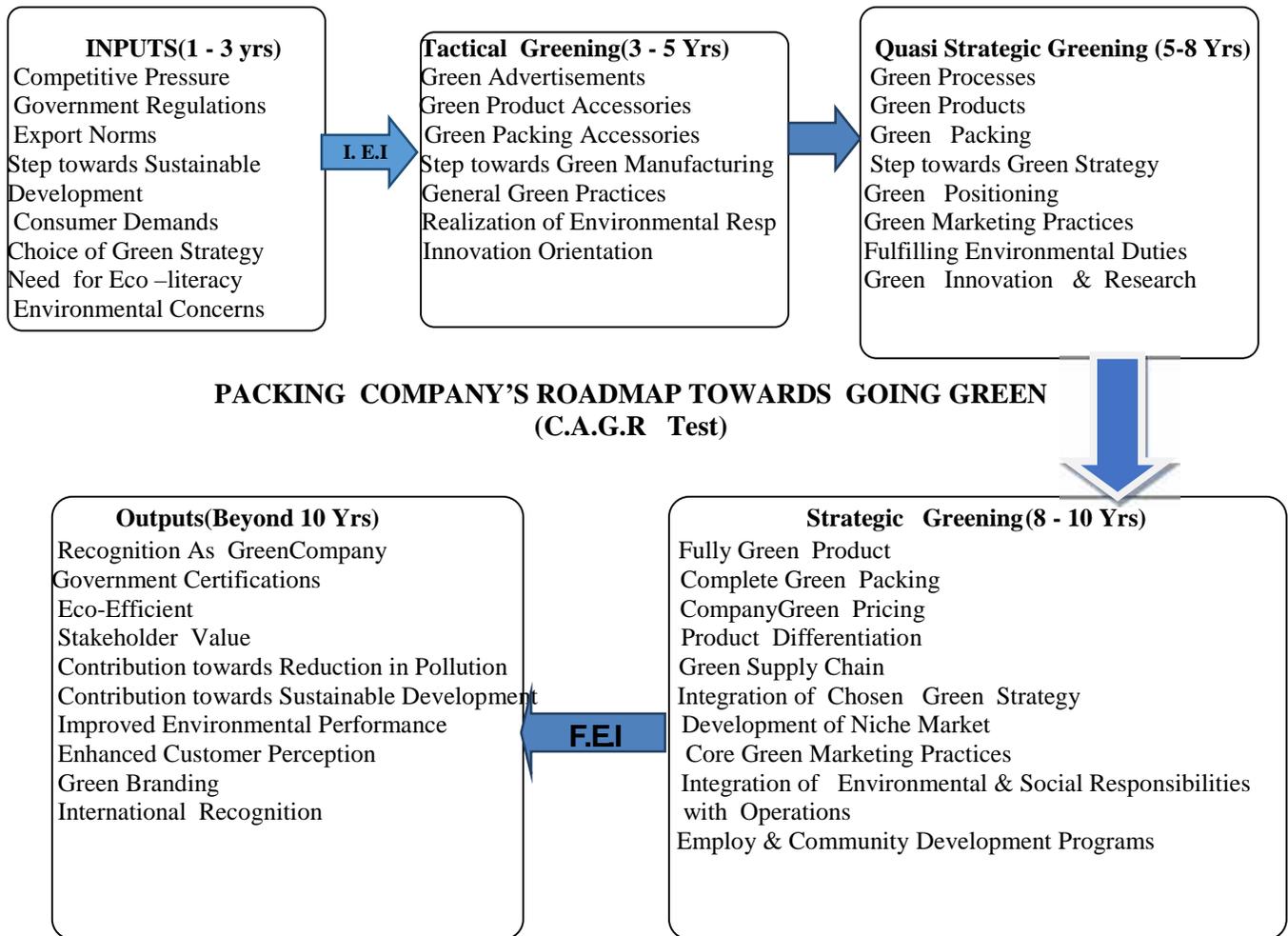
1. Identification of the actual green stage in which the packing companies are existing currently. Also this model designed for green packing units of Maharashtra state could be expanded to other packing units in entire India.
2. Comparison of green features of the above roadmap (in each stage) with actual features of the green program of the company would enable them to take future decisions about expansion, diversification, investment and direction in which the company wants their green program to proceed.
3. Identification of actual "Greenness" of the packing company as against the green claims made by the company in green promotion and green communication to different stakeholders.
4. Identification of "Green washing" cases within the packing industry.
5. Mapping of the green features of the packing companies would enable their ranking and rating on green index, this index could be separately generated for state and national levels.
6. A "Greenness Measurement Model" for packing companies could be generated by mapping the green features of each stage of packing companies with green measurement indicators, which further could be expanded to measure the "actual greenness" of other industries.
7. The above model enables quantification of the returns earned on the investment done by the packing companies in their green activities which is of increasing order, this would enable increase in profits generated by the company, market development for the company i.e establishment of niche market, enhancement of company image i.e establishment of green image, ease in product positioning and product identification viz-a-viz competitor products etc.

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(\*I.E.I = Initial Expenditure Incurred for Green Activities \*\* F.E.I = Final Expenditure Incurred for Green Activities i.eCAGR = Compounded Annual Growth Rate)