

Redesign of panipuri stand cart

Semester thesis project

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Master of Design

By

Rijas MP

M Des (154205020)

Project guide

Supradip das



Department of design
Indian institute of technology- Guwahati
Assam-781039

Certificate

This is certifying that the project report entitled "**Redesigning of panipuri stand cart**", is an authentic work carried out by

Rijas MP

M Design (154205020)

At Department of Design, Indian Institute of Technology Guwahati

The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

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Rijas MP
M Des
Department of Design, IIT Guwahati
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Abstract

This project deals with exploration of Manipuri stand cart. We all know that panipuri is the one of the famous Indian street food and stand cart is the identity of panipuri vendors all over India. Thus, the result of the project is redesign the stand cart to wearable stand cart that can be used as a carrier for transportation as well as a stand for selling.

Introduction

The project is on redesigning of panipuri stand cart. Panipuri is the one of the famous Indian street food that is available most of the places in India.

we can see different types of panipuri vendor carts like stand cart, two wheeled cart and four wheeled cart but stand cart is the most popular among them and it is the identity of panipuri vendors.



Figure 1. panipuri stand cart

1.1 Problem Statement

Our existing panipuri vendors facing problems related to

- Transportation
- Selling
- Ergonomics
- Hygiene

1.2 **Aim**

To redesign conventional panipuri stand cart to enhance

- Productivity
- Transportation
- Sale
- Ergonomics
- Hygiene
- Attractiveness
- Efficiency

1.3 **Objectives**

- Study of existing panipuri vendors.
- Redesigning panipuri stand cart by exploring different methods of selling and transportations, materials and so on.

Chapter 2

Study

2.1 literature review

The street food industry has an important role in the cities and towns of many developing countries like India in meeting the food demands of the urban dwellers or we can say that it related to both survivals of both consumers and vendors.

Our India has rich heritage of food and recipes especially street foods. panipuri is the one of the famous street food because its unique experience of consuming and availability with reasonable price.



Figure 2 stand cart



Figure 3. two wheeled cart



Figure 4. four-wheel wooden cart



Figure 5 four wheeled metal cart

2.2 detailed explanation of field study

Field studies are conducted to get some ideas about existing - panipuri vendors and their carts. In first field study had got details about panipuri vendors, carts, transportation and packaging.

2.2.1 Panipuri Carts

There are many kinds of panipuri carts present in the market. Stand cart, two wheeled cart, four wheeled cart are the category according two transportations. If we take material mainly wood and metal carts are there.



Figure 6 selling methods

selling

In case of selling all type of vendors sell as stationary food vending, that means there is no mobile selling system for panipuri. Stand cart vendor use to carry panipuri and ingredients to his destination and sell there.

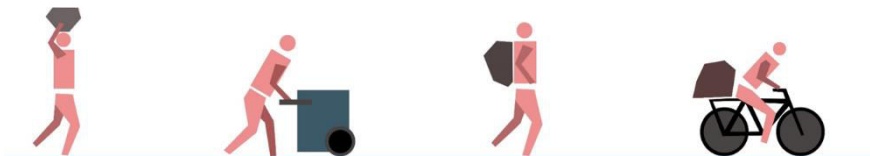


Figure 7 transportation

transportation

Most of the vendors use to cook panipuri from their home and carry to their destination by walk or on vehicles. One is carrying in back bag or bicycle.



Figure 8 main parts



Figure 9. main ingredients

2.2.2 stand cart

We already discussed about stand cart, one of the famous panipuri vending cart. Stand cart is considered as the identity of the panipuri cart.

Main parts

It has four parts. Stand, base, vessels and waste bin.

Ingredients

puchka, masala, peanut, boiled potato and pani are the main ingredients used in vending.

Weight

Total weight they carry on head is 20-30kg

Expenses

Total cost of the stand cart is around 4000-5000/- rupees. It includes stand 250/-, wooden base 2000/- and others 2000/-

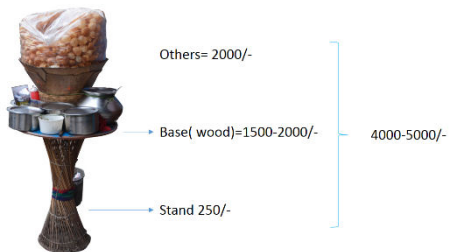


Figure 10 expenses



30-40Kg

Figure 11 total weight



Figure 12 transportation as headload

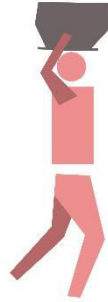


Figure 13. distance travel everyday

transportation

they use to transport it as headload. They carry all the vessels and ingredients on the head, and stand hang on the shoulder by a string. They like to transport it as know, because by walking they can go through anyway, anywhere anytime.

Most of the stand cart vendors use to travel minimum 3 km from home to market as one side journey.

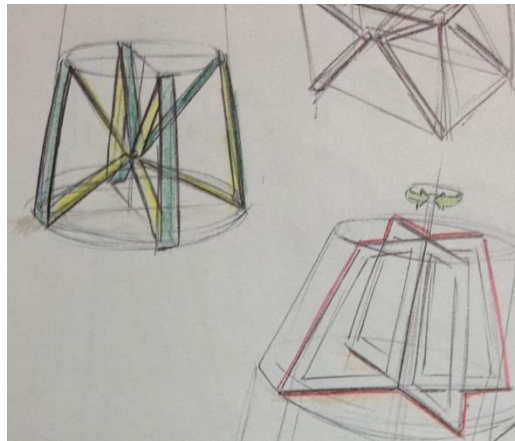
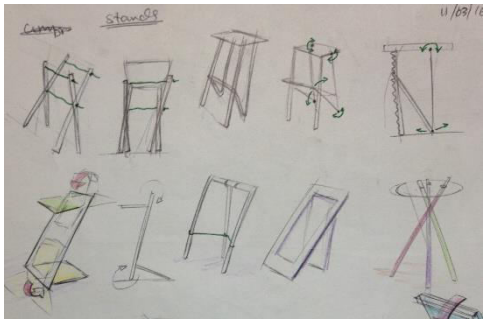
2.3 Problems identified

Problems are identified from the field studies, they are

- There is no mobile panipuri vendors
- No one is carrying any kind of bags like back bag
- In stand cart, they carry 20-30kg on their head
- Stand cart vendors walk 3km from one side in a day
- They don't have enough space to keep ingredients and vessels on stand cart

2.4 Project brief

in this project I am going to explore and redesign panipuri stand cart to resolve problems related to transportation, ergonomics, and all. Finally, will make 1:1 prototype and do user study.



Chapter 3

Execution

3.1 ideation

In this stage started with ideation of panipuri stand as a primary stage. Finally came out with wearable stand concepts.

3.1.1 ideation of panipuri stand

In this phase, came out with different kind of stands, mainly foldable stands.

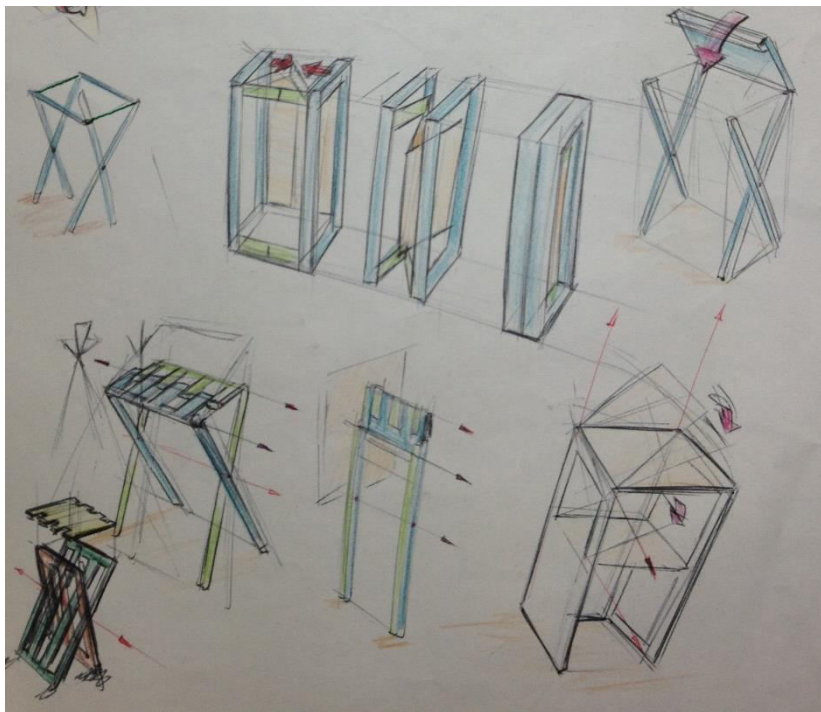


Figure 14. ideation sketches of panipuri stand

3.1.2 load carryng and distribution

They carry all the load on their head. Here tried to distribute this loads in different ways.

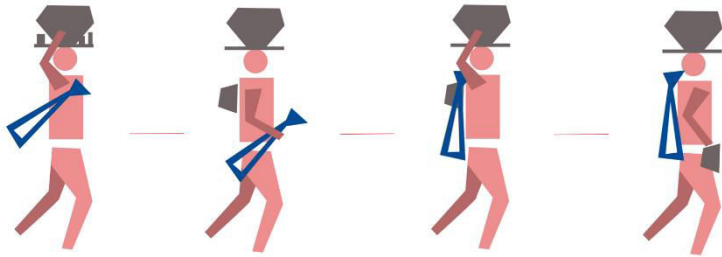


Figure 15 load distribution in different ways

- 1 Normally they carry full load as head load
- 2 They can distribute some load as back bag, means ingredients can keep in back bag
- 3 Stand and back bag together
- 4 Stand wear on back and ingredients are in hand

3.2 Inspiration board

inspiration for load carrying and packaging

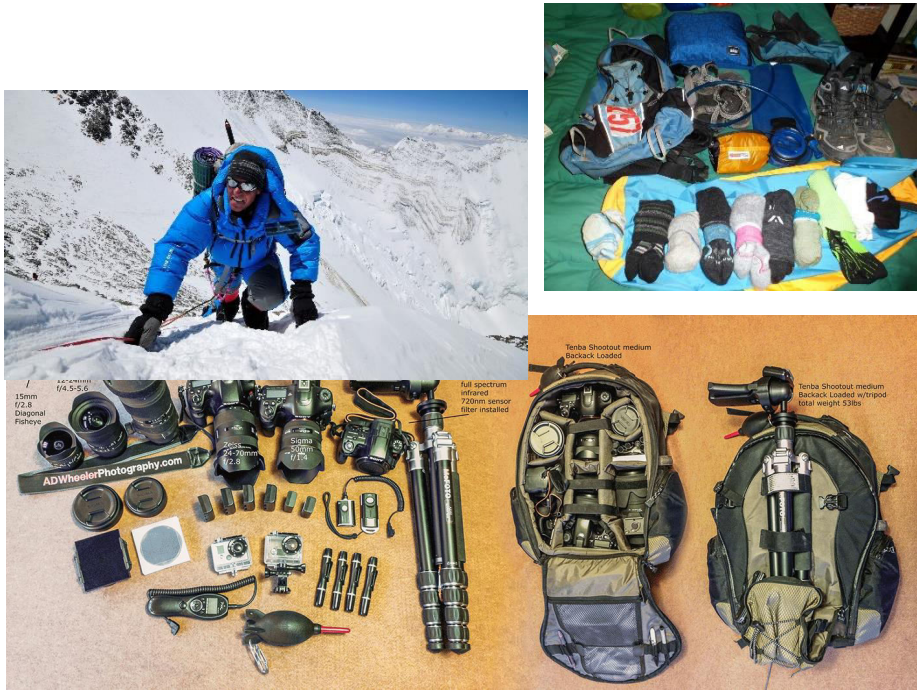


Figure 16. packaging inspiration from photographer and mountaineer



Figure 17 load carrier inspiration from NID design



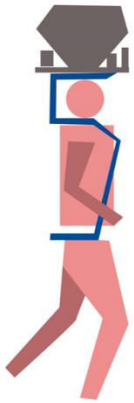
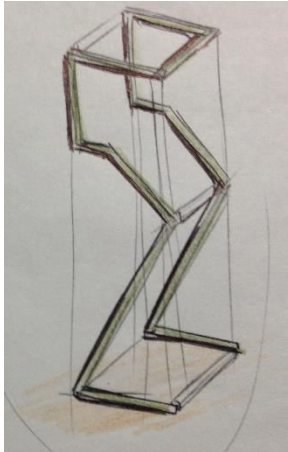
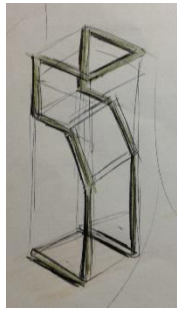
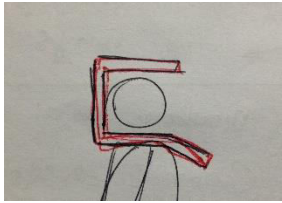
3.3 Concept generation

Started with concept making for load carrier then finally it reached in wearable stand. All concepts done by making scaledown mock-ups with iron wire and minikin is used to get correct propotion.

3.3.1 load carrier concept

Load carrier concepts were made in 1:6 scale using iron wire.

Figure 18. load carrier explorations



3.3.2 wearable stand

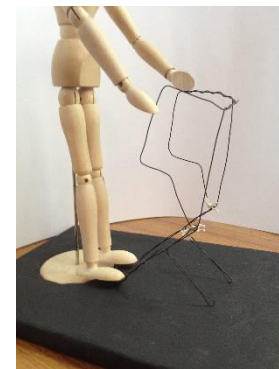
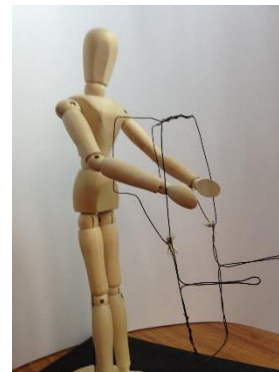
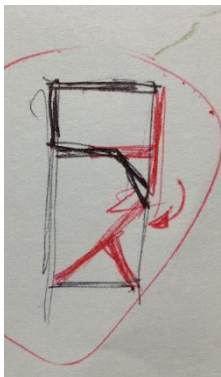
These concepts were generated from sketches, then made mock-ups with iron wire.

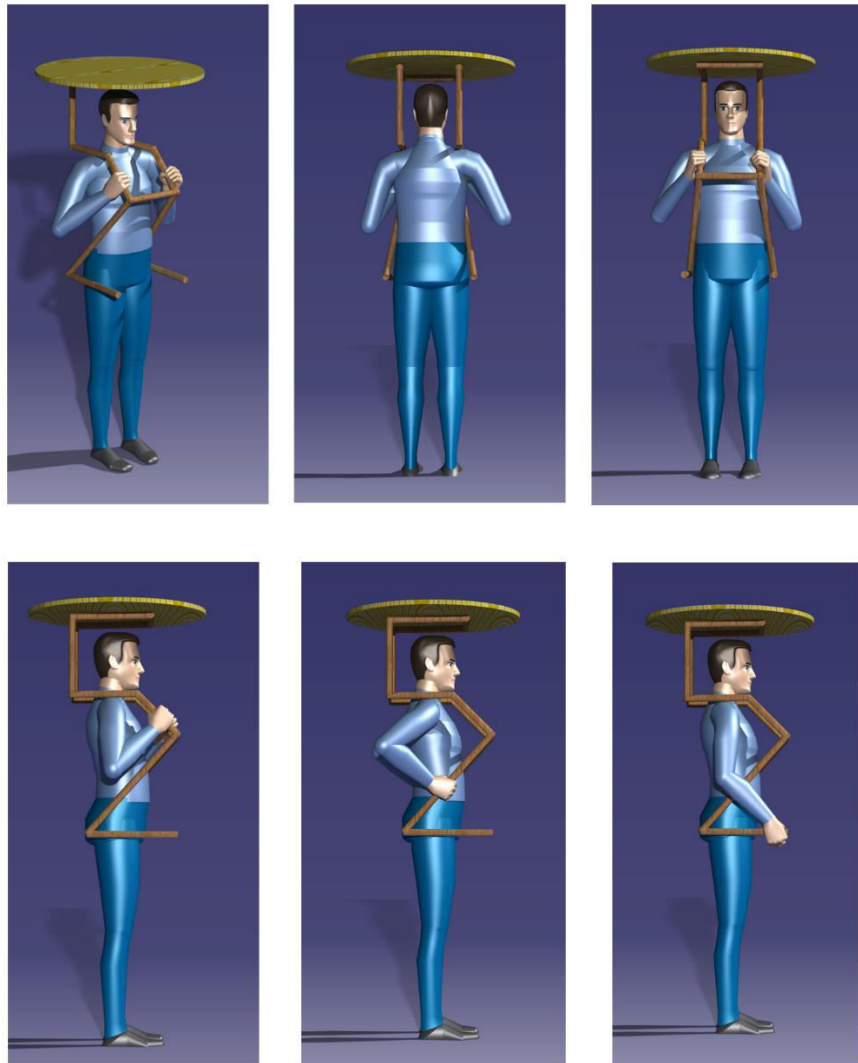




3.3.3 Foldable wearable stand

Foldable wearable stand explorations also done.





3.3.4 wearable stand cad model

3d model of wearable stand is done in catia software.

Figure 19. shows three different hand holding position



3.4 Prototype making

1:1 scale prototype made with pvc pipe. Many iterations were done from feedbacks and testing. Initially 1:1 mock up was made to get dimension and proportion, then started making prototype.

Figure 20 1:1 mock up

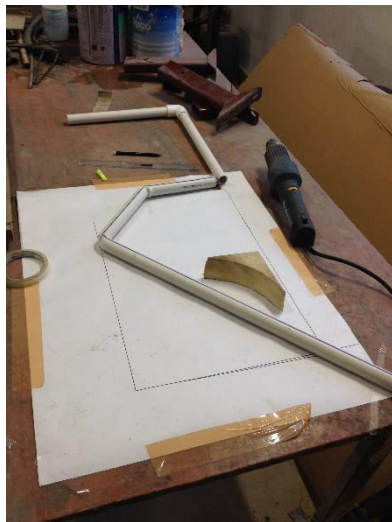




Figure 21.1:1 final prototype made from pvc pipes

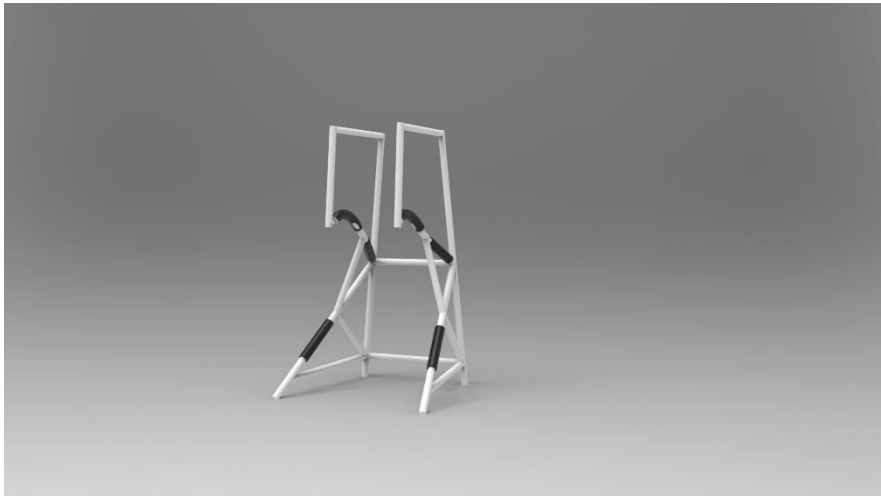


3.5 final concepts

Finally came out with four concepts with respect to materials and transportation.

3.5.1 concept 1

This concept generated by taken pvc as a material. So strength of the pvc pipes has considered.





3.5.2 concept 2

This concept is made for bamboo, that is locally available in assam.





3.5.3 concept 3

This is the simple wearable stand that can be made very easily .
MS hollow rod is taken as the material.





3.5.4 concept 4

This concept tell about a cart that mounted on the wearable stand. It has good display for panipuri and good storage for other Ingradience and vessels.



Chapter 4

Summery

4.1 Discussion and future possibilities

All the four concepts has their on unique features and they mainly derived according to materilas. In future more things to be done to make these concepts more relavent.

- Strucural analysis
- Ergonomic analysis
- Material explorations
- Prototype making and user study
-

4.2 Conclusion

proposed stand cart models are designed by considering target users, materials, anthropometry and so on. hence it is concluded that designed models have solved the problems related with panipuri standcart and project is done.

4.3 literature review

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