

A Survey On Campus Sustainability Assessment Framework (CSAF) In Malaysia

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ABSTRACT

Campus Sustainability Assessment Framework (CSAF) is a famous Canadian tool, which assess the level of sustainability of universities. However, the compatibility of this tool for other countries such as Malaysia has always been a matter of a question. This study has conducted a questionnaire survey on community indicators of CSAF at four Malaysia research universities namely UM, UPM, UKM and USM. The result indicates that four categories of 1. Involvement and cohesion, 2. Diversity, and 3. Services and 4. Programmes serve as the main rubrics of sustainability in terms of community.

Keywords: *Campus Sustainability Assessment Framework; Malaysia universities.*

INTRODUCTION

Campus Sustainability Assessment Framework (CSAF) is a famous Canadian tool which gauges the level of sustainability of Canadian universities [1, 2]. This CSAF which is developed at Royal Road University in Canada under the supervision of Professor Ann Dale has gained an international reputation in the realm of Sustainable Campus [3]. However, its compatibility as an imported tool for other countries is under question [4]. This study provides the details of the questionnaire survey, as well as its result and analyses, which were conducted at four Malaysia research universities. Those four research universities namely University of Malaya, Universiti Putra Malaysia, University Sains Malaysia and Universiti Kebangsaan Malaysia were taken into the survey. These four universities are regarded as the most important universities in Malaysia [5].

MATERIALS AND METHOD

The modified indicators of Campus Sustainability Assessment framework (CSAF) were converted into a set of questionnaire, as a tool of conducting a written survey, to grasp the opinions of Malaysian experts. The purpose of the survey was to find out to what extent these indicators function in the context of Malaysian universities. Since the questionnaires are very cost effective compared to the face-to-face interviews, particularly for studies involving large sample sizes and large geographic areas, this particular technique was therefore employed [6, 7].

In designing the questionnaire, consultation with the research team as a research methodology technique was employed, and the traditional CSAF was modified based on Malaysian currency, measurement units, and local definitions. Both the formats were shown to 12 different respondents, and they were asked to rate its simplicity and comprehensiveness. Consequently, 11 out of 12 respondents confirmed

that the new format was rather easy to understand, while only one stated that he did not have any comment.

There are nine steps involved in designing a questionnaire [8]. First, the goals of the questionnaire were set to identify the relevant factors that contribute to Sustainable Campus. Second, it attempted to shorten the questionnaire as much as possible. Third, the suggestions from the 12 experts involved in designing the questionnaire were used. Fourth, a plan for the statistical analysis was formulated during the designing stage by consulting a statistician. Fifth, the questionnaire was printed on beautiful and colourful paper back to gain the respondents' interest. Sixth, the questionnaire was given a title to make it more meaningful. Seventh, a well-written cover letter included to further attract the participations and gain the respondents' trust. Eighth, a basic and accurate language was used. Finally, every question was used to cover only one dimension.

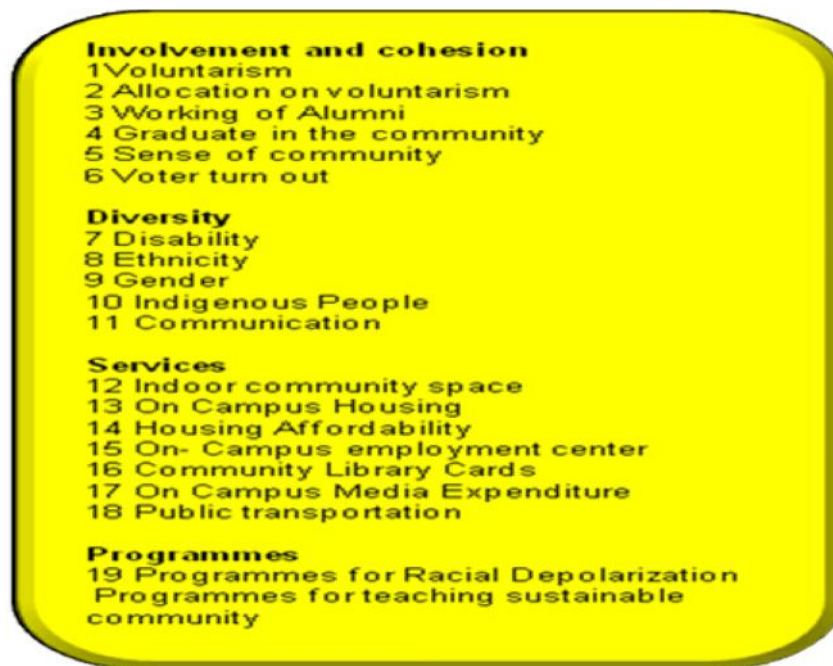


Figure 1: Work Promise of survey on CSAF

Sample Size (N) Calculation

This study utilized stratum sampling where sampling formula was used to calculate the sample size or " n " [9]. A group of 14 institutes and faculties were selected as the population of the study (See table 1).

Table 1 Population of Study

No	Name of Stratus	Total Academic Staffs $\sum p_i$
1	Faculty of Arts and Social Sciences in UM	119
2	Faculty of Education in UM	72
3	Faculty of Economics and Administration in UM	74
4	The Faculty of Economics and Business in UKM	164
5	Faculty of Social Sciences and Humanities in UKM	275
6	The Institute for Environment and Development in UKM	23
7	Institute of Ethnic Studies UKM	10
8	Institute of Malay World and Civilization in UKM	20
9	School of Humanities in USM	82
10	School of educational study in USM	70
11	School of social science in USM	54
12	Faculty of Human Ecology in UPM	66
13	Faculty of Educational Study in UPM	103
14	Faculty of Environmental Study in UPM	23

$$N = \sum p_i \quad \rightarrow \quad N = 119 + 72 + 74 + 164 + 275 + 23 + 10 + 20 + 82 + 70 + 54 + 66 + 103 + 23 = 1155$$

$e = \sqrt{(P(1-P)/n)}$ or Sampling error = square root of $[(p)(1-p)/\text{proposed sample size}]$.

$$e = \sqrt{(P(1-P)/n)} \quad ; \quad P = 50\% \text{ and } e = 3.5\%$$

$$3.5\% = \sqrt{(50\%(1-50\%)/n)} \quad n = 204$$

RESULTS AND ANALYSIS

The questionnaires were fed to SPSS, and the descriptive statistics were employed to analyze and interpret the data. The following part covers the questionnaire results.

Student Voluntarism

For "student's voluntarism," the analysis of 289 experts' opinions reveal that the mean is 4.63 (with the maximum being five, and the minimum is four), indicating that the majority of Malaysia HEI experts believe that student voluntarism can contribute to the sustainability of the campus community. Referring to the frequency of statistics, it was observed that 62.6% of the experts strongly agreed, while 37.4% others agreed that student voluntarism could contribute to campus community.

Table 2 Student Voluntarism (Example of statistics)

	N	Minimum	Maximum	Mean	Std. Deviation
Student Voluntarism can contribute to campus community sustainability	289	4.00	5.00	4.6263	.485

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	agree	108	37.4	37.4	37.4
	strongly agree	181	62.6	62.6	100.0

Staff Voluntarism

As for “staff Voluntarism”, the analysis of 289 experts’ opinions indicates that the mean is 4.35, suggesting the majority of Malaysia HEI experts believe that staff voluntarism can contribute to sustainability of the campus community. Besides, 51.6% of the respondents agreed, while 41.9% of them strongly agreed that it could contribute to sustainability of the campus community. Only 6.6 % were neutral.

Academician Voluntarism

Treating the 289 experts’ opinions shows that the mean for academician voluntarism is 4.05, indicating that the majority of Malaysia HEI experts believe that “academician’ voluntarism” can contribute to the sustainability of the campus. Besides, 54.3 % of the respondents agreed, and 25.3 % of them strongly agreed, while only 20.4 % were neutral towards the fact that it could contribute to campus community sustainability.

Student Fund Allocation On Voluntarism

For the “student fund allocation on voluntarism,” the analysis of 289 experts’ opinions produced a mean of 4.4, indicating that the majority of Malaysia HEI experts believe that this subject could contribute to campus community sustainability. Besides, 45% of the respondents strongly agreed, followed by 50.2 % who agreed, and only 4.2% were neutral about the fact that the allocation of fund to students’ voluntary activities could contribute to campus community sustainability

Staff Fund Allocation On Voluntarism

The statistics indicates that the mean for the “staff fund allocation on voluntarism” is 4.12, suggesting that the majority of Malaysia HEI experts believe that this subject can contribute to campus community sustainability. Besides, 63.7% of the respondents strongly agreed, followed by 24.2 % of them who agreed and 12.1% others were neutral about the contribution of allocating fund for the staff’s voluntary activities to campus community sustainability.

Academician Fund Allocation On Voluntarism

Meanwhile, the statistics imparts that the mean for the academician fund allocation on voluntarism is 4.18, indicating that the majority of Malaysia HEI experts believe that this subject can contribute to campus community sustainability. In more specific, 30.8% of the respondents strongly agreed and 56.1 % others agreed with the statement, and only 13.1% were neutral that the allocation of fund for academicians’ voluntary activities could contribute to the campus community sustainability.

Alumni Working For The University

The statistics shows that the mean for the Alumni working for university is 4.0, suggesting that the majority of Malaysia HEI experts believe that this subject can contribute to campus community sustainability. Besides, 43.3% and 29.1% of the respondents strongly agreed and agreed, respectively, whereas 12.5% others were

neutral and 15.2 % disagreed that the Alumni working for the university could contribute to campus community sustainability.

Graduates In The Community

The statistical analysis also reveals that the mean for keeping local (university neighborhood) graduates in their own community is 2.65, suggesting that the majority of Malaysia HEI experts do not believe that this subject can contribute to campus community sustainability. This is proven by the fact that only 1% and 48.4% of the respondents strongly disagreed and disagreed, whereas 37.4% others were neutral, and only 10.7 % and 2.4 % agreed and strongly agreed that keeping local (university neighborhood) graduates could contribute to campus community sustainability.

Sense of Community among Students

The statistics indicated that the mean for having sense of community in campus among the students was 4.41, suggesting the fact that the majority of Malaysia HEI experts believe that this subject could contribute to campus community sustainability. In fact, 41.9% and 57.1 % of the respondents strongly agreed and agreed, as compared to only 1% who was neutral about the fact that students having a sense of community in the campus could contribute to campus community sustainability.

Staff's Sense of Community

The analysis of the experts' opinions showed that the mean for having sense of community in campus among the staff members was 4.1, indicating that the majority of Malaysia HEI experts believe that this subject could contribute to campus community sustainability. In particular, 17.6% of the respondents indicated their strong agreement, and 72.7 % others agreed, as compared to only 9.7% others who were neutral about the fact that staff's sense of community in campus could contribute to campus community sustainability.

Academicians' Sense of Community

The analysis of the experts' opinions indicated that the mean for academicians' sense of community in campus was 4.13, revealing the fact that the majority of Malaysian HEI experts believe that this subject could contribute to campus community sustainability. For this particular statement, 32.9% of the respondents stated their strong agreement, and 46.7 % agreed to it, whereas only 20.4% were neutral that the academicians' sense of community in campus could contribute to campus community sustainability.

Student Voter Turnout

The analysis of 289 experts' opinions showed that the mean for students' participation in campus elections was 4.57, suggesting that the majority of Malaysian HEI experts believe that this element could contribute to campus community sustainability. In specific, 60.6% of the respondents strongly agreed, while 36.3 % others agreed and only 3.1% of them were neutral about the statement that students' participations in campus elections could contribute to campus community sustainability.

Staff Voter Turnout

The statistical analysis also indicated that the mean for the staff's participations in campus elections was 3.82, revealing that many of the Malaysia HEI experts believe that this element could lead to campus community sustainability. Of all the respondents, 20.4% stated their strong agreement, followed by 48.1 % agreed, 24.1% were neutral, compared to only 6.6% who disagreed that staff's participations in campus elections could contribute to campus community sustainability.

Academician Voter Turnout

As for the academicians' participations in campus elections, the analysis of the experts' opinions indicated that the mean for this particular factor was 3.6, suggesting that many of the Malaysian HEI experts believe that this element could help achieve campus community sustainability. For this, 26.6% of the respondents were found to strongly agree, followed by 16.6 % who agreed, 47.4% being neutral and 9.3% disagreed with the statement that academicians' participation in campus elections, such as the election of University Corporation, could to campus community sustainability.

Admitting Students with Physical Disabilities

The analysis of 289 experts' opinions also confirmed that the mean for admitting physically disabled students was 4.67, suggesting that the majority of Malaysian HEI experts believe that this particular factor could contribute to campus community sustainability. Interestingly, 67.1% of the respondents strongly agreed, and 32.9 % agreed that admitting physically disabled students into university could contribute to campus community sustainability.

Admitting Students with Mental Disability

The analysis of 289 experts' opinions stated that the mean of admitting mentally disabled students was 4.39, suggesting that the majority of Malaysian HEI experts believe that this factor could contribute to campus community sustainability. Apparently, 38.8% of the respondents strongly agreed and 61.2% agreed that admitting mentally disabled students could contribute to campus community sustainability.

Employing Staff with Physical Disabilities

The mean for employing physically-disabled staff was found to be 4.35. This finding showed that majority of Malaysian HEI experts believe that this subject could contribute to campus community sustainability. Obviously, 41.9% of the respondents strongly agreed and 51.6 % agreed to the statement. Only 6.6% of them were neutral that employing physically-disabled staff could help to achieve campus community sustainability.

Employing Staff with Mental Disability

The mean for "employing mentally-disabled staff" was shown to be 4.13, indicating that majority of Malaysian HEI experts believe that this element could contribute to campus community sustainability. It was found that 22.5% and 68.2% of the respondents strongly agreed and agreed to the statement, whereas only 9.3% were neutral about the contribution of employing mentally disabled staff to campus community sustainability.

Employing Academicians with Physical Disabilities

For the factor "employing physically-disabled academicians," the mean was found to be 3.57, suggesting that the majority of Malaysian HEI experts believe that doing this could contribute to campus community sustainability. In particular, 28% and 40% of the

respondents strongly agreed and agreed to the statement, 5.5 % others were neutral, 12.8% disagreed and 13.1 % strongly disagreed that employing physically-disabled academicians could help to obtain campus community sustainability.

Employing Academicians with Mental Disability

The statistics showed that the mean for employing mentally-disabled academicians was 2.9, indicating that the majority of Malaysian HEI experts do not believe that doing this could help to contribute to campus community sustainability. It was found that 14.5% and 21.82% of the respondents strongly agreed and agreed to the statement, respectively; meanwhile, 19.4% others were neutral about, and 27.3% and 17% of them disagreed and strongly disagreed that employing mentally-disabled academicians could contribute to campus community sustainability.

Admission of Students from Minor Ethnic Groups

The statistics indicates that providing equal opportunities for students of minority groups/ethnicity is considered as one of the influential factor in the community aspect of SHE. Moreover, the analysis of 289 experts' opinions showed that admitting students of minor ethnicities was 4.23, revealing that the majority of Malaysian HIE experts believe that doing this could contribute to campus community sustainability. In particular, 26% and 70.9% of the respondents were found to have strongly agreed, and only 3.1% were neutral about it while admitting that students from minor ethnic groups could contribute to campus community sustainability.

Employing Staff from Minor Ethnic Groups

The mean for employing staff from minor ethnic groups was stated as 3.9, illustrating that many Malaysian HEI experts believe that this factor could contribute to campus community sustainability. For this particular factor, 10.4% and 74% of the respondents strongly agreed and agreed to the statement, whereas 15.6% others were neutral about employing staff from minor ethnic groups could lead to campus community sustainability.

Employing Academicians from Minor Ethnic Groups

The mean for employing academicians from minor ethnic groups was 4.0, indicating that many Malaysian HEI experts believe that doing this could contribute to campus community sustainability. This was clearly shown by the percentages of the experts who indicated their agreement to the statement (15.2% of the respondents strongly agreed and 70.2 % agreed, as compared to 14.5% others who were neutral) that employing academicians from minor ethnic groups could contribute to campus community sustainability.

Admitting Female Students

The mean gathered for admitting female students based on the regional population was 3.93, suggesting that many Malaysia HEI experts believe that this could contribute to campus community sustainability. 11.1% and 71.6% of the respondents strongly agreed and agreed to the statement, respectively, whereas, only 17.3% others were neutral that female student admittance based on the regional population could lead to campus community sustainability.

Employing Female Staff

The statistics revealed that the mean for employing female staff based on the regional population was 3.96, indicating that many Malaysian HEI experts believe that doing so could contribute to campus community sustainability. In particular, 13.5% of the respondents strongly agreed to the statement, and this was followed by 69.2% of those of who agreed, whereas only 17.3% were neutral about the fact that employing female staff based on the regional population could contribute to campus community sustainability.

Employing Female Academicians

The mean indicated for employing female academicians based on the regional population was 3.94. This finding suggests that many Malaysian HEI experts believe that their recruitment could contribute to campus community sustainability. For this, 13.5% of the respondents indicated their strong agreement, followed by 67.1 % of those of agreed, and only 19.4% were neutral that employing female academicians based on the regional population could lead to campus community sustainability.

Admitting Male Students

The mean for admitting male students based on the regional population was 3.84, revealing that many Malaysian HEI experts believe that doing this could actually contribute to campus community sustainability. It is important to note that 9.3% of the respondents were found to have strongly agreed, followed by 68.9% of those agreed and 21.8% others who were neutral with the statement that admitting male students based on the regional population could lead to campus community sustainability.

Employing Male Staff

As for employing male staffs based on the regional population, the analysis of 289 experts' opinions showed that the mean was 3.83, illustrating that many Malaysian HEI experts believe that this could also contribute to campus community sustainability. In more specific, 4.5% of the respondents strongly agreed, whereas 73.7% others agreed compared to 21.8% who were neutral with the statement that employing male staff based on the regional population could help attain campus community sustainability .

Employing Male Academicians

As for the statement on employing male academicians based on the regional population, the mean was found to be 4.1, based on the analysis of 289 experts' opinions. This also means that many Malaysian HEI experts are convinced that doing so could contribute to campus community sustainability. In particular, 24.6% and 59.5% of the respondents strongly agreed and agreed to the statement. Meanwhile, 15.9% of them were neutral towards the statement indicating that employing male academicians based on the regional population could lead to campus community sustainability.

Admitting Indigenous Students

The analysis on 289 experts' opinions reveals that the mean for admitting indigenous students is 4.69, showing that majority of Malaysian HEI experts believe that doing so could lead to campus community sustainability. For this, it was found that 68.9% of the respondents strongly agreed, followed by 3.11% others who agreed that admitting indigenous students could contribute to campus community sustainability

Employing Staff of Indigenous Groups

The mean for employing staff of indigenous groups was found to be 4.75, indicating that majority of Malaysian HEI experts believe that this could contribute to campus community sustainability. In particular, 75.1% of the respondents strongly agreed to the statement, and this was followed by 25.1% others who agreed that employing indigenous staff could lead to campus community sustainability

Employing Academicians from Indigenous Groups

The mean for employing academicians of indigenous groups was found to be 4.63, proving that majority of Malaysia HEI experts believe that doing this could contribute to campus community sustainability. Of the total number, 63.3% of the respondents strongly agreed and 36.7% others agreed that employing academicians of indigenous groups could lead to campus community sustainability.

Students' Competency in Communication

The mean for students' competency in communication was 4.46, suggesting that the majority of Malaysian HEI experts believe that this subject could contribute to campus community sustainability. It was found that 56.7% and 32.9% of the respondents strongly agreed and agreed to the statement, whereas 10.4 % others were neutral about students' competency in communication contributes to campus community sustainability.

Official Language for Students

The mean for official language for the statement, "official language for students should be considered as a medium of communication" is 3.1, indicating that it was rather doubtful if students' official language proficiency was to be used as an indicator of SHE . This was shown by merely 17.4% of the respondents who strongly agreed to the statement, followed by 19.1% others who agreed with it, as compared to 20.5% who were neutral, 42% disagreed and 1% strongly disagreed that official language for students should be considered as a medium of communication.

English language for Students

The mean for the item, "English language should be considered as a medium of communication for students" was 4.47, revealing that the majority of experts believe that for student, English language proficiency should be taken as an indicator of SHE. The respondents strongly agreed (54.3%) to this item, while others agreed (40.8%), neutral (2.8%), and only 2.1% disagreed that English language should be considered as a medium of communication for students.

Staff's Competency in Communication

The statistics reveals that the mean for the staff competency in communication was 4.25. This indicated that the majority of Malaysian HEI experts believe that this could help to achieve campus community sustainability. Moreover, 27% and 70.9% of the respondents strongly agreed and agreed to the statement, respectively, whereas 2.1% others were neutral that staff's competency in communication could contribute to campus community sustainability.

Official Language for Staff

The statistics shows that the mean for the statement, “official language for staff should be considered as a medium of communication” was 3.93%. For this, 2.4% of the respondents strongly agreed, followed by 87.9 % of those who agreed and 9.3% were neutral that the official language for staff should be considered as a medium of communication.

English for Staff

The statistics reveals that the mean for English language as a medium of communication for staff was 4.12%, which was higher than the official language. However, this does not mean that one of these two options should be selected. In other words, experts believe that staff should possess good proficiency in either the official language or English language. 23.9% of the respondents strongly agreed, followed by 64.7 % who agreed, and 11.4% others were neutral that English language should be considered as a medium of communication for staff.

Academics' Competency in Communication

The statistics shows that the mean for academics' competency in communication was 3.8, indicating that the majority of Malaysian HEI experts believe that this factor could contribute to campus community sustainability. Besides, 39.4% of the respondents strongly agreed, 28.4% agreed, 14.9% were neutral, whereas 13.5% others disagreed and 3.5% disagreed that academics' competency in communication could help achieve campus community sustainability.

Official Language for Academics

The statistics shows that the mean for the official language for academics as a medium of communication was 2.57%, illustrating that Malaysian experts did not believe that official language should be taken as a medium of communication for academics. This was clearly indicated by 14.5% of the respondents who strongly agreed to the statement, followed by only 6.2 % who agreed, as compared to 23.5% of others who were neutral, as well as 33.9% and 21.8% who respectively disagreed and strongly disagreed that official language for academics should be considered as a medium of communication.

English for Academics

The mean for the statement, “English language should be considered as a medium of communication for academics”, was 4.79%, indicating that the majority of Malaysian experts believe that English language should be taken as a medium of communication for academics. This was shown by 78.9% of the respondents strongly agreed, and followed by 21.1% others who agreed that English language should be considered as a medium of communication for academics.

Indoor Community Space

The statistics shows that the mean for “having indoor community space” was 4.79%, suggesting that the majority of Malaysian experts believe that indoor community space is an important factor that could contribute to campus sustainability. This was proven by the findings whereby 78.2% and 21.18% of the respondents strongly agreed and agreed, respectively, that providing indoor community space could help obtain campus community sustainability.

On-Campus Housing for Students

The statistics shows that the mean for the statement, “accessibility for students to university’s accommodation for campus community sustainability”, was 4.37%, suggesting that majority of Malaysian experts believe that “Accessibility to university accommodation for students” could contribute to campus community sustainability. 39.1% and 58.8% of the respondents strongly agreed and agreed with the statement and only 2.1% others were neutral that accessibility to university’s accommodation could contribute to campus community sustainability”.

On-Campus Housing for Staff

The mean for this item was 3.85%, suggesting that the majority of Malaysian experts believe that accessibility to university’s accommodation by staff could contribute to campus community sustainability, as indicated the respondents strongly agreed (6.9%), and agreed (71.6%) to the statement. Only 21.5% others were neutral about this factor.

On-Campus Housing for Academicians

The statistics shows that the mean for this particular item was 3.85%, revealing that the majority of Malaysian experts believe that the accessibility to university’s accommodations could contribute to campus community sustainability. 11.4% and 63.7% of the respondents strongly agreed and agreed to the statement, respectively, as compared to only 24.9% of those who were neutral about it.

Student Housing Affordability

This research adopted the definition of ‘affordability’ given by the US Department of Housing and Development, whereby it is explained that ‘affordability’ is achieved when a family spends not more than 30% of its annual income on housing (UNC, 2007).

The statistics showed that the mean for this particular item was 3.85%, suggesting that majority of experts believe that affordability to university’s accommodation by students could contribute to campus community sustainability. For this statement, 20.8% and 69.6% of the respondents strongly agreed, whereas 9.7% were neutral about this matter.

Staff Housing Affordability

The statistics revealed that the mean for this item was 3.52%, showing that majority of Malaysian experts believe that affordability for staff to get university’s accommodation could contribute to campus community sustainability. For this statement, 54.7% of the respondents strongly agreed with it, followed 42.2 % of those who agreed, while 3.1% others were neutral about this statement.

Academician Housing Affordability

The statistics showed that the mean for this factor was 3.67%, indicating that more experts voted for rather than voted against the notion that affordability to university’s accommodation can contribute to campus community sustainability. In particular, 26% of the respondents stated their strong agreement towards the statement, 22.1% agreed, 45.3% were neutral and only 6.6% disagreed on this matter.

On-Campus Employment Centre

The statistics showed that the mean for this item was 4.84%, indicating that majority of Malaysian experts believe that providing job at University student center or career fair could contribute to campus community sustainability. In particular, 83.4% of the respondents strongly agreed with the statement, and this was followed by 16.6% of those who agreed.

Community Library Cards

The statistics illustrated that the mean for this particular item was 4.94%. The finding shows that majority of Malaysian experts believe that providing job by university student center or career fair could contribute to campus community sustainability. In more specific, 83.4% of the respondents strongly agreed, and 16.6 % agreed with this item.

Students' Usage of Public Transportation

The statistics showed that the mean for this subject was 4.9%, indicating that almost all of the experts believe that students' use of public transportation could contribute to campus community sustainability. In more specific, 90% and 10% of the respondents strongly agreed, and agreed on this matter, respectively.

Staff's Usage of Public Transportation

As for staff's usage of public transportation, the statistics indicated that the mean was 4.31%, revealing that majority of Malaysian experts believe that this item could contribute to campus community sustainability. In particular, 50.5% and 30.1% of the respondents strongly agreed and agreed to the statements, respectively, whereas 19.4 % others were neutral about this matter.

Academics' Usage of Public Transportation

The statistics indicated that the mean for this item was 3.88%, suggesting that majority of Malaysian experts believe that academics' use of public transportation could help to attain campus community sustainability. For this, 28.4% and 31.1% of the respondents strongly agreed and agreed with the statement, whereas 40.5 % others were neutral about this matter.

Programmes for Racial Depolarization

The statistics depicts that the mean for this particular item was 4.64%, suggesting that majority of Malaysian experts believe that providing programmes that promote national unity could contribute to campus community sustainability. 64.4% and 35.6% of the respondents strongly agreed and agreed on this subject matter, respectively.

Providing Programmes to Teach Sustainability

The statistics shows that the mean for this item was 3.91%. It suggests that majority of Malaysian experts believe providing programmes for teaching sustainability would be beneficial and could contribute to campus community sustainability. More than half of the respondents (54%) strongly agreed, followed by 14.5% others who agreed, compared to 30.8% of those who disagreed and less than 1% strongly disagreed to this particular statement.

T-TEST AND ANOVA TEST

Based on the results of the T-test on the two groups of males and females, the fixed variables and six indicators of “gender,” were found to be 9-1 to 9-6, respectively, indicating that H₀ is accepted. Meanwhile, the confidence level was found to be at 95%, whereby this resulted in all P value becoming bigger than 5%. Therefore, no significant difference was observed between the male and female respondents in relation to their opinions. In other word, gender of the respondents did not affect the procedure of adapting indicators.

The results from the ANOVA test between the different university voters and language issues indicate that the “P” values are bigger than 5%; therefore, no significant difference was found between the means of the responses. The language parameter was selected as the parameter of test because the four universities had different policies in relation to language use. It is important to note that the ANOVA test was conducted for all parameter based on the four independent variables of the level of study, race, and work experience.

Table 3 : ANOVA Test

	F	Sig.
Students' competency in communication can contribute to campus community sustainability	2.858	.006
Official language should be considered as a medium of communication for students	11.579	.007
English should be considered as a medium of communication for students so as to reach/obtain world-class status	6.767	.006
Staff's competency in communication can contribute to campus community sustainability	2.830	.006
Official language should be considered as a medium of communication for staff	.537	.901
English should be considered as a medium of communication for staff in order to reach/achieve world-class status	1.369	.174
Academicians' competency in communication can contribute to campus community sustainability	5.837	.006
Official language should be considered as a medium of communication for academicians at Malaysian public universities	8.301	.007
English should be considered as a medium of communication for academicians in reaching world-class status	.203	.999

CONCLUSION

This paper has employed modified CSAF indicators as a questionnaire survey. Hence, three gatekeeper questions were designed at the beginning of questionnaire survey to identify the eligible respondents and determine the rate of awareness among the research population. The results showed that 95.57% of the respondents were aware of the meaning of sustainable development, while 82.14% were aware of the meaning of sustainable campus, and 75.2 % managed to identify the correct meaning of the community aspect of sustainable campus . For this purpose, details of the questionnaire survey conducted among 289 eligible respondents at four research universities were thoroughly imparted. Finally, four groups were identified, as follows: 1. Involvement and cohesion, 2. Diversity, 3. Services, and 4. Programmes were found to be the main rubrics of the community aspect of sustainable campus in Malaysia.

REFERENCES

- Bray C. Program evaluation of the sustainability of teaching methods. *Environmental Education Research*. 2008;14:655-66.
- Bray C. Program evaluation of the sustainability of teaching methods. *Environmental Education Research*. 2008;14:655-66.
- Doherty-Delorme D, Shaker ER, Canadian Centre for Policy A. Missing pieces five: Canadian Centre for Policy Alternatives; 2004.
- Clarke A, Kouri R. Choosing an appropriate university or college environmental management system. *Journal of Cleaner Production*. 2009;17:971-84.
- Organisation for Economic C-o, Development. Conducting sustainability assessments: OECD; 2008.
- Omidreza Saadatian, Salleh EI, Tahir OM, Dola aK. Observations of Sustainability Practices in Malaysian Research Universities: Highlighting Particular Strengths. *Pertanika J Soc Sci & Hum*. 2009;17 225 - 44
- Peterson RA. *Constructing effective questionnaires*: Sage Publications; 2000.
- Vaus DAD. *Surveys in social research*: Routledge; 2002.
- Brace I. *Questionnaire Design: How to Plan, Structure and Write Survey Material for Effective Market Research*: Kogan Page; 2008.
- Sirkin RM. *Statistics for the social sciences*: Sage Publications; 2006.
- UPM. Official Website of University Distinguished Research in Malaysia 2010.
- UM. University of Malaysia Official Website. 2010.
- UKM. Laman Web Rasmi Universiti Kebangsaan Malaysia. 2010.
- USM. Universiti Sains Malaysia. 2010.