

# The Impact of Sustainable Furniture Design Methods On Activating the Durable Cycle of Furniture

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## **Abstract:**

In light of the economic crises and the current waves of high prices, the prices of the furniture industry have risen significantly beyond the ability of the Egyptian consumer to buy, due to the increase in the prices of imported raw materials, on which the furniture industry in Egypt depends entirely. Therefore, we should consider the designs of furniture in the current Egyptian market, and the tendency to adopt design methods that increase the life cycle of furniture to achieve the maximum benefit of each piece of furniture on the one hand, and increase the efficiency of the consumption of materials on the other hand, and sustainable furniture design comes on top of those methods where its content lies In the continuity of the use of products and materials by designing the principle of the durable cycle through the adoption of several methods such as the design of dis-assembly and repurposed furniture which gives the furniture flexibility, quality and ease of maintenance or by the inclusion of ways to deal with furniture damage such as recycling or reusing or remanufacturing, which increases the cycle and the effectiveness of the use of furniture.

## **Keyword:**

- Sustainable Furniture.
- Durable cycle.
- Disassembly Furniture.
- Repurpose Furniture.

## **INTRODUCTION:**

Recently many countries have suffered from major economic crisis at all levels, hence current culture and consumption patterns had to be considered in all areas. The furniture industry is considered one of these most important consumption areas, where it's associated with them all, the cost of this industry has also increased as a result of the increase of raw materials prices and on top of that wood - which is the main material in furniture manufacturing. which led to a price increase of furniture pieces that is above the purchase ability of the Egyptian consumer. Hence a new design patterns had to be innovated to increase the product life-span and flexibility,

through the ease of repair, refurbishment, versatility, storage or recycling. Therefore, a sustainable design movement came to support and introduce these ideas and concepts to the Egyptian furniture consumption mindset by providing sustainable modern designs that satisfies the needs of the Egyptian consumers in terms of form, function and price.

**PROBLEM STATEMENT:**

Insufficiency in making the most of the raw materials used in the manufacturing of Egyptian Furniture, which leads to an exaggeration in the price of the product compared to its consumption period.

**AIMS AND OBJECTIVES:**

Reaching the best of produced furniture in Egypt through durable design methods, and shed light to the importance of adapting sustainable design methods in the contemporary Egyptian Furniture.

**The Importance of the Research:**

lies in achieving durable cycle of contemporary Egyptian furniture, which makes maximum use of furniture.

**The Researcher Assumes:**

- increasing the furniture use cycle reduces its purchasing cost compared to its consumption time.
- the application of sustainable furniture design standards contributes to the furniture usage cycle.

**Hypothesis and Methodologies:**

This research is adapting an analytical methodology through the analysis of sustainable furniture (concept, objective, criteria) and techniques of increasing the furniture life cycle and methods to achieve a durable furniture cycle.

**Delimitations and Research Limits:**

The research is limited to study the sustainable furniture design criteria and ways to increase the furniture life cycle in Egypt.

**The research represents:**

- The research represented to study sustainable design, where its original mains lies in achieving the durable cycle for furniture which the research aims.

**Sustainable furniture design defined:**

"As a design that is a mirage between environmental sustainability and human health and achieving the quality standards and functionality for furniture, through a durable cycle of furniture, where it is continuous, begins the design process for the basic product and then ends the design process for a new product.

**Its aims:**

To find solutions to the problems of the furniture industry, by increasing the life cycle of furniture, and activating the durable cycle for furniture. And good management of natural resources, Highlight the natural beauty of raw materials instead of using harmful materials, and create ideas for new local furniture designs Giving opportunities to the local market.

**Its criteria presented in:**

- Increasing furniture life time.
- Flexibility and small size
- Sustainable wood and material.
- Using the reclaimed material.
- Using the low emission material.
- Using recycling techniques.
- Using the local material.

- Then study some of furniture design methods, which increase the life cycle of furniture such as **Disassembly Furniture** where, the furniture is disassembled and collected by the consumer by using simple assembly methods, they are disassembly, making it easier to repair the damaged parts or replace it with another part, which increases the time life of the furniture and thus increases its life cycle. And **Repurpose Furniture** where, the piece of furniture is flexible, which can do more than one function within a space, and allowed to be used for multiple purposes, this increases the efficiency and lifespan of the furniture life cycle.

-Then study some of the methods that it used to increase the life cycle after damage, such as **reuse** where the furniture is used repeatedly for the same or another function, without undergoing any new manufacturing processes. And **remanufacturing**. where the original product is refurbished to provide a new life cycle, by changing the style of paint or upholstery or change dimensions or replace one of its parts. And **recycling** where the waste is used, whether solid, agricultural or industrial waste and converted into new products, by dismantling or chopping raw material completed and inserted into new manufacturing processes, then get a completely new product may differ in its properties from the raw materials involved in its manufacture, which maintains the sustainability of materials by giving them a new life cycle.

**Conclusions:**

1. The remarkable increase in the prices of furniture produced in Egypt in the Egyptian markets as a result of the high prices of furniture manufacturing materials, especially wood.
2. The use of Disassembly furniture in the design of the furniture increases the shelf life of the furniture piece, which increases the life cycle, product therefore the ability for maintenance and replacing defeated parts.
3. The design of re purpose furniture increases the value and efficiency of the piece of furniture. In which this piece could be used in more than one function.
4. Reusing, regeneration and recycling techniques will give the furniture a new life cycle after the first job for which it was produced or after the damage was completed.
5. Sustainable furniture design methods contribute to many sustainable furniture and internationally are recognized.
6. The application of sustainable furniture design methods contributes to increasing the life cycle of furniture compared to its purchasing value, as well as contributing to the acceptance of the consumer and the Egyptian market for these sustainable designs.

**Recommendation:**

- 1- Emphasis on the need to apply the durable cycles for Egyptian product of furniture as one of the principles of sustainability.
- 2- adoption of factories to develop future plans for recycling and remanufacturing of the product in order to avoid the environment, the problem of waste after use, whether to adopt the same factories for the product after use or cooperation with other known recycling or reuse.

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