

Coffee Table with Sliding Book Case

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Abstract

This research was conducted to assess feedback from users about the importance of multifunctional furniture. The design as the product is the major for this study. After the coffee table has produced the survey forms were distributed to 96 respondents randomly. Then, the SPSS was applied to analyze the data obtained. Most of the respondents give positive feedback to the product design on material used, suitability of the product design, friendly user and will function. Overall, the coffee table is well accepted as multifunction furniture.

Keywords: multifunction furniture

1. INTRODUCTION

Furniture is created to make people lives easier and more comfortable. Over the years, the furniture had expanded itself into varieties of other products as a table that could keep storage inside it. As a new era evolves, people have different needs, new trends and new environment. People want better things in life, and in order to satisfy their needs, producers and designers try to come up with things. The development taking and an increase of population, many infrastructures are built small making spaces limited (Urmann, 2005).

Furniture as part of the room setting apparatus, to facilitate these needs becomes crucial. In order that it can satisfy every individual's needs, furniture should easily be adaptive to specific use and room. However, although there are lots of design books that promote good furniture design, but very few of them that discuss how furniture designs are empirically studied to meet such specific needs of students for their accommodation. (Wardono, 2012).

Furniture configuration is profoundly established in the human condition. It is a social science that has a place the humanities, connected craftsmanship that upon numerous configuration fields and a substantial reality that depends upon a working learning of materials and creation methods. It is a comprehensive and sweeping field of study (Jim, 2007).

2. MATERIALS AND METHODS

2.1 Blockboard

Blockboard is made up from an extensive number of wood strips stuck together with a utilized overlay of veneers all over. These strips may be dependent upon around 25mm wide. The strips are set edge to edge and

sandwiched between veneers of hardwood. The sandwich is then stuck under a high weight. Typically, blockboard is unsuitable for outside utilization in light of the fact that the pastes utilized are inner part sticks. Blockboard may be utilized to make racks, entryways, paneling and allotments. The sizes of blockboard sold in sheets of 2440 x 1220 mm and are typically 30mm thick. Blockboard is acquainted with minimized the loss of wood and afterward to boost the productivity of timber use. (Lye, 1971)

2.2 Final product preparation

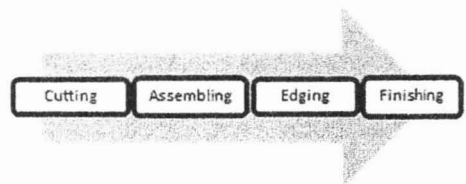


Figure 1: Manufacturing processes of final product

2.2.1 Cutting

The main material to produce a coffee table is Blockboard. Firstly, blockboard must be marked by a pencil to avoid the wasting the blockboard. Then, blockboard is cut through a long court process by using a panel saw. Processing need to do is be careful and should follow the exact measurements of each part on the table. After the long cut process, the blockboard is cut through a cross-cut process by using a table saw. This process can be handled by one worker. Then, make sure each part must be square because the error in measurement can affect the product.

2.2.2 Assemble Process

In assembling process, drills are used to make holes for screws. The drill should be in a state of 90 degrees during the drilling conducted to get a nice hole. Whole area should be not too big and not too small, as to affect the strength of screws. After completing the hole, screw ready to be installed on each side.

2.2.3 Edging process

The edging process is very important to each furniture product that used a panel product such as laminated particleboard, Medium-Density Fiberboard (MDF), Chipboard, Wood Plastic Composite (WPC) and other panel product. This is because; edging process is using PVC edge banding that give protection to edge from warping. Besides, the product will become more attractive.

3. RESULTS AND DISCUSSIONS

This result was analyzed from the questionnaire that been distributed to 96 correspondences. The questionnaire contains of eight questions, and each question has been ranked as follows:

Table 1: Ranking for each question

NO. OF RANK	DESCRIPTION
1	Poor
2	Moderate
3	Good
4	Very good
5	Excellent

3.1 Statistical Analysis

Coffee table with sliding book case was analyzed based on various characteristics by the students, staff UiTM and outsider at different phase of gender, age and profession. The various characteristics available in the questionnaire such as material design, ergonomic, space, function, portable, suitability commercialized and reasonable price.

Table 2 shows the effects of gender, age and profession on the product rating (evaluation) which have been obtained from the survey (questionnaires). From statically, analysis showed the variance on the effect of gender, age and profession. Overall, they are not significant, but they are only 3 significant different below 0.05 between a group of gender in terms of function, forage in terms of ergonomics, and for the profession in terms of ergonomic.

Table 2: Analysis of variance of the effect of gender, age and profession on the coffee table with sliding book case

SOV	Material	Design	Ergonomic	Space	Function	Portable	Commercialized	Price
Gender	0.263 ^{ns}	0.231 ^{ns}	0.509 ^{ns}	0.542 ^{ns}	0.012 [*]	0.744 ^{ns}	0.610 ^{ns}	0.240 ^{ns}
Age	0.256 ^{ns}	0.631 ^{ns}	0.029 [*]	0.478 ^{ns}	0.275 ^{ns}	0.156 ^{ns}	0.112 ^{ns}	0.258 ^{ns}
Profession	0.234 ^{ns}	0.148 ^{ns}	0.016 [*]	0.808 ^{ns}	0.618 ^{ns}	0.138 ^{ns}	0.317 ^{ns}	0.093 ^{ns}

Note: ns- not significant where $p > 0.05$

(*) – significant where $p < 0.05$

(**) – significant where $p < 0.01$

3.2 DISCUSSIONS

3.2.1 Suitability of Material Used (Blockboard)

According to the Figure 2, it showed that the correspondent rated the suitability of material being used between 3.3 to 4.1 by all correspondents. There is no significant difference between gender, age and profession about the suitability of the material used that is blockboard. Male correspondents prefer the material used more than female correspondents, especially correspondents at age phase 24 – 30 years old. Most of the correspondences agreed by rating in the range of very good (4) for the raw material used. In terms of knowledge, the age range 24 to 30 years were exposed with furniture made from blockboard. It might be because the blockboard is not only inexpensive but also can be used to substitute the solid wood and suitable for making coffee table.

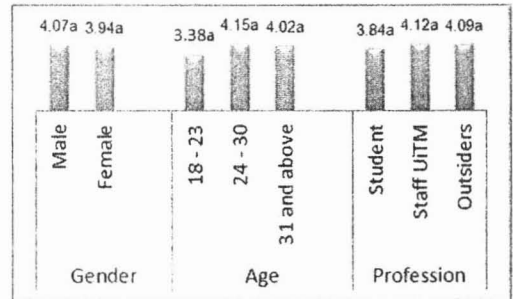


Figure 2: Effect of material that used to produce the product

3.2.2 Design of Product

Referring to figure 3, the design being chosen was rated ranging from 3.95 to 4.47 by all correspondents. It proved that the design of this product was suitable for all gender, age and profession. From the gender, male is higher than the female rate is 4.3 and for the age phase, 24 – 30 are the higher group like this design. The reason is because the design being applied was simple and modern. Normally, male interests simple furniture design is simple, does not like complicated design compare the female.

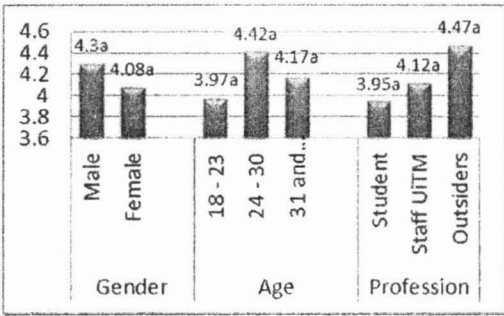


Figure 3: Effect of design product

3.2.3 Design Based on Ergonomics Concept

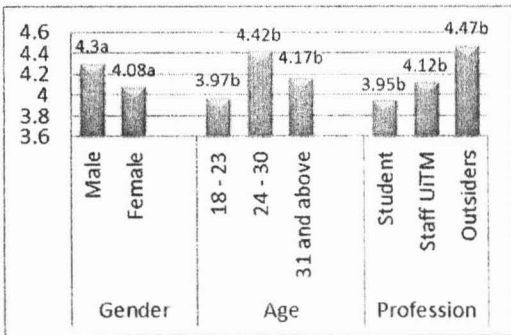


Figure 4: Effect on ergonomic concepts

According to Figure 4, the correspondents rated the application of ergonomic concept for the product was between 3.95 until 4.47. The students give the lower rating, with 3.95 (between good and very good), if compared to be other. This might be because they are not really understood about the ergonomic concept. Outsiders gave the highest rating because they really understand about the ergonomic concept. This product was designed and produced with suitable measurement and working interaction.

3.2.4 Suitability for Small Living Space

Referring to Figure 5, there is no significant different between age, gender and profession. All correspondences showed the positive responded by rating very well and excellent. Space saving furniture is much needed nowadays because the people live in a small area. For students, they need to save space in their home because most of them live in rented houses, which are small. As for staff UiTM, those who are living with families, they for sure do not want their houses to become smaller after they installed the furniture.

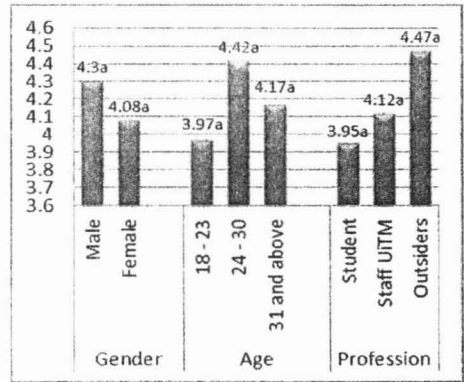


Figure 5: Effects of suitability of product to a small living room on a multipurpose coffee table

3.2.5 Adjustability and Multipurpose Usage

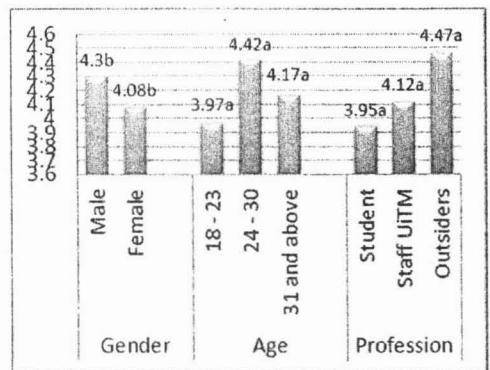


Figure 6: Effect of adjustable and multipurpose on a coffee table

According to figure 6, it shows the correspondents rated the application of multipurpose to the product between 3.9 until 4.4. Most of the correspondences knew how to use this coffee table with a rating range of very good (range 4). This table is not can be used as the living room, it also can be used to put magazines, books, decorative objects and other small object. This coffee table is complete with bookcase and by using these people did not need to buy placed in stores the book.

3.2.6 Easy Handling and Portability

Figure 7 shows the rating that was given by correspondence on portability and handling. From the graph all correspondences from different age, gender, profession and position marked, higher rating is in the range of excellent (5). The lowest rates in at age 18 - 23 and studied with mean 3.97 and 3.95 it nearly range very well (4). The roller at the bottom on the table made this furniture product portable.

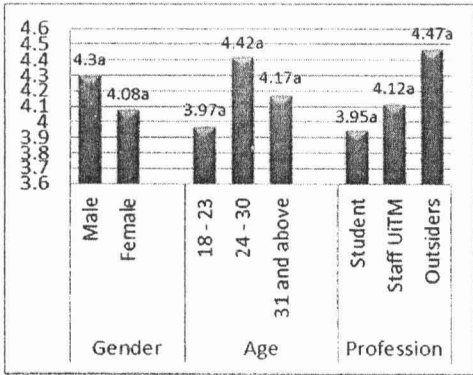


Figure 7: Effect of handling and portability on a coffee table

3.2.7 Marketability of Product

Figure 8 shows rating given based on marketable question. Most of the correspondence agreed with good that the product can be commercialized except for the female who is 4.1 (very good). This product can be marketed but must adjust some parts is necessary to make it more suitable and cheaper.

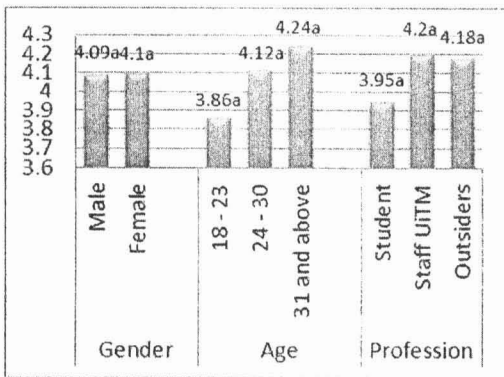


Figure 8: Effect on marketability of product on the coffee table

4. CONCLUSION AND RECOMMENDATION

From this study, it was reported that this coffee table with sliding bookcase has been accepted by the majority of correspondents, based on the result from the survey (questionnaire). Almost all correspondents gave positive feedback about this product regarding its material, design, ergonomic, space, function, portable, commercialized and price. There are some recommendations to add the color of the coffee table. It will make the coffee table more attractive and beautiful. In other words, this product is suitable to be commercialized. For the future production of furniture product, it was recommended a regular maintenance process to all machines at UiTM workshop. There was some machine breakdowns occurred during the production process. Maintenance process should be done more frequently in promising smooth production process and getting better quality. It is also recommended

for the UiTM workshop to have been edging banding machine, as it is one of the most important machines needed in furniture production. An edging banding process that's been done manually is not really neat.

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