

## Bioeconomy analysis in Aesthetic Dentistry

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**Abstract:** Bioeconomy is currently an area of great and mighty power development. High complexity of this field is to combine the use of technologies that use biological resources in the range of human values involved.

This study requires that objective SWOT analysis applied in dental esthetics with strict reference to the quality of work in relation to aesthetic and functional effectiveness of the treatment, the life, the method of reconstruction, working technique, the degree of invasiveness of treatment in relation to conservation dental tissues, execution costs, costs of resources used in dental anterior segment reconstruction and economic analysis of the modalities of treatment techniques reported the need and level of understanding of patients on treatment aesthetic-functional complexity. As material and method took into account the interaction of four factors: Strengths-Weaknesses-Opportunities-Hazards. In group "Strengths" we have included successful treatment aesthetic-functional execution moderate cost, short time working on the seat, which shows limited use of natural resources. In group "Weaknesses" I included invasiveness of biological treatment, increased during execution of the work, aesthetic-functional failure, lack of training practitioners in dental esthetics, lack of existant cabinets to promote interest in aesthetic dental medicine. "Op-

portunities" referred to the minimally invasive treatment of dental tissue in existing clinical context with predictable results, as higher interest of patients for dental esthetics, raising the standard of care internationally. on group "Risks" (threats) I listed: low resistance while works (weak predictability), decreasing purchasing power, changing customer preferences, increase service quality standards.

In the second chapter we presented a report on the economic analysis - term labor - cost - average degree of patient satisfaction . In order to establish an economic plan to make a technical report of treatment ( labor ) - price, average duration, satisfaction, relative to direct restoration techniques versus indirect techniques .

In conclusion, SWOT analysis can be successfully applied to a better targeting of treatments, applying a plan lines for management in dental treatment units. None of direct techniques can not fit the bio-economy principles (saves time, money, dental tissue) in the short term. All maneuvers efficient in terms of functional aesthetics dentistry win at time saving and lost tooth structure chapter to the cost issue. In the long run costs can be amortized, especially since the restoration increases predictability.

**Key words:** bio-economy, aesthetic and functional dental tissue, cosmetic dentistry, minimally invasive.

### 1.1. Introduction

Bioeconomy is currently an area of great and mighty power development. High complexity of this field is to combine the use of technologies that use biological resources in the range of human values involved. Following this economic area of interest for early assessment of technologies, both in business and in the area of social perspective.

Bio principles in dental aesthetics are respected not only by the minimum sacrifice of hard tooth substance, and by conducting functional aesthetic treatments of high quality, durability as extended time so as to reduce the amount of resources possible used to achieve these esthetic restorations.

SWOT analysis is a technique that can identify strengths and weaknesses and the opportunities and threats can examine a project of an action or of a person and can be used as part of achieving balance [4, 7, 8, 9].

In general, there are two ways that can be used SWOT analysis: professional or personal purposes. For personal, SWOT analysis can be used to monitor a person's career,

noting the skills and problems that it has. In a professional context, SWOT analysis can be used to measure the profitability of a business or a project [3, 10, 11, 12].

### 1.2. Objectives:

1.SWOT analysis in aesthetic dentistry with strict reference to the quality of work in relation to aesthetic-functional treatment efficienc, lifetime, method of reconstruction, working technique, the degree of invasiveness of treatment in relation to conservation dental tissue, execution costs, costs of resources used in dental anterior segment reconstruction.

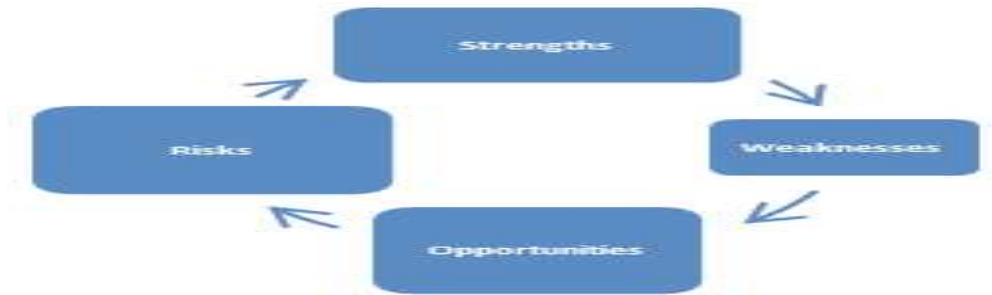
2.Analysis of economically the modalities of treatment techniques reported the need and level of understanding of the complexity of patients' aesthetic treatment.

### 1.3. SWOT analysis

#### Materials and methods:

The SWOT analysis took into account the interaction of four factors : Strenghts-Weaknesses-Oportunities-Risks ( fig.1.1 ) .

Fig.1.1 The SWOT Analysis



In Group I included **Strengths:**

- Successful treatment aesthetic-functional (no appearance of carious processes, microleakage, texture and color retention, marginal gingival tissue biointegrated correctly without inflammatory processes, preserving anatomical shape);
- Moderate execution costs;
- Short time working on the seat, which shows limited use of natural resources. All these elements are advantages in the current socio-economic context .

In Group I included **Weaknesses:**

- Invasiveness of biological treatment;
- Increased during execution of the work;
- Failure aesthetic functional( metallosis appearance at gingival inflammation, color and textural aesthetic degraded inadequacy maxillary complex dynamics);
- Lack of training practitioners in dental aesthetics;

- Lack of existence cabinets to promote interest in aesthetic dental medicine .

**Opportunities:**

- Minimally invasive treatment of dental tissue in existing clinical context with predictable results;
- Bigger interest of patients for dental esthetics;
- Raising the standard treatment internationally.

**Risks (threats):**

- Low resistance while works (weak predictability);
- Reducing purchasing power;
- Changing customer preferences;
- Increasing the service quality standards.

**Results:**

The first analysis includes direct and indirect veneer treatments (Table 1.I).

Table 1.II

Treatment aesthetic	Strengths	Weaknesses	Opportunities	Threats
Direct veneers	<ul style="list-style-type: none"> <li>- for fast execution;</li> <li>- Good aesthetics</li> <li>- Are subject to change by the practitioner;</li> <li>- Does not involve costs and collaboration with dental laboratory;</li> <li>- Moderately priced.</li> </ul>	<ul style="list-style-type: none"> <li>- 4-5 years -predictability by color degradation, microleakage.</li> </ul>	<ul style="list-style-type: none"> <li>- Minimally invasive preparation;</li> <li>- Can be a prognostic mock-up for indirect;</li> <li>- Bigger interest of patients for dental esthetics.</li> </ul>	<ul style="list-style-type: none"> <li>- Low resistance.</li> </ul>
Indirect Veneers	<ul style="list-style-type: none"> <li>- excellent aesthetics;</li> <li>- Predictability 8-9 years old;</li> <li>- Elimination phase of finishing and polishing;</li> <li>- Good resistance.</li> </ul>	<ul style="list-style-type: none"> <li>- High cost;</li> <li>- Execution in 2-3 sessions;</li> <li>- Collaboration with the dental team.</li> </ul>	<ul style="list-style-type: none"> <li>- Minimally invasive technique of preparation;</li> <li>- Developing an aesthetic ideal (natural);</li> <li>- Customized aesthetic treatments;</li> <li>- Bigger interest of patients for dental esthetics</li> </ul>	<ul style="list-style-type: none"> <li>- Reducing purchasing power;</li> <li>- Lack of training practitioners in dental aesthetics;</li> <li>- Lack of information to patients</li> </ul>

A second analysis includes crown restorations made with composite nanohybrid which will be analyzed in terms of dental

tissue preservation, working technique, execution time, predictability and costs (Table 1.II )

Table 1.II

Treatment aesthetic	Strengths	Weaknesses	Opportunities	Threats
Crown restorations performed with classical technique	<ul style="list-style-type: none"> <li>- low-cost;</li> <li>- Knowledge of classical techniques of execution</li> </ul>	<ul style="list-style-type: none"> <li>- Predictability 4-5 years;</li> <li>- Laborious technique of execution of composite stratification;</li> <li>- Finishing and polishing laborious;</li> <li>- Bordered infiltration;</li> </ul>	<ul style="list-style-type: none"> <li>- Reduction of polymerization shrinkage factor C;</li> <li>- Materials, more efficient techniques.</li> </ul>	<ul style="list-style-type: none"> <li>- Occurrence of polymerization shrinkage;</li> <li>- Increasing the service quality standards</li> </ul>

Crown restorations made with vibratory technique	-excellent aesthetics - Minimum working time by reducing maneuvers finishing and polishing; - Top marginal adaptation.	- Slightly higher costs; - The investment in the professional instrumentation.	- Predictability 7-8 years	- reducing purchasing power; - Lack of training practitioners in dental aesthetics; - Lack of public information to esthetic dentistry.
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A third analysis refers to indirect restorations made of aesthetic works, considered in terms of fingerprinting, execution time,

methods of implementation, cost and predictability (Table 1.III).

Table 1.III

Jointly aesthetic dentures	Strengths	Weaknesses	Opportunities	Threats
Classical Impression	moderately low cost	- 2-3 working session; - Changes in impression materials; - Implementing many stages of work in the laboratory that can give errors; - Insufficient visibility of elements on field work - Labor sometimes difficult for the patient; - Hygiene problems.	- Increasing the service quality standards.	- Errors due to the use of inappropriate materials; - Increasing the service quality standards.
Digital fingerprinting CAD /CAM	- working time reduced to a meeting; - Extremely low error; - Achieving adaptation occlusal computer; - Not involving the use of virtual ELEMENTS costs and no damage.	- Costs slightly raised; - The investment in the instrumentary..	- Promoting widespread techniques fingerprints; - Increasing service quality standards; - Raising the standard treatment internationally.	- Return on investment in a long time; - Reducing purchasing power.

## Discussions

SWOT analysis shows that the main risks are related to dental esthetics diminishing purchasing power and changing customer preferences. Strengths were related esthetic results obtained in relatively short time and with minimal sacrifice of dental tissue.

Weaknesses were consistent classical techniques, or the high costs of the investments required.

Opportunities corresponded bigger interest of patients for dental esthetics, raising the standard treatment internationally, increasing service quality standards.

Offering new services is an excellent way to develop dental practice and attract new clients, especially in an economy whose evolution is slower. The challenge is to find those services that not only improve patient care but generate extra income and can easily be incorporated into existing systems of practice for a long time. Dentistry has traditionally been an area which provided mainly a limited set of services. The economic downturn has caused a change so that it became imperative to increase practical opportunities by expanding clinical service packages.

For dentists and dental practice core mission remains to promote and maintain excellent oral health, regardless of economic status.

One of the best opportunities to expand dental services is to implement customized aesthetic treatments.

Today, esthetic dentistry has to answer the following questions:

1. What does the ideal treatment for patients?

2. What are the implications if a patient does not accept the recommendation

ideal?

3. Acceptance of optional services are ideal treatment or simply a luxury?

Physicians should provide the ideal treatment for patients based on a comprehensive assessment of their immediate requirements and ensure long-term oral health. Before determining whether patients will be interested or have the financial ability to accept treatment, should be developed and presented ideal treatment plan. In this trial, patients must understand that the dentist has the vision of their interest in aesthetics and health. Presentation ideal treatment also serves to educate patients on raising awareness of the patient on the treatment recommended to establish an order of priority for completion of the procedures recommended.

**1.4. Economic analysis** on labor-value ratio-term average level of patient satisfaction.

### Material and methods:

In order to establish an economic plan was made a technical report of treatment (labor) - price, average duration, satisfaction, relative to direct restoration techniques versus indirect techniques. It is quite hard to out in terms of prices, because we talk about treatment plan executed in a given clinical context, however we will analyze comparative prices reported only maneuvers that can support this comparison.

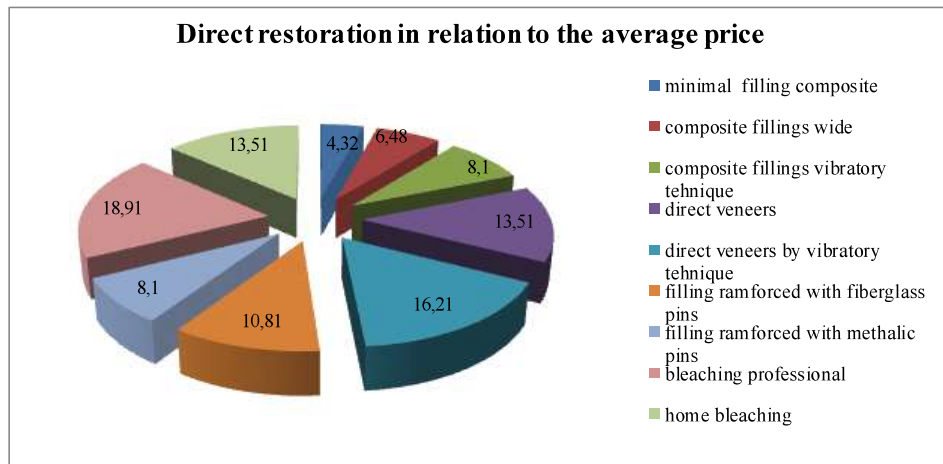
### Results:

Data was entered in the following tables (Tables 1.IV, 1.V, Fig.1.2, 1.3).

DIRECT RESTORATION- Table 1.IV

WORKMANSHIP	AVERAGE PRICE	AVERAGE DURATION	SATISFACTION DEGREE S.....M.....R		
Composite filling small	80 lei	4-5 years		*	
Composite fillings extended	120 lei	4-5 years		*	
Composite obturation technique vibratory	150 lei	7-8 years			*
Veneers	250 lei	4-5 years		*	
Veneering technique viratorie	300 lei	7-8 years			*
Armed aesthetic fillings					
	200 lei	5-6 years			*
Reinforced with metal fillings	150 lei	4-5 years	*		
Whitening cabinet	350 lei	1-2 years			*
Whitening ambulatory	250 lei	1 year			*

Fig.1.2 Direct treatment value



Of direct maneuvers executed in the most expensive aesthetic therapies are performed in office whitening ( 18.91 %) and direct facets vibratory technique ( 16.21 %). In contrast, the lowest prices are those for conventional composite restorations.

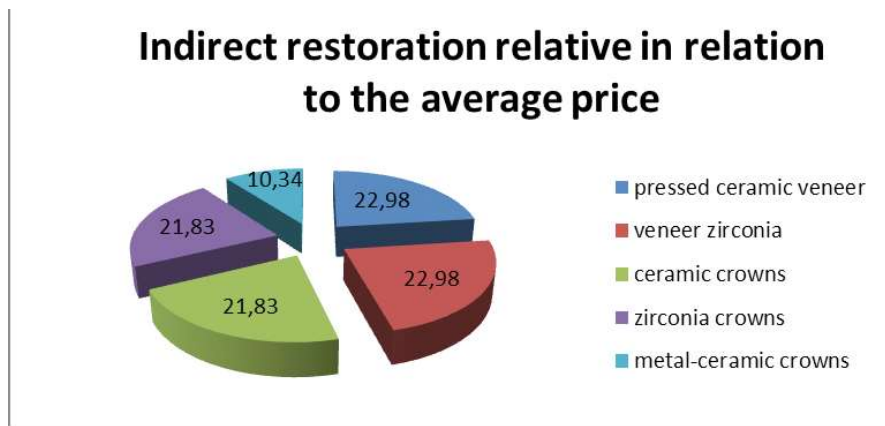
By reporting price-term average shows that there is not always a proportionality between these two parts. Example clearly refers to bleaching techniques that are top

in terms of price but the last places, the average length of persistence. However, patients are satisfied in terms of aesthetics, which is a major element in the choice of dental therapy. Technical application of the composite vibration corresponds in terms of value for money medium term increased price is justified by both aesthetically satisfying the most demanding patients and increased average duration of 7-8 years.

INDIRECT RESTAURATION- Table 1.V

WORKMANSHIP	AVERAGE PRICE	AVERAGE DURATION	SATISFACTION DEGREE		
			Low.....	Med.....	High
Veneers pressed ceramic	1000 lei	10-11 years			*
Zirconiaceramic veneering	1000 lei	10-11 years		*	
Ceramic crowns	950 lei	11-12 years			*
zirconia crowns	950 lei	11-12- years			*
Metalo-ceramic crowns	450 lei	10-11 years	*		

Fig.1.3 Indirect treatment value



Among the most expensive treatments are indirect veneers and zirconia ceramic ferule (1, 5), followed very small differences ceramic crowns (2, 6).

Veneers are an investment with increased price because they are considered aestheticization treatment, but not always necessary when you want an image enhancement. It also can be done in any event. But coverage crowns are often necessary and can be used in more complex situations functional restoration and reintegration dental articular system.

Prices are high but justified ceramics by high patient satisfaction, so aesthetics at the highest standard and median of 10 years.

**Discussions**

There are two main reasons that may prevent a patient to accept a cosmetic treatment: cost and fear of being prepared natural teeth, translated by fear of the dentist, which is an invasive treatment.

The average cost of an indirect facets is about 9000-1000 lei and in most cases, patients require a minimum of 8 to 10 facets for a pleasing result. The result is a total cost of about 72000-10000 lei for these services, an amount that is unthinkable for many patients. It is difficult for them to understand that this cost, for the most part, is the time to make stool obstruction to other more laborious techniques and less invasive.

The composite restorations price difference is the time spent on nationalization



and finishing direct restorations. They are still cheaper, involving fewer sessions and have additional dental baskets. Costs vary between 300-400 lei per side, so a complete treatment would facets 8-10 2400 lei- 4000 lei. In addition, fear of grinding is low, as the preparations for facets are minimal or lacking in clinical situations that allow their application without preparation.

### 1.5 Conclusions:

1. SWOT analysis can be successfully applied to a better targeting of treatments, applying a plan lines for management in dental treatment units.

2. None of the direct techniques can not fit the bio-economy principles (saves time, money, dental tissue) in the short term. All effective maneuvers that wins aesthetically Chapter saves time and lost tooth structure to the cost issue. In the long run costs can be amortized, especially since the restoration increases predictability.

3. From the aesthetic point of view, relative to the average income of the population,

faces technical executives by vibration is a viable solution.

4. Clinical situations that require complex prosthetic treatment can be solved by metal-ceramic works, given the predictability of revenues and treatments.

5. It is strictly necessary to understand the complexity of aesthetic treatment, the positive role of this type of treatment parallels the physical appearance and social, so his acceptance in terms of health, social aspect to be fully financially satisfactory.

6. SWOT analysis can be successfully applied to a better targeting of treatments, applying a plan lines for management in dental treatment units.

7. None of the direct techniques can not fit the bio-economy principles (saves time, money, dental tissue) in the short term. All effective maneuvers that wins aesthetically, saves time and lost tooth structure loses to the cost issue. In the long run costs can be amortized, especially since the restoration increases predictability.

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