

Conceptual Design of Hatchback Car to Suit Middle Aged Working Class Indian People



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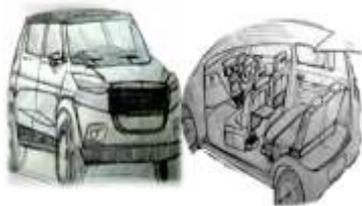
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Abstract:

In recent times, demands for passenger vehicles have increased with better living style and urbanization. Even though there are enough public transportation modes available, people prefer their own vehicles. Hatchback cars are one of the popular segments in India due to low price, reasonably good interior space and shorter length which are suitable for city driving conditions. At present, most of these cars are designed in general for all the age group. Sometimes, employees or business men travel together and discuss their work related issues. So there is a need for an environment inside a passenger car to support and assist their work activities. There is a need to provide different systems like infotainment, charging or any other essential facilities according to customer requirement.

In this current project work, an attempt was made to conceptually design a hatchback passenger car that suits to the life style of middle aged working class people for Indian conditions. Initially literature survey and Gemba study was carried out to understand the requirement of middle aged working class people during travelling and on interior design of small passenger cars. Product Design Specifications (PDS) and Quality Function Deployment (QFD) were developed based on Gemba study combining technical and customer's voice. Concept sketches of hatch back cars were created incorporating the necessary infotainment systems, adjustable seating arrangements, LCD displays, utility box and essential facilities required for a working class passenger. Detailed design, drawings, geometric model and rendering of the selected concept were generated using Autodesk Alias and UG Nx tools with all the necessary features incorporated as per the concept sketch.

Ergonomic study on the car interior was carried out to evaluate the seating comfort and interaction of the passengers inside the car environment. A scaled mock-up model was developed with all necessary features incorporated and demonstrated.



Concept sketch of a hatchback passenger car



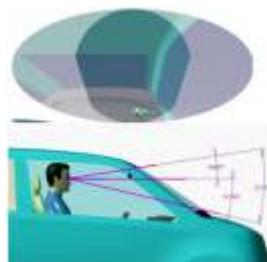
Virtual model of the hatchback car



Car interiors



Ergonomic analysis for seating comfort, reachability and easy accessibility



Vision analysis to get field of view from driver's position



Mock-up model