Users Satisfaction Towards the UiTM Pahang Workshop Layout

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Abstract

The workshop in UiTM Pahang gives opportunity to students to practice and have hands-on learning experience with machines. This study is intended to provide insights about the satisfactions of users towards the UiTM Pahang workshop layout. The case study involves 3 different groups of users which are the students, staffs and users outside the University. By having a well developed layout, it is then the users can make use of the floor efficiently and effectively. Based on the results of the survey, most users were satisfied with the current workshop layout. However, many agree on the workshop need improvements in order to be ready for future usage, especially in achieving the aspiration of UiTM being a world class University.

Keywords: *Layout, workshop, UiTM Cawangan Pahang*

INTRODUCTION

As a strategy towards excellence, UiTM Pahang adopted Wood Technology and Plantation Management as its core programs to be developed and enhanced through education, research and knowledge generation. This aspiration could be realized with existing facilities, including forest reserve and plantation, which are being upgraded continuously as the needs arise. UiTM Pahang will also strengthen its University-industry relations to ensure that its effort leads to successful achievement of UiTM's objective of producing human resource and encouraging scholarship as a contribution towards nation building (pahang.uitm.edu.my/index.php/management, 2011).

Other than having forest reserve and plantation, UiTM Pahang also has a Workshop or also known as the Wood Factory inside its campus for their students. The workshop in UiTM Pahang gives opportunity to students to practice and have hands-on learning experience with machines. The workshop contains numerous machines and tools from processes such as cutting to finishing. It is to ensure the students are adapted with the furniture industry. Besides the students, there are also other users who make use of this facility. These people include UiTM staffs, researchers, students from other institutes, etc.

The increase of users all year round, made the workshop a busy facility. In addition, with a new program introduced in UiTM Pahang, which is the Bachelor Science in Furniture Technology (HONS), the factory now is a concern for potentially having overcrowded and overused machines. This will expose the students to danger if no safety or improvement is done. The current workshop *(Bengkel Pemesinan Perabot)*

layout is unorganized with new machines coming in and old machines getting unused. The factory deserves a new layout so that it can be used efficiently and effectively. Prior to that, the lack of safety also can be seen inside the factory. Students are not trained to be ready for any accidents or emergency. This is really important since the ratio of the students and staffs are insufficient, especially with the increasing number of students. This case study is expected to solve the problems of the workshop layout based on the satisfactory levels of the users. By having a well developed layout, it is then the users can make use of the floor efficiently and effectively.

METHODOLOGY

Questionnaire

In this case study, a questionnaire was devised to elicit answers from respondents regarding the satisfaction of users towards the UiTM Pahang Workshop Layout. The questionnaire has four sections, which the first one is the personal details section to elicit information on the profile of the respondent, and the second section was meant to elicit information on the respondents safety awareness, the third section is about their layout satisfactory and the last section is on questions regarding the staffs. In order to evaluate satisfactory of users, the usage of ratings in the questionnaire is chosen. By having ratings, we can see how much users are satisfied with the workshop. The differences of the questionnaire made are the ratings options. Normally ratings will have numbers between 1 until 5, but for this case study, the ratings are only up to 4. This is done because most people often will choose the middle number which is 3 or any middle number which is given. Matell and Jacoby (1972) demonstrated that as the number of scale steps is increased, respondents' use of the mid-point category decreases (Garland, 1991).

Samples

The information of this case study has been obtained from a survey conducted on the satisfaction of users towards the UiTM Pahang workshop layout. A questionnaire was distributed to 3 groups of people. These were UiTM students, UiTM staffs and users from outside the University.

(a) UiTM students

This group of samples is primarily from the students of Bachelor in Science (HONS) (Furniture Technology). They were chosen to be the samples because they are the most common users of the workshop and also most of them have been using the workshop for more than a year. In order to make sure the students has been to the workshop, questionnaires were passed at the workshop. A total of 30 students were asked to fill the questionnaires.

(b) UiTM staffs

The group of UiTM staffs only includes the people who has been or worked in the workshop. These people include lecturers and staffs of the Wood Industry program.

(c) Users from outside the University

People in this group include users who have or have been to the workshop. These people are not from the UiTM Pahang campus, and also rarely use the workshop. The Masters Degrees and PHD's students from UiTM Shah Alam are some of the examples of the group.

Evaluation of data

The questionnaires for this research were evaluated using the Excel Program where data are keyed in and the figures are analyzed. Each of the questionnaires questions were evaluated to know the reasoning's of the figures. Also, the 3 samples which were students, staffs and outsiders were compared so that the significant differences between them could be seen.

RESULTS AND DISCUSSIONS

Respondents' Profile

Users Main Reason of Using the Workshop

The questionnaire was distributed to students, staffs and users outside the University. Based on the figure 1, students and staffs used the workshop as a part to fulfill their coursework. As for the outsiders, 90% of them used the Workshop for research purpose, and another 10% for their personal use. From this, it can be seen that users mainly use the workshop as a place to conduct studies, not for mass furniture production purposes.

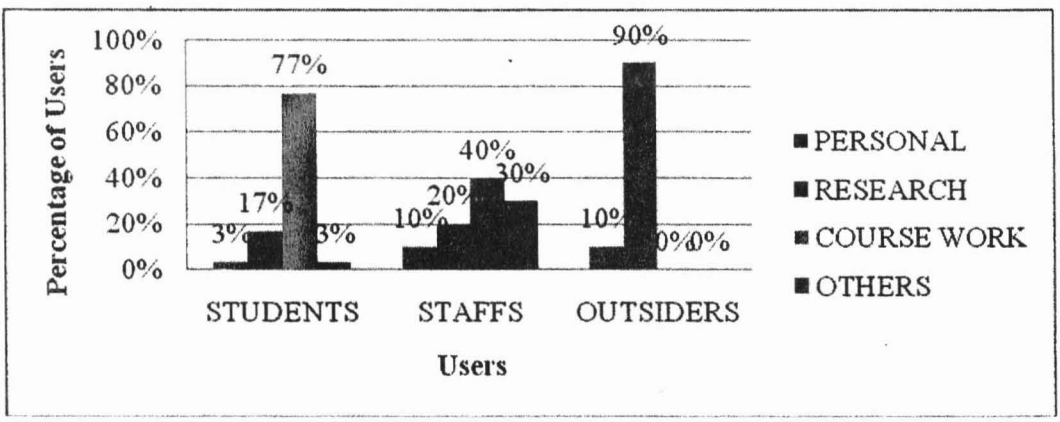

Figure 1: Users Main Reason of Using the Workshop

Usage of Users in a Month in the Workshop

Based on the figure 2, most of the users use the workshop 4-6 times in a month. This may be the cause of the common workshop class for students are once in a week, hence 4 times in a month. From the figure 2 also, it can assume that most of the users are average users. Their experience on conducting the machineries may be limited.

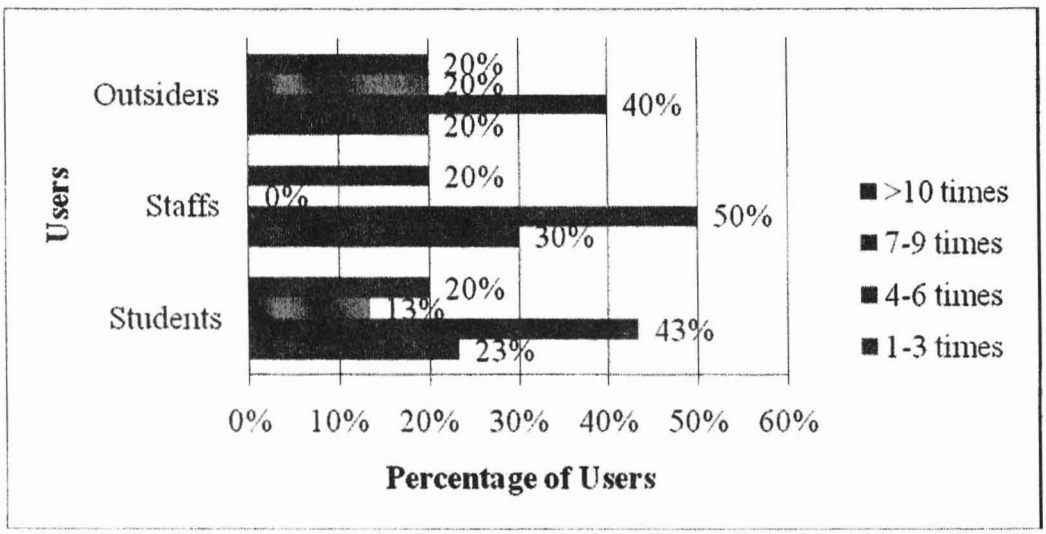

Figure 2: Users usage on the Workshop in a Month

Problems often encountered in the Workshop

Figure 3 shows each user have different problems encountered in the workshop. For students, 43% of them say the problem of the workshop was there were not enough machines. This is probably stated due to the fact when students use the workshop; they come in with the whole class, which each class has an average of 20 people. This means they have to share with their entire classmates when doing their project. As for the staffs, the highest percentage users encountered the problem was the unsystematic layout. The layout of the workshop is arranged not according to processes. In process layout, similar manufacturing processes (cutting, drilling, wiring, etc.) are located together to improve utilization. (Mark Allington, 2006) In the workshop, the thicknesser should be closer to the radial arm saw since both of the machines are related. Other than that, other similar machines should be located in groups rather than scattered far apart. The outsiders however, have problems with themselves, which is 50% of them are not good with machines. Being an outsider and not used with operating the machines, it is not surprisingly they are less good with the machines in the workshop.

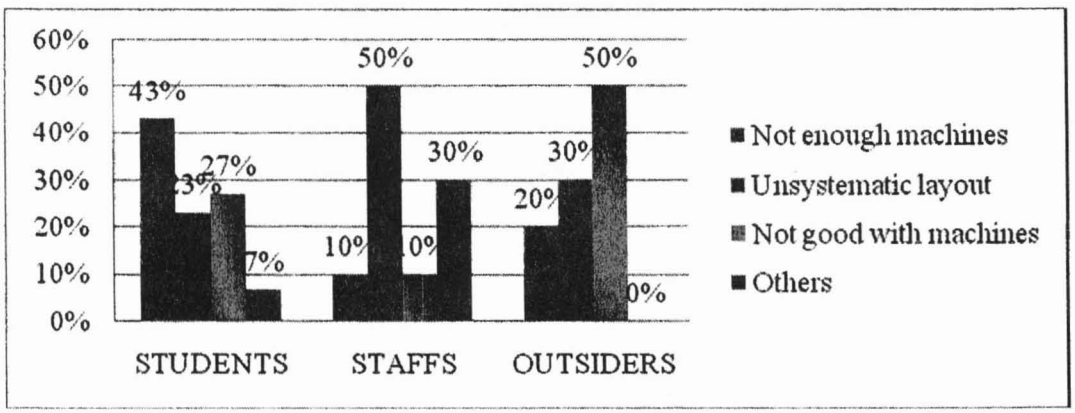

Figure 3: Problems often encountered in the workshop

Most used machine

Figure 4 shows the most used machines in the workshop is the Radial Arm Saw. Radial Arm Saw is among the most versatile woodworking machines in the wood shop. They can be used to cross-cut, rip, cut compound miters, cut dadoes and rabbets and more (Chris Baylor, 2007). The Radial Arm Saw machine which is used to cut lengthy is probably famous due to the process of making furniture itself. In order to prepare the wood to make furniture, it has to undergo processes such as wood preparation, and cutting it to length is the first step. This may be also the cause of why the Radial Arm Saw is the most used machine.

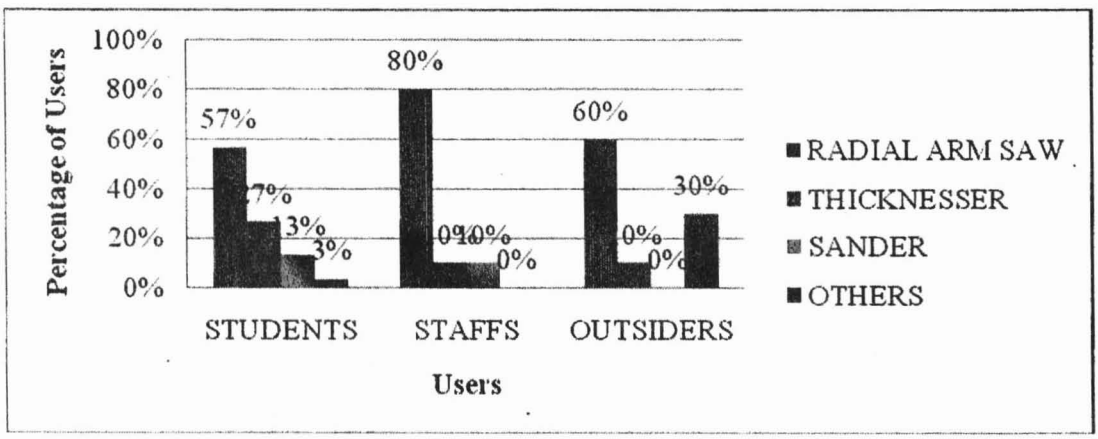

Figure 4: Most Used Machine in the Workshop

Safety

Users Knowledge on Safety In The Workshop

For Figure 5, most students have knowledge on the safety in the workshop. This may due to the teachings provided to them in class about the safety. It could also be seen that most outsiders were less satisfied with their knowledge on safety. This might be due to their lack of experience on working in the workshop; therefore they are not given full knowledge on the safety regulations in a workshop. As for staffs, they are satisfied with their knowledge on safety. Only 2% of difference between satisfied with very satisfied for the staff.

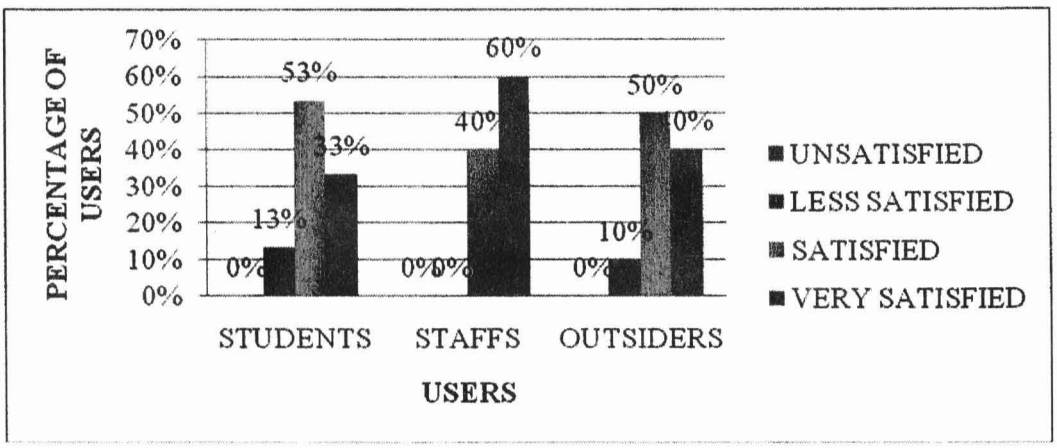

Figure 5: Users Knowledge on Safety in the Workshop

Users Satisfactions towards the Safety Signboard

The figure 6 shows about the users' satisfaction on the safety signboards around the workshop area. For students and outsiders, both hit 60% on their satisfied level on the apparent on the safety signboards. They were not very satisfied with it may due to the less interest of them towards the safety signboards. As for the staffs, they were very satisfied with their apparent towards the safety signboards. This may due to the awareness of them since they are the one who takes care of the workshop.

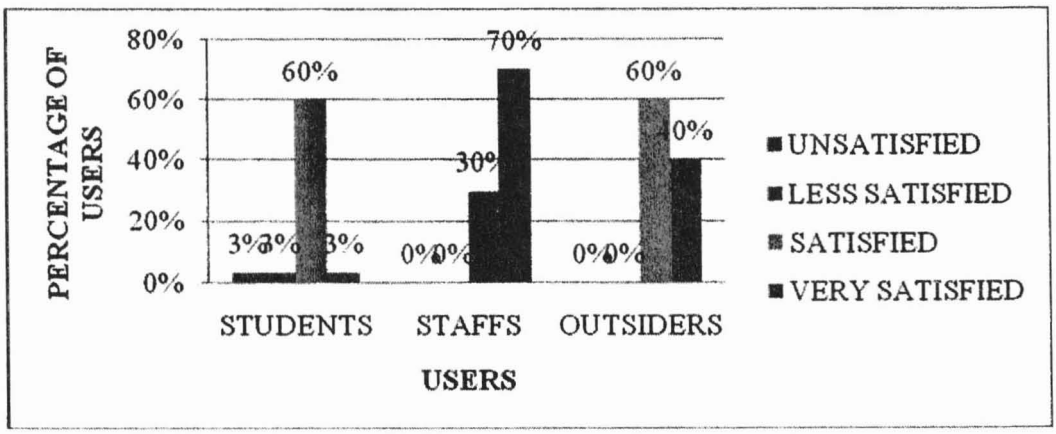

Figure 6: Users Apparent on the Safety Signboards

Satisfaction of the Monitoring of the Workshop

Based on the figure 7, it can be seen that all of the users were satisfied with the monitoring of the workshop. This comes to show that the staffs are doing their job on monitoring the activities in the workshop. However, 27% of students were less satisfied. This may due to the insufficient workers in the workshop. An evaluation on whether the staffs are sufficient enough in the workshop has to be done because 20% of staffs were also less satisfied with the monitoring of the workshop.

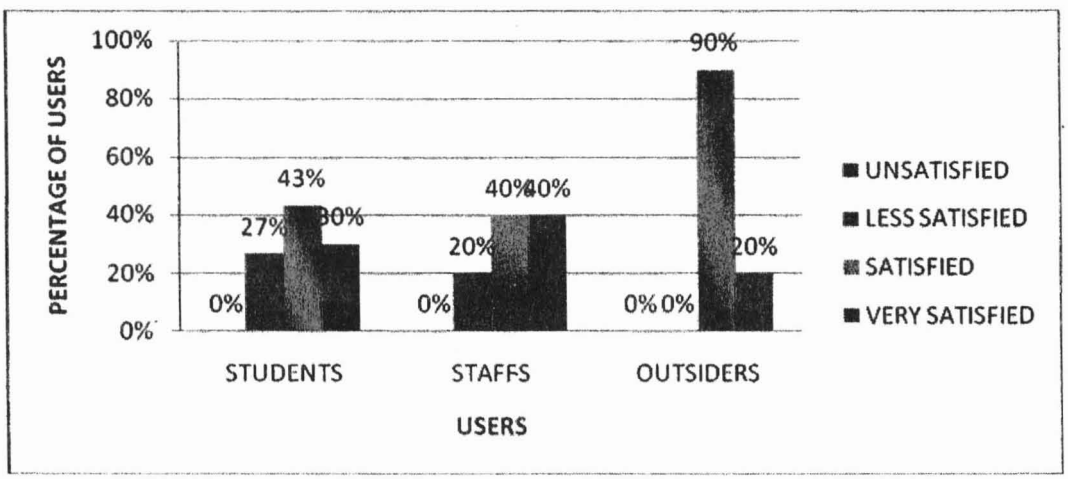

Figure 7: Users Satisfaction on the Monitoring of the Workshop

Users Clothing Follows the Safety Rules

The Figure 8 indicates all users were satisfied with their clothing in the workshop. There was an equivalent result of students between satisfied and very satisfied, with

47% each. This comes to show the students follow the safety regulations in terms of clothing. Besides that, the safety attire is also a compulsory in the workshop. Without safety attire on, they could not enter the workshop. This makes students bound to follow the safety clothing regulations.

As for the staffs, half of them were satisfied and half more were very satisfied. This result is expected since staffs are the one who are responsible in the workshop and also to remind the students to follow the safety rules. For the outsiders, they showed a small difference between satisfied and very satisfied. However, most of them were satisfied with their safety attire. This may due to the preparation they brought from home before working in the workshop.

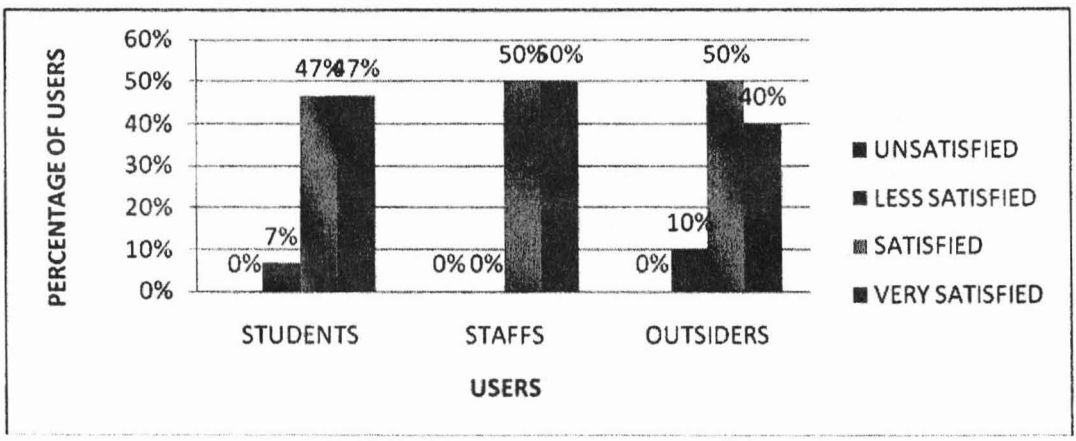

Figure 8: Users Clothing Follows the Safety Rules

Users Satisfaction towards the Safety in the Workshop

The Figure 9 shows most of the users were satisfied with the safety on the workshop. The outsiders showed 60% of them were satisfied, and 40% of them were very satisfied. None of them answered less satisfied in the survey. However, for the students, 23% of them were less satisfied with the safeties in the workshop. This comes to show there are still glitches that have to be patched up in order for the workshop to be up to par in terms of safety. The staffs also had responses on less satisfied which 20% of them agreed on. This is another proof on the workshop needs an improvement in the safety department.

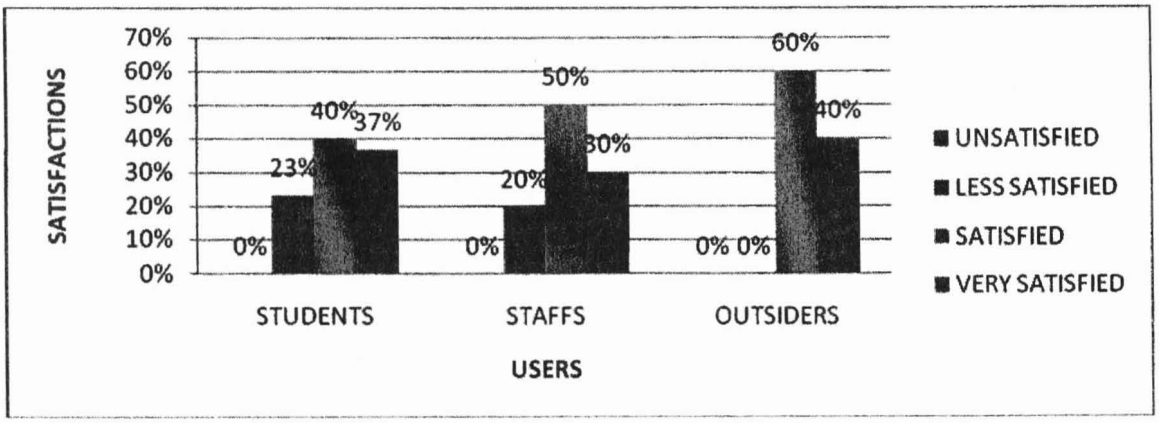

Figure 9: Users Satisfaction towards the Safety in the Workshop

LAYOUT

Users Satisfaction on the Workshop Space in terms of Comfort and Ergonomics

The Figure 10 shows students were satisfied with the space, and 17% of them were less satisfied. There were a small number of users who were very unsatisfied with the space. They may have experience problems in the workshop since they did not agree on the ergonomics. As for the staffs, none were unsatisfied, however 30% of them showed less satisfied. Staffs are experienced users of the workshop; therefore they are more aware of the space ergonomics. This is why some were less satisfied with the space. Outsiders are users who use the workshop in a certain period of time only; they are not the usual users of the workshop. Therefore, it can assume that they accept the workshop as it is, that is why most of them were very satisfied with the space of the workshop. However, from the graph, it can be seen that most users were very satisfied with the ergonomics and comfort in the workshop's space.

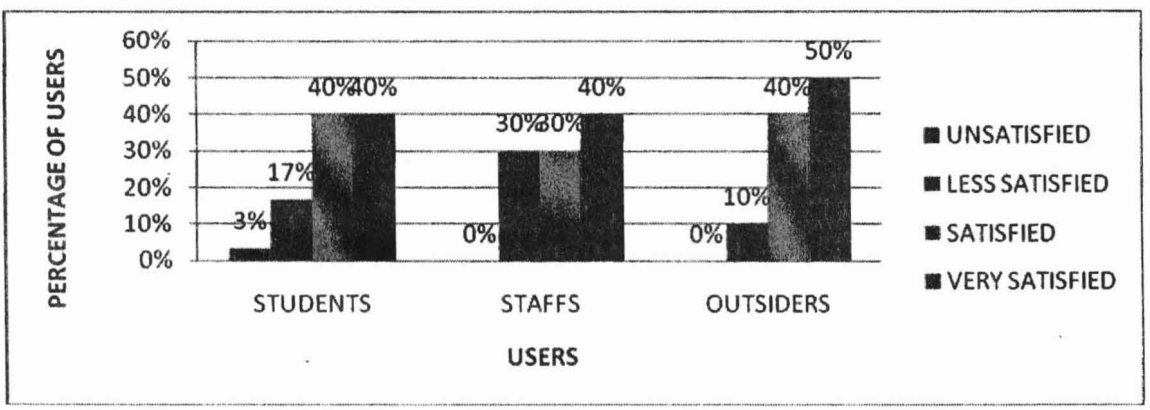

Figure 10: Users Satisfaction on the Workshop Space in terms of Comfort and Ergonomics

Users Satisfaction on the Shape and Work Productivity of the Layout

Based on the Figure 11, 57% of students were satisfied with the shape of the layout and there were no interference while working with the layout. 7% of students were unsatisfied; showing there is a problem with the layout of the workshop and needs to be resulted for better. As for the staffs and outsiders, most of them were satisfied with the workshop's layout shape. However, not many users were very satisfied; this comes to show that the layout shape needs to be better so that users will be fully satisfied with it.

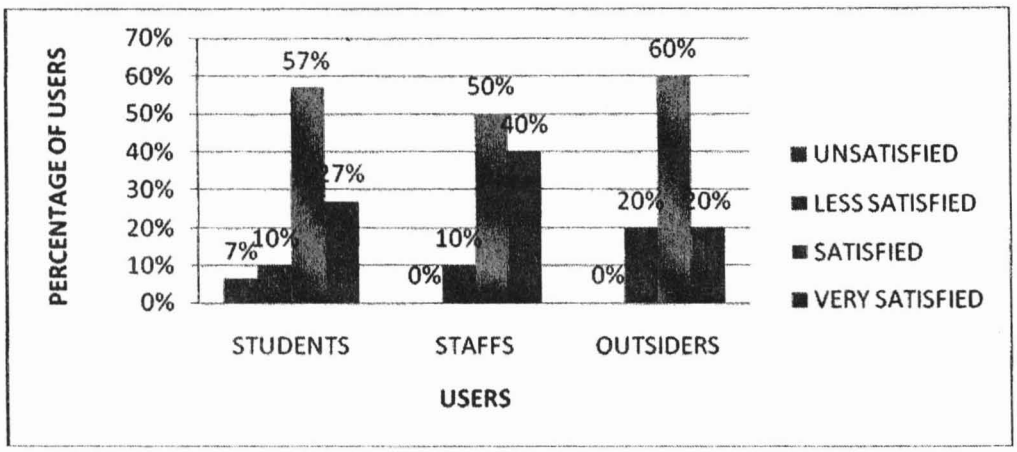

Figure 11: Layout is in Good Shape and No Interference on Work Productivity

Users Satisfaction on the Machines Serviced Schedule

In Figure 12, there are different views of users on the machines service schedule. For the students, most of them were less satisfied. Based on the survey, a user commented that some machines cannot be used and some machines which use blades were dull. This may be the cause of why 47% of students say they were less satisfied with the service schedule and only 20% were very satisfied. As for the staffs, 40% of them were satisfied with the machines serviced schedule. This may be the fact that they understand what goes on while the servicing is in process. However, there were also staffs who were less satisfied with it, with 30%. Staffs who were less satisfied may be due to the working hours or not enough helping hand. The outsiders showed 80% of them were satisfied. The cause is probably because outsiders do not use the workshop regularly. Therefore they might not encounter any severe problems regarding to the machines servicing schedule.

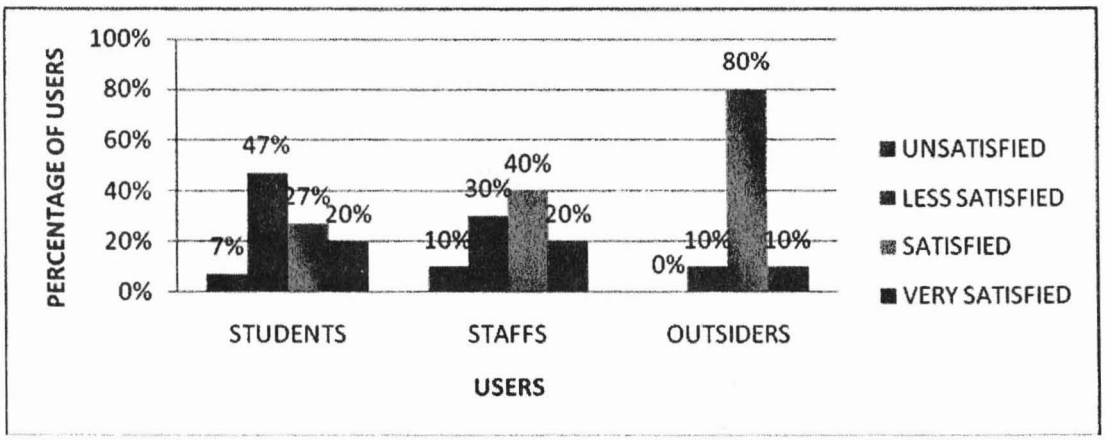

Figure 12: Machines are serviced on Schedule

Users Satisfaction towards the Workshop Layout

This Figure 13 shows users satisfaction towards the workshop layout. All of the users were satisfied with it; however there are some who disagree. 27% of students say they were less satisfied and 3% were unsatisfied. From this, it can be seen that the layout needs improvement so that the common users of the workshop works comfortably in it. As for the staffs, 50% were satisfied with the layout and 30% were very satisfied. There were also users who were less satisfied which were 20% of them. Meaning the layout is not up to their standards. The outsiders however showed a high number of users on satisfied with 90%. Nevertheless, only 10% says they were very satisfied. This comes to show the workshop has to improve itself to get better in terms of layout.

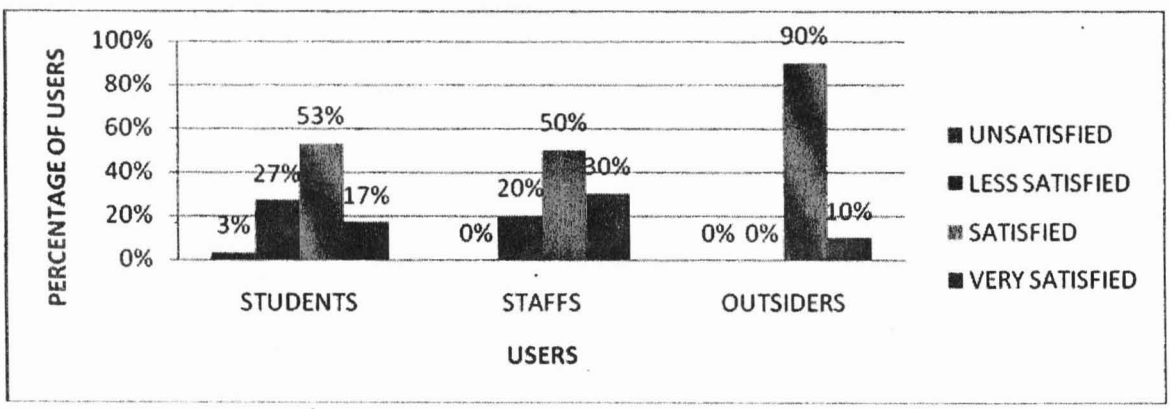

Figure 13: Users Satisfaction towards the Workshop Layout

Staff

Users Satisfaction on the Helpfulness of Staffs

Figure 14 shows the outsiders had a high percentage of users very satisfied with the helpfulness of staffs. However, only 47% of students were very satisfied. From this it can be assume that the outsiders were treated more helpfully by staffs since they are not from around UiTM. Also, the outsiders may have more helpings by staff since they do not know their way around the workshop, and as for students, they are already familiar with the place, so less help is needed. As for staffs, there were 60% of them were very satisfied. In this data, the staffs were to implicit on whether they think they are helpful enough in the workshop, and based on the figure, 30% were satisfied and only 10% were unsatisfied with themselves or towards their co-workers. This may be due to the less understanding between students and staffs. In knowing the staffs' helpfulness, the staff department can take this as a challenge to improve their performance in terms of helpfulness.

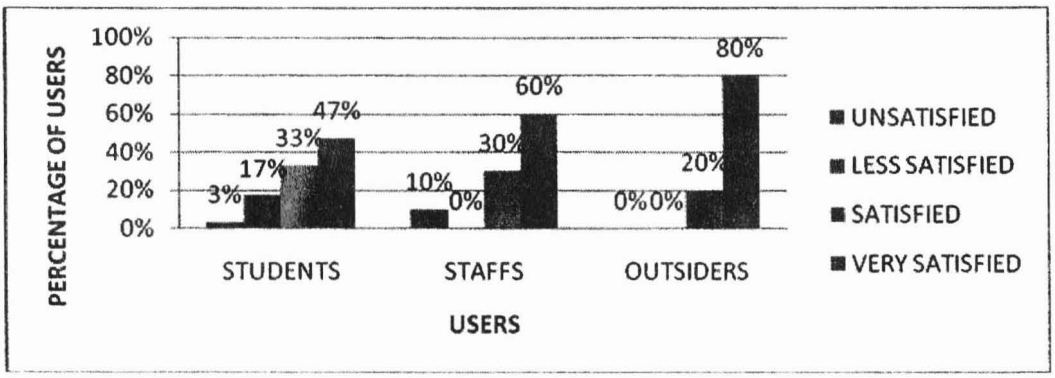

Figure 14: Helpfulness of Staffs

Users Satisfaction on the Skill and Experience of Staffs in the Workshop

All of the users were very satisfied with the skills and experience of the staffs in the workshop based on the figure 15. The outsiders showed the same percentage of users for satisfied and very satisfied, with 50% each. This shows that the outsiders are pleased with the workers of the workshop. However, for the staffs, there were 10% who were less satisfied with the skills and experience of staffs. The staffs mentioned in the survey were lecturers and the workshop staff itself, this means, 10% of them were unsatisfied with their own skills and experience. From this it can be seen that some of the staffs would like to go further training in order to sharpen their skills and experience.

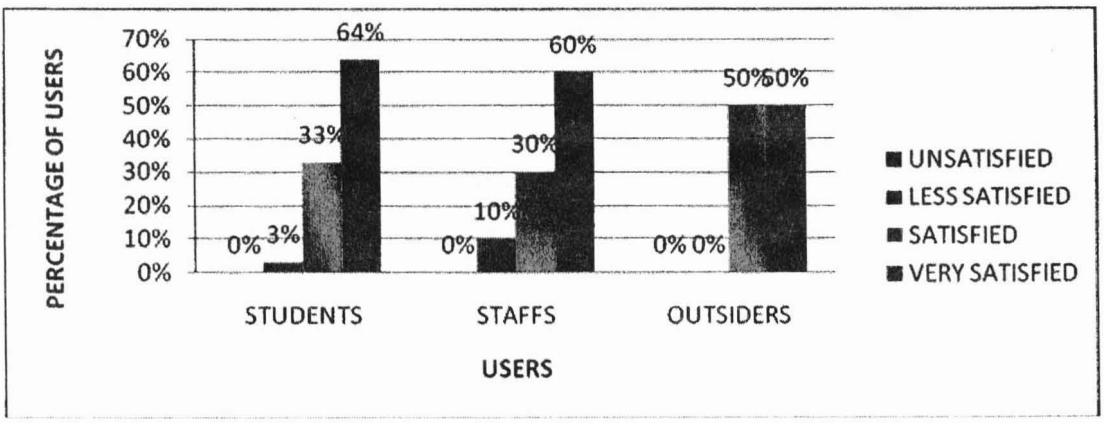

Figure 15: Skills and Experience of Staffs

Users Satisfaction on the Staffs Fulfill Needs of Users

The Figure 16 shows 47% of students were very satisfied with staffs fulfilling their needs. Some examples of needs are staff's presence, ability and helpfulness in the workshop. In knowing that all users were very satisfied with staffs' fulfilling the needs of users, it can be assumed that the staffs are great. This is important to know in order to

However 20% of staffs were less satisfied with them fulfilling the need of users. In the comment section of the questionnaire it is written that staffs needed to be increased in order to cater all of the users of the workshop, and by doing so will help to ease the various jobs of the staffs in the workshop to handle.

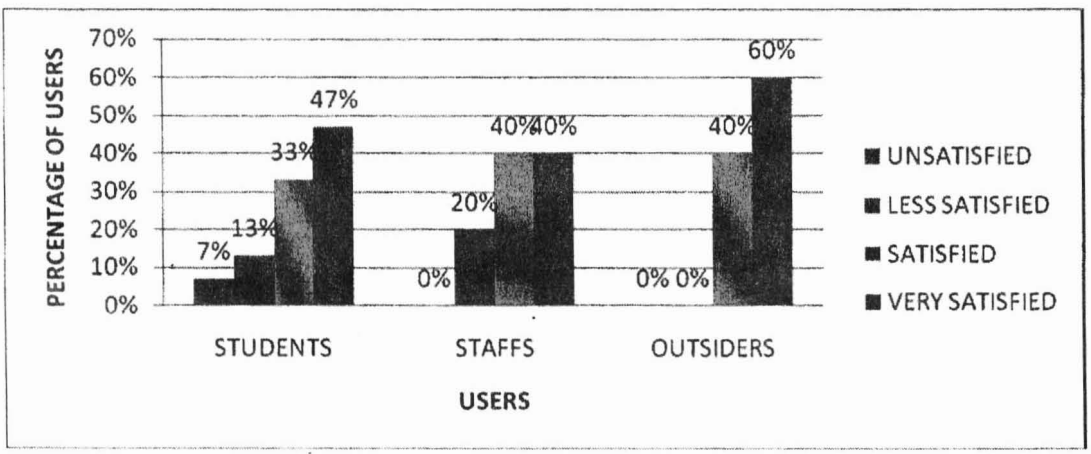

Figure 16: Staffs Fulfill Needs of Users

CONCLUSIONS

Users satisfactory on the layout

In this study, each sample which were the students, staffs and outsiders, had different views regarding the workshop. This comes to show many variables have to be concerned in carrying this study. Based on the result, most outsiders were satisfied with the workshop's layout with a staggering 90% (Figure 4.13); this is very good from an outsiders' point of view, when quality assessment is done. Although, the common users which were the students and staffs, only 50% of them answered satisfied; which comes to show the workshop layout has to have improvements .Overall, the users were satisfied with the current workshop layout since the results gathered were mainly either satisfied or very satisfied. However in the comment section, there were also many agreements on the workshop needs to better itself.

Improving a better UiTM Pahang workshop layout

To improve the workshop layout, the type of layout has to be known firstly. From the results, the main reason of the usage of the workshop is for studies, therefore, the workshop can be classified as a process-oriented layout. Process layouts are facility configurations in which operations of a similar nature or function are grouped together. From this, in order to have an orderly layout workshop, the UiTM Pahang workshop has to group their machines according to its similarities in functions. Once the workshop layout is planned out, the data in this study should also be used for the improvements of the workshop. As such in Figure 4.4, it can be seen which machines should be added to the workshop. In adding additional machines, the layout has to be spaced out accordingly to have a proportioned workshop layout. From this case study, it can be concluded that the satisfaction of users is important to be known before improving a layout.

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