Applying Six Sigma to improve the quality of metal furniture products

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Abstract: Rapid technological developments in the field of production and quality control influenced the nature and requirements of quantitative production, which led to the emergence of various industrial products, as the development of the concept of markets to turn from local markets to markets is high competition where each productive enterprise tries to impose its dominance on the market by obtaining the largest percentages of sales possible, which made these institutions seek to find competitive advantages for their products through competition in quality, price or services, which led to the emergence of methodologies regulating the process Design and production to get the highest possible quality at the lowest cost, and one of the methodologies that achieved a remarkable distinction in this framework is the methodology Of Six-Sigma, a set of mechanisms applied to each element or stage of design and production to reach or approach the point (zero) defects, which made it important to research the mechanism of application of this methodology in the institutions concerned with the production of metal furniture to improve the quality of products.  

Statement of the problem: There is a lack of application of standard specifications during the production stages, which limits the level of quality required compared to some competitors. - Many industrial enterprises specialized in the production of metal furniture use traditional methods such as random research and virtual inspection of the product and the lack of proper testing, which leads to increased missing persons and the owners and rejects of the product and thus increase the total cost. - Changes and deviations from the appropriate specifications of the user of the metal furniture product, which negatively affects the reputation of the product in the market.  

Objective: The research aims to improve the quality of metal furniture products (administrative furniture) using the methodology Sigma Six by addressing the phased treatment of defects and problems and adjusting specifications and avoiding defects resulting during production and trying to prevent mistakes during design and industry.  

Methodology: Research follows the introspection approach. Results: The researcher concluded that when applying the Six Sigma methodology in the institutions producing metal furniture administrative will lead to: Arrange production processes and avoid overproduction by manufacturing by supply order according to the needs and desire of the customer, while reducing the production of the half-factory in addition to following the performance of equipment and production lines and the speed of repair of malfunctions. Reducing inventory without demand and avoiding excess inventory in addition to proper storage to minimize defects. Reducing the percentage of defects, errors, missing and fatigue from the product in the industrial institutions specialized in the metal furniture product to the least possible. Improving product quality and approaching zero defect ratios, in addition to reducing waste ratios to as little as possible, which increases its competitiveness in the global markets. Not to allow the existence of a process based on the standards of acceptance or rejection of discretion, but, it must contain visual specifications that help to judge correctly, the design process is based on marketing research or technical specifications by the client, and the operations are based on orders and follow-up supposing from the production and quality departments of the factory. Industrial enterprises are aware of the importance of six Sigma methodology applied to the field of administrative metal furniture. Recognizing that the characteristics of the furniture product are the responsibility of everyone in the industrial enterprises producing it.

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