

A Simple Storage Chair

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Abstract

This research was handled to investigate the suitability of blockboard as a material for chair production using a simple design. The chair was produced, and the data were collected via survey form. The data were analyzed using SPSS based on the questionnaire that had been distributed to 150 correspondents. 80% of the correspondents give the positive response to the material used, simple design, friendly user, suitability of the product to everyone and marketable of the product. The idea of producing a simple storage chair will meet customer satisfaction and acceptable in market demand.

Keywords: simple, storage, blockboard

1. INTRODUCTION

Furniture are built to provide a place for work and to support most of the human activities. It is also contributing to the ambiance and style of the interior space. Furniture enables people with the equipment and items that complement and complete interior space of their house (Postell, 2012). It can be build using metal, plastic, and wood.

For civilians, preserve space is necessary, especially with the progressively dense populace of metropolitan areas. It becomes very hard to endemic several pieces of furniture due to a deficiency of room, so users are looking for furnishing that has multi purposes uses. With the changing of function in furniture to meet interest and needs, users could live happily and comfortable using compact household items. The storage furniture like a nightstand often makes use doors, drawers, shelves and locks to contain and organize smaller object such as cloth, books, magazines, and household goods. Examples of furniture are the tables, beds, dressers, cupboard and chairs (Hylton, 2008).

2. METHODOLOGY

2.1 Preparation of raw materials

The material used for the product is blockboard. Blockboard is an engineered wooden board that consists of a core of softwood blocks (strips) lined edge to edge and sandwiched between layers of hardwood veneer on either side. There are a lot advantages that made blockboard as a suitable material for this product. Blockboard is lightweight, easy to handle, and good working properties made it widely used in manufacturing furniture. Blockboard also has a good dimensional

stability even it is unprotected to humidity, and exhibit high resistance to warping or twisting (Phadke, 2013).

2.2 Manufacturing Process

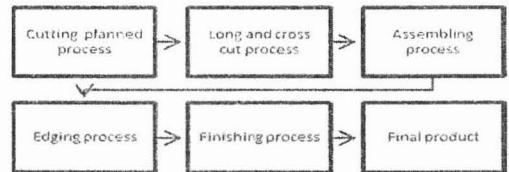


Figure 1: Manufacturing process

2.2.1 Cutting planned process

All parts need to be measured before being cut and filled in the route sheet form. The route sheet function is to get the actual size of each piece that used the product. The strategic plan must be implied to prevent waste of materials.

2.2.3 Long and cross cut process

Cutting process of the material involved long cut and cross cut. The both of these cut is to make sure that the component will be cut meet the accuracy according to their size and dimensions. The need of this process is to ensure all parts are in a square shape. The machine that been used in this process is 'Tilting Arbor Panel saw'.

2.2.4 Assembling process

Assembling process is a process where all the components of furniture are joined together using driller and immersed screw. At this stage, the activity includes drilling a hole by using a driller. The angle of the driller must be 90° to make sure the hole will be straight to help

screwing process quickly. The screw is put into a hole by using a drill. The screw body must be entering the hole more than the wood surface to make sure it is beauty and safe to the user.

2.2.5 Edging process

Edging is a process of covering the edge of blockboard to make sure it becomes more spruce. The edging process are using PVC adhesive because of its advantages. It is harmless, suitable for all material, easy application, and water resistant. Thus, it can give protection to edge surface from water vapor that can damage the board. Besides, the product is also more attractive when covered with side.

2.2.6 Finishing process

Finishing is a process of refining or protecting furniture surface. Finishing also improves the appearance of the furniture. The process of finishing involve in this project is cleaning all the dirty of pencil's mark that been marked during the dimension process. The excessive of glue being removed to make sure the surface will look smooth, clean and beautiful.

2.2.7 Final product

Figure 2 show the final product, a simple storage chair that has been completely produced.

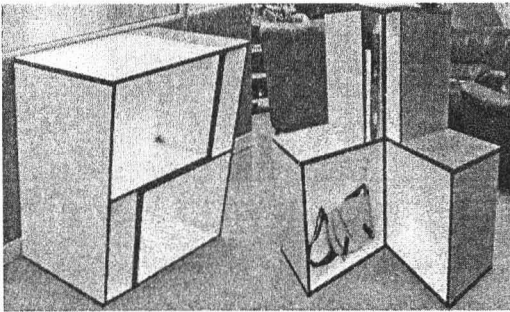


Figure 2: Final product

2.3 Survey (Data collection)

The results were obtained from the questionnaire survey and then were analyzed using SPSS. Total correspondents were about 150 people consist of UiTM Pahang staff, students and outsiders. Each question given was ranked from 1 to 5, as shown in Table 1.

Table 1: Ranking for each question

No. of Rank	Rank
1	Poor
2	Moderate
3	Good
4	Very good
5	Excellent

3. RESULTS AND DISCUSSIONS

Table 2: Analysis of variance on the effect of gender, age and profession on a simple storage chair

Variables	DF (n-1)	Material	Design	Ergonomic	Color	Multifunction	Space	Portability	Commercialization	Price
Gender	1	0.833 ^a	0.120 ^{ab}	0.001 ^a	0.669 ^a	0.972 ^{ab}	0.559 ^a	0.794 ^a	0.423 ^a	0.269 ^a
Age	2	0.001 ^{ab}	0.475 ^{ab}	0.041 ^a	0.163 ^{ab}	0.746 ^a	0.552 ^a	0.972 ^{ab}	0.391 ^{ab}	0.566 ^a
Profession	2	0.826 ^a	0.283 ^a	0.390 ^a	0.410 ^a	0.598 ^a	0.854 ^a	0.692 ^a	0.327 ^{ab}	0.496 ^a

Note: ns-not significant where p>0.05

^a Significant where p<0.05

^{ab} Highly significant where p<0.01

3.1 Effect of material, design, ergonomic, color, multifunction, space, portability, commercialization and price on gender, age and profession

*Same letters indicates significant while different letters indicates not significant

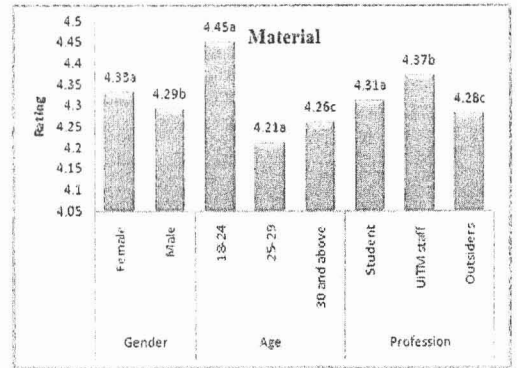


Figure 3: Material used is suitable (blockboard)

Figure 3 shows that the correspondents have evaluated the suitability of the materials that been used in this product. From the graph, majority of them agreed with the used of blockboard. It might be because blockboard is light weight and suitable for product that used a simple design. Most of the UiTM staff rated higher than student and outsiders that they agreed with the uses of blockboard for this product. Some of the characteristics are blockboard is easy to be handle, low in price and more attractive. It might be because staffs, including lecturers are more exposed to blockboard compared to students and outsiders who may be less knowledgeable about this material.

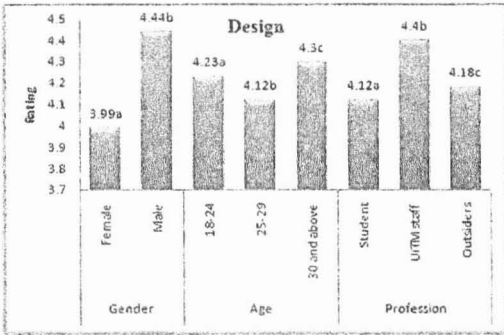


Figure 4: Effect of design on simplicity and suitability of the product

Based on figure 4, the means from the evaluation by correspondents are range 3.99 to 4.44. This shows that the design of the product is suitable for all phase of gender, age and profession. It is because the product design is simple, modern and suitable for everyone. It can be a design that suit with the millennium life style. The highest rated rank is from male correspondents that show them all more prefer to this design. Female correspondents rated lower, this is possibly because they don't really understand by the meaning of simple design itself.

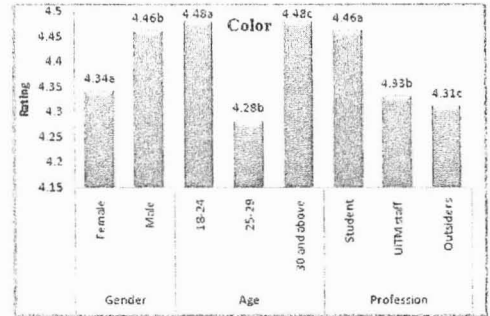


Figure 6: Effect of design on color used

Based on figure 6, most of the correspondents accept the use of bright color on the product. The range of means is from 4.28 to 4.48 agreed the use of bright color is might be because it can enhance the view of the house, office room and other place. It might be also the color applied to the product is their favorite color. The correspondents that age 25-29 show the lowest rate of mean. It is possibly because the correspondents at this age maybe prefer more on dark color. Between male and female, male rated is higher than female. This is maybe because female like to have a soft color such as pale pink or pale blue.

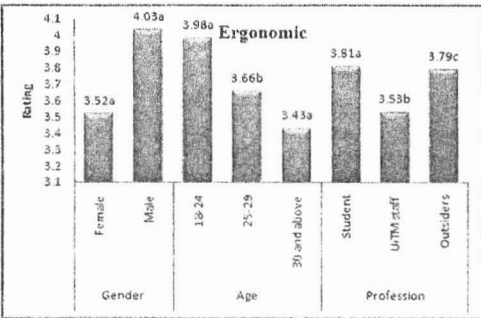


Figure 5: Effect of design on ergonomic concept

By referring to figure 5, it shows a difference between the phase of gender, age and position on ergonomic concept applied on this product. There is a significant different based on gender and age. The bar shows that female correspondent rated low than male because they possibly prefer for more comfort ability such as cushion and more relaxing back rest. It is same to the correspondent with age 30 and above who less agreed for the ergonomic concept used than the younger age. As the age of them increase, they might prefer for a better seat so that they could seat and relax for long time doing activities such as reading a book. For profession, there is no significant different between them. From the data evaluated, most of them are agreed for the concept of ergonomic. It is might be because they just agree as the product let them sit straight suitable for reading book that prevent them from sleepy. In contrast, UiTM staff rated lower than students and outsiders. It is maybe their knowledge is better and

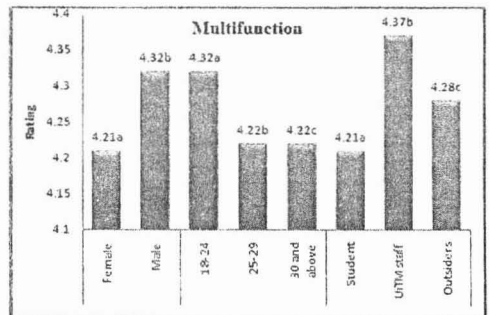


Figure 7: The adjustable and multipurpose uses of the product

Based on figure 7, UiTM staff correspondents agreed more in adjustable and multipurpose uses compared to students and outsiders. This is possibly because UiTM staff required this product more than students and outsider that already have their own basic furniture at their hostel and house. This product mainly constructed for living room, study room and office room that need to be adjust by manual handling. Refer to the graph; the rate of correspondents who age 18-24 is highest for multipurpose uses. Maybe because they think that they were strong to handle this product easily compared to older age. Male and female correspondents have a little different perception regarding on multipurpose use of this product in which the mean value of male is higher than

female. It is might be because female correspondent don't like to adjust the chair, they just like to sit on the chair without transform the chair into another shape.

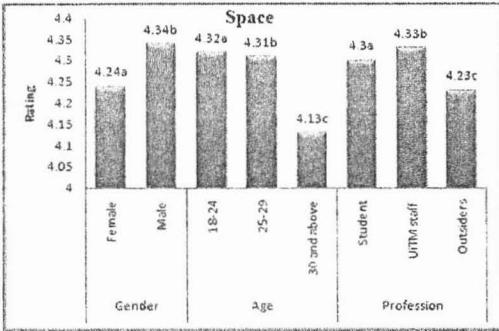


Figure 8: Suitability of the product for small living space

Figure 8 shows that the average of the mean is from 4.13 to 4.34. So, it can be said that this product is suitable for small living space. Due to the narrow space in an apartments, offices or houses, multifunctional furniture achieves high demand among the public. The advantages of this product other than chair as a seat, it is also can be used for books storage and other things. Furniture that has more than one function is currently requested in the market. So, this is why the product is acceptable by most of the correspondents.

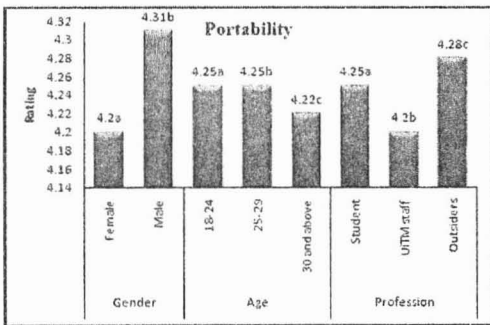


Figure 9: The portability and handling of the product

Based on the graph of figure 9, it shows that the aspect of portability and easy to handle is accepted by most correspondents. Male correspondent rate the highest mean compared to female correspondent. It can be a reason that male correspondent just need a little bit of energy to move and change product's position, while female correspondents need more energy as normal that male is stronger than female. On profession, UiTM staff shows the lowest mean regarding the portability and easiness of handling. It might be because staff already found the product that more lighter and have a wheel so that it would be more easy to handle.

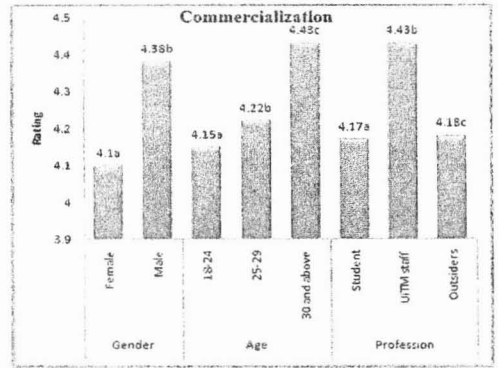


Figure 10: The commercialization of the product

The graph of figure 10 shows that, most of the correspondents agreed if this product will be commercialized in the market. All the factors whether range of gender, age and position are accepting the entire characteristics of the product design. The possibility of the product could be commercialized in the market is because the product like this do not much introduce in the marketplace. A simple design used can be also the factor that attract correspondents to rate this product can be commercialized in the market.

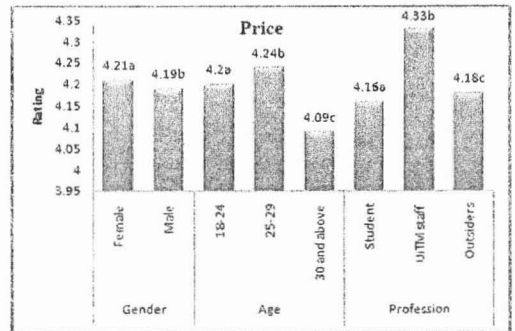


Figure 11: The price of the product

Figure 11 shows that the price of a simple storage chair RM200 is accepted by most correspondents. Most of them in gender, age and profession do accept the price for this product to be commercialized in the market based on the entire characteristics of this product has. UiTM staff shows the highest rate for this price of product. It might be because they know well that the price is suitable based on the cost of making this product.

4. CONCLUSIONS AND RECOMMENDATIONS

This study showed the feedback from the correspondents is positive for a simple storage chair. As conclusion, this simple storage chair is applicable to all ranges of gender, age and profession. Most of the correspondents accept this product because of its simple design and its multifunctional characteristic. This product is mainly used for seating but at the same time it provides user a place for storing things. The use of bright color is very important as it give impact to user preference. Thus, with the simple

design, colorful, multifunctional characteristic, it can be commercialized in a market.

From the survey that has been conducted, there are various recommendations about the product that can be taken. Firstly, the product should be produce in variety of color because it is crucial in targeting market segment. By adding more color it could impress buyers because people do have their own predilection color. Secondly, the corner of seats should be blunt because it is sharp and it is dangerous to kids. Lastly, it is also recommended to design for more ergonomic so that people will have a comfort during seating and reading the books.

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