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Residential Satisfaction and Social Integration in Public Low Cost Housing in Malaysia

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Keywords: Public low cost housing, residential satisfaction, residential attachments, community involvement, social integration

ABSTRAK

Kajian ini menilai perkaitan di antara integrasi sosial dan kepuasan perumahan di kalangan penghuni rumah kos rendah di Malaysia. Dua kawasan bandar dan luar bandar di Selangor telah dipilih dalam kajian ini dan melibatkan seramai 472 responden. Responden ini terdiri daripada 58% Melayu, 22% China dan 20% India. Hasil kajian mendapati bahawa penghuni yang mempunyai kejelekitan tempat tinggal yang kuat serta tahap kepuasan yang tinggi adalah lebih aktif terlibat dengan aktiviti komuniti di kawasan tempat tinggal mereka. Kajian juga menunjukkan bahawa faktor seperti keadaan struktur rumah yang rosak, persekitaran sosial dan fizikal yang tidak baik memberi kesan kepada integrasi sosial di kawasan kejiranan. Oleh itu satu projek perumahan yang dirancang dengan mengambil kira aspek kepuasan perumahan adalah penting untuk dipertimbangkan kerana dapat membantu proses sosialisasi penghuninya ke dalam komuniti.

ABSTRACT

The research examined the relationship between social integration and residential satisfaction of residents in low cost housing in Malaysia. Two urban and non-urban areas in Selangor were chosen for this study involving 472 respondents. 58% of the respondents are Malay, 22% Chinese and 20% Indians. It was shown that residents with strong residential attachments and high levels of satisfaction are actively involved in the community activities held in their neighbourhood. It was also found that factors such as default in the physical structures of the house and poor social and physical environments could affect the social integration in the neighbourhood. Therefore properly planned residential projects with attention given towards residential satisfaction need to be considered because they can help foster the process of socializing people into communities.

INTRODUCTION

One of the important factors that will affect social integration is the resident's feeling of satisfaction with his residence. Satsangi and Kearns (1992) stated that the satisfaction score in housing studies has been deemed as an indicator of service quality or organisational success and effectiveness. Satisfaction has also been heralded as an important means of listening to consumers, and thus a necessary component of organisations becoming more demand-responsive. Pacione (1990:18) points out that residents who cannot attain the desired level of satisfaction through modification of their current setting, will suffer 'residential stress', and this may eventually lead to migration. Basset and Short (1980:188), said that the provision of housing is not only a quantitative problem, but also a qualitative problem in the sense that: a) housing contributed to the reproduction of different components of labour power with different incomes and housing needs, and b) housing also contributed to the reproduction of social relations through correspondence between signs of residential status and position within a social hierarchy, based on class divisions.

Drakakis-Smith (1980:305) also agrees with the above ideas of using housing to build up or

to control the community, either by helping to encourage social interaction between different social classes or by dispersing them into various communities and interacting among themselves. This is because, from numerous studies, it was shown that a strong correlation exists between bad housing and disease, delinquency, and other personal and community disorders. Properly planned residential projects have been seen to help foster good relationships among people in the community and also help raise their aspirations. In addition to its high social utility, better housing will contribute to political stability by moderating people's impatience with the slow tempo of improvement in their living conditions.

Those who are against total heterogeneity, for example Gans (1968:129) argued that people derived more satisfaction from their residential area when they have neighbours who have similar backgrounds and interests. The argument is that people tend to choose friend on the basis of similarities in background such as age and socio-economic level; values, such as those with respect to privacy or child-rearing; and interests, such as leisure-activity preferences. This finding suggests that social relationships are influenced and explained by people's homogeneity with respect to a variety of characteristics. Other research has shown that having neighbours similar to oneself in terms of various characteristics is directly related to satisfaction with the residential environment (Weideman and Anderson 1985:163). Cohen (1986:115) argues that "the attitudes of people toward their neighbourhood could serve as an indication of the degree to which the neighbourhood is measured by attitudes towards it and particularly by attitudes that reflect residential satisfaction from a dwelling and its principal surroundings". Therefore it can be assumed that a neighbourhood where most of the population is satisfied with its residential conditions, is a stable neighbourhood. However, a neighbourhood where the majority of its population is dissatisfied with the residential conditions, is a less stable neighbourhood that does not serve as a protection against the pressures of social change. A less stable neighbourhood is a place where its population does not possess an informal social network and this indicates that those who lived there are not protected against the pressures of the wider society to which they belong. It could well serve as an indication of alienation, anomie, and apathy. In another study done in the Republic of Ireland, it was found that anomie was significantly related to dissatisfaction with neighbours. This is not surprising given that anomie measures alienation from society and the lack of social integration (Davies and Fine-Davies 1981:483). In conclusion, it can be said that people who are satisfied with their residential area will also be satisfied with their neighbours. This is then followed by an attachment to the neighbourhood, creating a strong social cohesion in the neighbourhood. This is because residential areas serve as an area for social interaction, an agent for socialization, a component of social status, a source of opportunities and services, an environment for self-fulfillment, and a protected area for inhabitants (Menahem and Spiro 1989:29).

Therefore in this study 'residential satisfaction' encompasses both housing satisfaction and neighbourhood satisfaction. The focus is on satisfaction because:

1) A failure to meet low cost housing targets means that housing demand cannot be satisfied. This, in turn, means that choice is limited. The government allocation policies determine which house an applicant gets, and such restrictions may affect residential satisfaction.
2) Low cost housing implies a lower standard of housing. Compact design and lower quality material may be used. This might affect the satisfaction of the residents (Peng 1981:49-50) who discussed the poor quality of housing construction, especially in low cost housing. In trying to provide affordable housing the standard of houses is always being compromised. The finishing of the houses, the material used, the design and size of houses are among the major complaints received about low cost housing. Other than the physical aspects, people who are allocated low cost housing have no say in choosing who their neighbours are, and if it involves squatters' allocation then the location of the area is also identified by the authorities. All these factors influence people's evaluation of their housing and neighbourhood and will also influence peoples' behaviour, especially in their relationships with others in the community.
3) Satisfaction is always being associated with the residential environment, and is especially

used as a predictor for migratory or moving behaviour (Marans and Rodgers 1975). With regard to mobility, in a community where the residents keep changing due to people often moving in and out of the area, the integration in the community will be low compared with an area where the residents are less mobile. New residents take time to adjust to the new environment and to socialise with the community. Therefore the assumption is that if satisfaction is shown to influence peoples' thoughts about moving or moving behaviour then it will also influence social integration in the community.

The other important factor is ethnic groups. A study done in Singapore shows that people from different ethnic backgrounds live together peacefully and harmoniously in public estates (Tai 1988). Tai also found out that living together brings a greater opportunity for inter-ethnic contacts and living together in the same residential area harmoniously. Therefore, the interactions and acceptance among the major ethnic groups living closely together in a housing area is an important variable to study.

METHODOLOGY

In this paper the term 'estate' was used during all interviews with the residents. In order to ensure that the term 'estate' would be unambiguous, the name of the housing estate was mentioned when ever referring to the neighbourhood. For example, 'Taman Shah Jaya' was used in referring to the neighbourhood. 'Taman' here means housing estate, while 'Shah Jaya' is the name of the estate. As for social integration, 'having more friends here as compared to the previous place' is used as measurement (St. John, Austin and Baba 1986). A household was defined as two adults with or without children living together.

In terms of location, Selangor was chosen because of its high urbanization rate and because it is also among the earliest states that built low cost houses. The other reason is that the proportion of the three major ethnic groups in Selangor is quite similar to that of Malaysia. There are nine administrative districts in Selangor. They are Gombak, Klang, Kuala Langat, Kuala Selangor, Petaling, Sabak Bernam, Sepang, Ulu Langat and Ulu Selangor. For the purposes of the research, these districts were grouped into two categories: those surrounding Kuala Lumpur (Malaysia's capital city) and those further away. One district from each category was selected for this study. The housing estates chosen in Ulu Langat are located in or near Kajang, a town situated 20 km south of Kuala Lumpur. The three housing estates chosen in Kuala Langat are in or near Banting town, located 60 km southwest of Kuala Lumpur. Comparatively, Ulu Langat has a higher population than Kuala Langat. In terms of ethnic composition, there is not much difference between the two districts.

From each district a list of public low cost housing programmes was obtained. From the list, housing estates which were less than five years old and those with less than 100 houses were removed before the random sample was made. From those remaining, three public low cost housing estates in each of the two districts were chosen randomly. For every housing estate, respondents were chosen at random by using systematically random sampling. The total number of respondents involved in the surveys is shown in Table 1.

The first part of this analysis examines descriptively the household and housing characteristics of the respondents. The paper also discusses the relationship between residential satisfaction and social integration. It then looks at whether the sets of structural variables significantly add to the social integration, over and above satisfaction. If indeed these variables only affect social integration as they affect satisfaction, their inclusion will not add significantly to the fit of the model. Finally, both sets of structural variables are added simultaneously, and test the fit of the complete model against each of the less inclusive models. At each step in the analysis, the relative magnitude and direction of the effects of various specific factors are evaluated by looking at the logistic regression coefficient (Landale and Guest 1985).

Household and Housing Characteristics

Of the total sample of 472 households, 58% were Malay, 22% were Chinese and 20% Indians. All the Malays in the survey are Muslim, with 55% male, 31% between 41 to 50 years of age. 52% received less than six years of formal education and 25% work in the public sector

TABLE 1
Total number of respondents

Ethnic Groups	District					
	Ulu Langat		Kuala Langat		Total	
	n	%	n	%	n	%
Malays	156	64	118	51	274	58
Chinese	50	21	53	23	103	22
Indians	36	15	59	25	95	20
Total	242	100	232	99	472	100

with monthly incomes of RM500 or less, while the wives are mostly housewives. 39% have one or more children still living with them.

Most of the Chinese households (80%) are Buddhist but other religions are also represented. There are more female respondents as the husbands were out at work when the interview was done. The Chinese surveyed are within the age range of 31 to 50 years and nearly half (45%) have received more than nine years of formal education. This is considerably higher than for both the Malay and the Indian respondents. In terms of husbands' occupations, 50% are self-employed, in contrast to 14% Malay and 5% Indians. Perhaps not surprisingly, quite a high proportion of Chinese (56%) earn more than RM1,000 per month. 68% have three or more children living with them, again higher than for the other two groups.

Most Indians (88%) are Hindu and the majority of the Indian respondents are male. As with the other ethnic groups, the majority (58%) belongs to the age group of 31 to 50 years. 57% received nine years or less of formal education. 30% of the husbands work in the public sector and 45% in the private sector. Household incomes tend to be lower than those of Chinese respondents but higher than those of the Malays.

For housing characteristics, the majority of the respondents are homeowners (71%). Before moving here many of them rented a house (44%) and the rest either lived with their own families or in quarters provided by their employers. The house that they lived in at present is a two-bedroom terrace house, with one bathroom and a separate toilet. There is only one small kitchen available and shared space for the lounge and dining room.

EMPIRICAL RESULTS

The results of the logistics regression are presented in Tables 2 and 3. Table 2 shows that independent variables which are significant as shown in column 1, Table 2 were omitted in turn to see its effect and significance on the social integration value in the neighbourhood through the chi-square statistics (see column 2 to column 7, Table 2). The results are discussed in detail below.

Individual and Household Characteristics

It is expected that individual and household characteristics would influence social integration. Results show that only the age of respondents is consistently significant at least at $p<0.05$. To be specific, only residents in the age group of 30 and below show significance at $p<0.05$. The negative coefficient for age indicates that residents who are 30 years and below were one fifth as likely as residents older than 30 years to integrate into the community (see column 1, Table 2). The other variables did not show any significant relationship at the level of 0.05 (Table 2). In the process of integration, especially in making new friends, occupational status, educational attainment, and income are important factors (Jackson 1977:59). Carey and Mapes (1972:14-15) also point out that age, life stage, and job status are among the characteristics of individuals that are shown to affect the visiting level among the neighbours. Since this study focussed on the residents of low cost housing, these criteria are not so important, and are not major criteria influencing social integration. The reason for this is that residents living in public low cost housing tend to be similar in terms of educational attainment, occupational status and incomes, because the allocation policy for public housing is for people with incomes of RM750 or

TABLE 2
Logistic regression for social integration

Column Variable	model 1	2	3	4	5	6	7
Residential Educational Attainment							
5 years and below	-0.1802						
6 to 10 years	0.3450						
Household Incomes (RM)							
750 and below	0.0115						
751 to 1250	0.2596						
No. of Children Living Together							
1 to 2	-0.6253						
3 to 4	0.2850						
5 and above	0.0894						
Age of Respondents							
30 and below	-0.5921*	-0.6130**	-0.7958**	-0.5556*	-0.5653		-0.6940**
31 to 45 years	-0.0678	-0.0110	0.1240	0.0375	-0.0639		-0.0040
Length of Residence In Years							
5 years and below	-0.2718						
6 to 10 years	0.0221						
Ethnic Group	0.7124**	0.7153**	0.6390**		0.6077**	0.6702**	0.7666**
Location	0.8669***	0.8919***	1.0145***	0.8068**	0.8510***	0.8719***	
Residential Satisfaction							
Housing satisfaction	0.7082**	0.6566**		0.5703*	0.6637**	0.5963*	0.6334**
Neighbourhood Satisfaction	0.9215**	0.8539**		0.6700*	1.0796***	0.7689*	0.8585**
Residential Attachments	0.6030*	0.4835	0.4520	0.5861*	0.4360	0.6920**	
Tenancy Status	-0.1118						
Constant	-3.5875	-3.9425	-2.4744	-2.7119	-2.2061	-3.0973	3.0973
(-2)Log likelihood	479.686	497.282	530.533	510.587	511.084	511.084	500.897
d.f.	379	394	420	397	396	396	395
Chi-square value	70.650	59.968	59.427	49.859	46.167	46.16	56.354
d.f.	17	7	5	6	6	5	6

* p<0.05, ** p<0.01, *** P<0.001

less per month. This is the reason why these variables are not significant in this study.

Location

It was assumed that the more urbanised the area, the less integrated its community, as the relationships were more formal and neighbourhood functions were subsumed by other societal institutions, while the less urbanised areas suggested a high degree of social integration and interaction among their residents. Results show that location is consistently significant, to the extent that it manifests the strongest relationship with social integration at level 0.001,

except in column 4 when ethnic group is left out (Table 2). The significance of this variable is also evident from the fact that its omission from the equation reduces the chi-square statistic and the fit of the equation substantially. The chi-square statistic falls from 59.97 (column 2, Table 2) to 43.66 (column 5, Table 2). This significance indicates that residents in Ulu Langat (an area which is more urbanised and is also situated nearer to the business centre, Kuala Lumpur, the capital city of Malaysia) shows higher integration compared to Kuala Langat (an area with small towns, situated further away from Kuala Lumpur). The table also shows that residents of public low cost housing in Ulu Langat are 2.4 times ($e^{0.8919}$=2.4, see column 2, Table 2) more likely to integrate into their neighbourhood than residents in public low cost housing in Kuala Langat. Therefore these findings do not agree with Wirth's (1938) theory which argued that the primary relationship between the residents has changed to a more formal or secondary relationship as a result of urbanisation. The results of this study have particular implications for social integration programmes. Many of the programmes to induce among members in a community have been focussed in urban areas, and the results indicate that these programmes have been relatively successful.

Ethnic Groups

Ethnic groups prefer to stay in areas where they are the majority because they feel more secure and are more likely to integrate with each other in this kind of community (Nuzhat Ahmad 1993). The results from this study show that the assumption holds true for the ethnic groups in Malaysia. In Table 2, the ethnic group's variable is consistently significant at $p < 0.01$. This implies that the Malays are more fully integrated in the community as compared to other ethnic groups, and this is not surprising as the majority of the population living in public low cost housing is Malay. This is due to the housing allocation ratio set up by the government for low cost housing. The ratio is 7:2:1, 7 for Malays, 2 for Chinese and 1 for Indians. From the table it can be seen that the Malays in public low cost housing are 2 times ($e^{0.7155}$=2.0, see column 2, Table 2) more likely than the other ethnic groups to integrate into the community. In addition, the occupation of the respondents also shows that the Malays, many of whom work in the public sector, spend more time in the neighbourhood compared to the Chinese, many of whom are occupied in their businesses. Normal working hours for public servants are from 8.00 in the morning until 4.30 in the afternoon. Those who are involved in business or private firms will tend to spend more time at work. The Malays also participate more in local organisations as compared to the other ethnic groups. All these factors influence the Malays' level of integration in the community especially among themselves, positively. This is not surprising because as stated by Mohd Razali (1992) the ethnic groups in Malaysia are more comfortable in their own ethnic groups and they sometimes, especially the Malays, demand that they should be allocated together in a block or area with their own ethnic group. However, he also stated that the Malay can more easily accept other ethnic groups to be with their community as compared to Chinese or Indians.

Community Attachments

Oropesa (1989) argued that there are residents who participate in local organisations because of personal, social or economic interests. Specifically, residents who own valuable property have an incentive to participate because of their economic interest in the state of the property market. Homeownership is seen as the most secure form of housing tenure. One of the benefits claimed for homeownership is that it can enhance democracy through creating incentives for greater community involvement and social attachment (Carlson 1989). Saunders (1990) also argued that homeowners have higher incentives to participate in local organisations. This would suggest that the same argument can be used for social integration where it might be assumed that homeowners will integrate more into the community than tenants. But this is not the case in this study. Table 2 shows that tenure is not a significant factor in social integration (at level 0.05). Homeownership or renting makes no difference to social integration among the residents of the low cost housing sector in Selangor.

Length of residence has also been regarded as a good indicator for social integration. The longer the length of residency, the higher the possibility for these people to integrate into the community where they live. But this analysis reveals that length of residence is not an

important factor for social integration. However, the negative coefficient value for residents of five years or less shows that they are less likely to integrate into the neighbourhood as compared to the other residents who have lived there longer (Table 2).

Many studies have shown the existence of a relationship between local friendships, neighbourhood and residential attachments. It was also found that attachment was generated by informal and formal participation in the local area (Woolever 1992:99-104). The analysis shows that residential attachment is not consistently significant with social integration. It is significant only in column 4 at level 0.05 when ethnic groups were left out and in column 6 at level 0.01 when the age of respondents was left out (Table 2). What can be concluded from these findings is that residents who are attached to their residence are 2 times more likely to integrate into the community ($e^{0.6920}$=2.0, see column 6, Table 2). Attachment towards residence may also be due to ethnicity. Since most of the neighbourhoods involved in this analysis are a Malay majority, it is not surprising to see that attachment is a variable for social integration in this study. The findings also show that households are more attached to a neighbourhood if the majority of the population is of a similar ethnic group as theirs, giving rise to a reluctance to move out of that neighbourhood. The implication of the finding is that in the future, there is likely to be an increase in the segregation of people by ethnic backgrounds in the public low cost housing sector.

Residential Satisfaction

This study shows that both housing and residential satisfaction are constantly significant with social integration ($p<0.05$, see Table 2). Residents who are satisfied with their neighbourhoods are 2.4 times ($e^{0.8539}$=2.4 see column 2, Table 2) more likely to integrate compared with residents who are not satisfied with their neighbourhoods. Residents who are satisfied with their housing are 1.9 times ($e^{0.6566}$=1.9 see column 2, Table 2) more likely to integrate than residents who are not satisfied. The finding implies that those who are satisfied with their residence are more likely to stay longer and be more integrated into the community as compared to those who are not satisfied. Razali (1991) stated that one of the reasons people move is because they are not satisfied with their existing house and neighbourhood. If the turnover rate of residents is high in the area, it can affect the style and strength of relationships in the area. This study also shows that without considering residential satisfaction (see column 3, Table 2) age, ethnic groups and location are significantly related to social integration. When the satisfaction variables are included as variable (column 2, Table 2), all the three statistical variables from column 3, which are significantly related to social integration, continue to have the same quality. Some of the coefficients are reduced in size, but the reduction is generally small. What can be concluded here is that all the variables, which show significant values, operate in an independent manner to predict social integration. Therefore satisfaction is an important variable in predicting social integration. In trying to solve housing demand, the government has introduced many standards and designs for low cost housing. There are even suggestions that size and quality should be sacrificed to ensure that housing targets can be achieved This study suggests that for public housing to be used as an instrument to achieve social integration, subjective measurements, that is the feelings, perceptions and attitudes of the people, should be taken into consideration.

Table 3 compares the two districts, Ulu Langat and Kuala Langat, and also Malays and non-Malays. For residents in Ulu Langat, the variable residential satisfaction has a significant relationship with social integration at $p<0.05$ (see Table 3). The other variables such as age, residential attachment and ethnic group did not show any significant relationship. Therefore in Ulu Langat, respondents who are satisfied with their houses are two times more likely ($e^{0.6790}$=1.97, Table 3) to integrate into the community than residents who are not satisfied. Residents who are satisfied with their neighbourhood are 3 times ($e^{1.1829}$=3.3, Table 3) more likely to integrate into the community.

For Kuala Langat, housing satisfaction, age and ethnic group variables have a significant relationship with social integration. Residents who are satisfied with their houses are two times more ($e^{0.7192}$=2.05, Table 3) likely to integrate into the community compared with residents who are not satisfied. The Malays here are three times ($e^{1.0032}$=2.7, Table 3) more likely to integrate

as compared with the non-Malays. The negative coefficient indicated that the age group of 30 years and less are one-quarter more likely to participate in social integration as compared with respondents of more than 30 years of age.

A comparison of the two districts shows that in Ulu Langat there is no difference between ethnic groups for social integration, while in Kuala Langat there is a difference. The Malays in Kuala Langat integrate more than the non-Malays. Residents in both areas feel that housing satisfaction is an important predictor of social integration, as both show a significant relationship with social integration at level 0.05 (Table 3). Between the two districts, there are no significant differences for the relationship between social integration and housing satisfaction. This means that for both districts, housing satisfaction is a very important predictor for social integration. One of the main reasons for this is that the majority of the respondents in both districts are Malays. For the Malays, housing satisfaction shows a strong significant relationship with social integration at level 0.001 (Table 3). The Malays who are satisfied with their houses are three times ($e^{1.175}$=3.2, Table 3) more likely to integrate as compared with Malays who are not satisfied with their houses. Residential attachment and district are also important predictors, for the Malays, for social integration. Both these variables show a significant relationship with social integration at level 0.05 (Table 3).

Lastly, looking at the non-Malays column it can be seen that none of the variables show a significant relationship at level p<0.05 with social integration (Table 3). This is one of the major differences between the Malays and non-Malays. The reason for this difference is that for the non-Malays, residential aspect is not an important factor in determining their behaviour for social integration. But for the Malays it is an important aspect and may be due to the probability of the Malay obtaining other low cost housing being higher as compared to the non-Malays.

CONCLUSION

To summarise the above findings, age of respondents, ethnic group, location, residential attachment and residential satisfaction are major determinants of social integration in public low cost housing in Selangor, Malaysia. The result of this study shows that social integration among residents here is driven by considerations different from those found in other studies in the developed countries. Even among the ethnic groups in Malaysia, it is shown that social integration is driven by different considerations. This is not surprising as the different ethnic groups have different cultures and ways of life.

The factors which could have a significant impact on social integration, and implications

TABLE 3
Logistic regression for social integration by ethnic groups and areas

Variables	Ethnic Groups		District	
	Malay	Non-Malay	Ulu Langat	Kuala Langat
Housing Satisfaction	1.1749***	-0.2208	0.6790*	0.7192*
Neighbourhood Satisfaction	0.7025	0.9261	1.1829**	-0.0485
Age				
30 years and less	-0.4482	-0.8727	-0.4095	-0.7788*
more than 30 years	-0.0914	0.1758	-0.1023	0.0778
Residential Attachment	0.7563*	0.2747	0.7431	0.4993
Ethnic Groups			0.3853	1.0032***
District	1.2268***	0.5760		
Constant	-3.5791	-2.3035	-2.7158	-1.1053
-2 Log Likelihood	258.089	201.156	257.259	235.924
d.f.	237	151	200	188
Chi square value	51.2	15.8	23.1	25.7
d.f.	6	6	6	6

* p<0.005,** p<0.01, *** p<0.001

for the restructuring policy of the government are location, ethnic group and residential satisfaction.

The significance of location suggests that the focus of the national unity programmes should be widened to include both urban and non-urban areas.

For ethnic groups, the results show that they prefer to live in an area where they are the majority. The results also suggest that the Malays are more likely to stay in their own community and the non-Malays are more receptive to living among other ethnic groups. This may be due to the Malays being the majority while the other ethnic groups are the minority. Therefore, to ensure the success of social integration programmes in public housing, the allocation ratio set by the government should be revised and a more balanced allocation introduced. Only then can the feeling of living together in one area be built up.

The significance of residential satisfaction in determining social integration also suggests that it may have wider implications for the national integration programmes. The introduction of a social integration policy for the residents in low cost housing should be in line with housing policy designed to maximise residential satisfaction. The results suggested that residents with a strong residential attachment and high level of residential satisfaction are more willing to participate in community activities, which may in turn enhance social integration. Factors which could affect residential satisfaction, such as defects in the physical structure of the housing, lack of well-maintained public facilities, and poor social and physical environment could also adversely affect the achievement of greater social integration.

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Kreativiti Guru Pendidikan Seni

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Kata kunci: Kreativiti, guru Pendidikan Seni sekolah menengah

ABSTRAK

Matlamat utama kajian ialah untuk membandingkan kreativiti guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih yang mengajar di sekolah-sekolah menengah. Kajian ini merupakan kajian deskriptif yang menggunakan alat Ujian Pemikiran Kreatif Figural Torrance untuk memperoleh indeks kreativiti guru. Subjek kajian terdiri daripada seramai 34 guru Pendidikan Seni terlatih dan 45 guru Pendidikan Seni tidak terlatih dari 22 sekolah menengah daerah Hulu Langat, Selangor. Dapatan kajian menunjukkan bahawa kumpulan guru Pendidikan Seni adalah lebih kreatif secara signifikan berbanding kumpulan guru Pendidikan Seni tidak terlatih dari segi kelancaran dan penghuraian. Ini bererti guru Pendidikan Seni terlatih ini lebih berupaya memahami, membaca dan menghuraikan idea-idea kreatif yang dihasilkan pelajar. Pengkaji mencadangkan agar kursus dan latihan yang diberikan kepada para guru Pendidikan Seni pada masa depan lebih mengutamakan aspek kreativiti.

ABSTRACT

The main purpose of this study is to compare the creativity of trained and untrained art education teachers. This is a descriptive study that uses the Torrance Test of Creative Thinking as its instrument to obtain the creative thinking indexes of the teachers. Subjects of the study comprise 34 trained art education teachers and 45 untrained art education teachers from 22 secondary schools located in the district of Hulu Langat, Selangor. The results of the study indicated that trained art education teachers are significantly more creative than untrained art education teachers in the aspects of fluency and elaboration. This suggests that trained art education teachers can understand creative ideas better and elaborate on them in more detail than untrained art education teachers. The researcher suggests that in future teachers training programmes should place more emphasis on creativity.

PENGENALAN

Kreativiti merupakan salah satu keupayaan unik semula jadi manusia. Adalah dipercayai bahawa seseorang individu tidak dapat menggunakan potensi dirinya dengan sempurna tanpa kreativiti. Pendidikan seni merupakan salah satu mata pelajaran utama di sekolah yang penting untuk merangsang pemikiran kreatif para pelajar. Walau bagaimanapun, menurut Victor (1978), guru-guru Pendidikan Seni yang tidak terlatih dalam Pendidikan Seni adalah kurang kreatif dan kurang berupaya memperkembang kreativiti pelajar.

Dakwaan Victor disokong oleh Pertubuhan Seni Negeri-negeri Barat, Amerika Syarikat (1976), yang melaporkan kajian ke atas lebih daripada 5000 sekolah di Amerika Syarikat. Lebih daripada 2000 pelukis dan seniman profesional ditempatkan di sekolah-sekolah tersebut sebagai guru seni untuk meningkatkan keupayaan kreatif pelajar. Hasil kajian tersebut menunjukkan minat pelajar dan pencapaian mereka dalam akademik juga bertambah.

Bagi memperlihat sama ada guru yang dilatih untuk mengendali aktiviti kreatif dapat meningkatkan kreativiti pelajar dalam mata

pelajaran Pendidikan Seni, Richmond (1993) membina satu konsep imaginatif dalam pengajaran Pendidikan Seni untuk membantu meningkatkan imaginasi pelajar dalam hasil seni pelajar. Dalam kajian itu, guru-guru yang dilatih dengan konsep tersebut telah meningkatkan keupayaan kreatif pelajar. Ferrell, Kress dan Croft (1988) juga melaporkan bahawa hasil kajian mereka menunjukkan kumpulan guru yang dilatih di bawah program pengajaran yang berorientasikan konsep kreativiti adalah lebih inovatif, lebih kreatif dan lebih menghargai idea-idea pelajar daripada kumpulan guru yang dilatih di bawah program pendidikan guru yang biasa.

Sementara itu, Mohan (1973) membuat kajian ke atas kreativiti guru dan mendapati kandungan kursus-kursus pendidikan pusat latihan guru adalah kurang menekankan aspek kreativiti. Beliau mencadangkan bahawa program latihan guru harus lebih mementingkan aspek kreativiti guru. Menurut beliau, kursus-kursus kreativiti adalah amat diperlukan oleh para guru terlatih dan guru pelatih.

Lowendeld dan Brittain (1975) berpendapat bahawa guru harus berminat dalam Pendidikan Seni dan meningkatkan keupayaan diri untuk mengendalikan aktiviti yang kreatif secara berterusan bagi melibatkan pelajarnya dalam ekspresi kreatif. Semua kanak-kanak mempunyai desakan kreativiti dalaman yang dapat disalurkan melalui aktiviti-aktiviti seni. Pelajar harus didedahkan kepada sebanyak bentuk idea dan rangsangan yang mungkin, kerana proses kreatif adalah bukan hanya satu keseronokan bagi pelajar sendiri sahaja, ia merupakan latihan untuk menemui dan memahami diri sendiri dan dunia. Oleh itu, guru Pendidikan Seni harus diberi latihan yang dapat meningkatkan kreativiti guru.

Di Malaysia, tiada kajian dilakukan untuk mengenal pasti kreativiti guru-guru pendidikan seni, walaupun sebilangan besar guru yang mengajar mata pelajaran Pendidikan Seni di sekolah-sekolah menengah adalah guru-guru yang tidak terlatih di bidang Pendidikan Seni (Chua 1998).

OBJEKTIF KAJIAN

Kajian ini dilakukan untuk melihat sama ada guru Pendidikan Seni yang terlatih lebih kreatif daripada guru Pendidikan Seni Tidak Terlatih.

KAEDAH

Responden

Bagi menepati objektif kajian ini, 34 guru Pendidikan Seni Terlatih dan 45 guru Pendidikan Seni Tidak Terlatih di dalam Daerah Hulu Langat, Selangor dipilih sebagai responden kajian ini. Responden ini dipilih secara rawak daripada 151 guru Pendidikan Seni dalam daerah tersebut. Guru Pendidikan Seni Terlatih adalah guru yang pernah mengikuti kursus Pendidikan Seni di maktab perguruan atau institusi pengajian tinggi yang lain, manakala guru Pendidikan Seni Tidak Terlatih adalah guru sekolah menengah yang tidak terlatih dalam bidang Pendidikan Seni, yang mengajar mata pelajaran Pendidikan Seni.

Alat Kajian

Alat kajian bagi penyelidikan ini dinamakan Ujian Kreatif Figural Torrance (TTCT). Penggunaan dan penterjermahan alat kajian dibenarkan oleh pembina alat kajian ini. Terdapat tiga aktiviti melengkapkan gambar lukisan dalam TTCT yang menguji kreativiti guru-guru Pendidikan Seni. Lima komponen kreativiti yang dikenal pasti melalui TTCT ialah:

1. Keaslian - idea yang unik, iaitu idea yang jarang dijumpai.
2. Kelancaran - Bilangan idea baru yang dihasilkan oleh individu.
3. Penghuraian - Kebolehan memberi butir-butir lanjut yang menerangkan idea yang telah dihasilkan.
4. Keabstrakan tajuk - keupayaan mensintesis dan menyusun pemikiran, memperoleh maklumat-maklumat penting yang diperlukan, mengetahui apa yang penting dalam gambar yang dilukis dan seterusnya memberi tajuk yang baik kepada gambar tersebut.
5. Penentangan Penutupan "Premature" - keupayaan untuk menentang kecenderungan untuk membuat keputusan akhir dengan serta-merta tanpa memikir atau menimbang maklumat-maklumat yang lain.

a. Kesahan dan Kebolehpercayaan TTCT

Kajian tentang kesahan dan kebolehpercayaannya telah banyak dijalankan dan dilaporkan. Sejumlah besar bukti ujian kesahan telah dihasilkan dan diterbitkan (Torrance 1974). Kajian-kajian tersebut termasuk kesahan kandungan (content validity), kesahan ramalan

(predictive validity), kesahan seiring (concurrent validity) dan kesahan binaan (construct validity). Terdapat banyak kajian yang berkaitan dengan kesahan ramalan, kesahan seiring dan kesahan binaan. Kajian-kajian tersebut dihuraikan dalam 'TTCT Streamlined (Revised) Manual' (Torrance and Orlow 1984).

b. Adaptasi dan Ujian Rintis TTCT Versi Bahasa Malaysia TTCT (BM)

TTCT diterjemah ke dalam bahasa Malaysia dan kemudiannya disemak dan diperbaiki oleh tiga guru yang mahir dalam kedua-dua bahasa Inggeris dan bahasa Malaysia. Kajian rintis kemudian dijalankan dengan menggunakan 11 guru sekolah menengah. Semua guru tersebut kemudian ditemu bual secara individu. Kesemua guru tersebut mengatakan bahawa arahan-arahan mudah difahami dan tidak mengelirukan. Setelah dua bulan, TTCT (BM) diuji semula ke atas guru-guru yang telah menjalani ujian rintis. Pekali kolerasi Kebolehpercayaan uji dan uji semula bagi komponen keaslian, kelancaran, penghuraian, keabstrakan tajuk dan penentangan penutupan "premature" adalah 0.82, 0.76, 0.75, 0.84 dan 0.79 masing-masing pada p< .001. Pekali kolerasi Kebolehpercayaan untuk kreativiti figural ialah 0.83. Berdasarkan keputusan kajian di atas, TTCT (BM) diputuskan sesuai dan boleh dipercayai untuk memperoleh skor yang stabil daripada responden.

Prosedur

Ujian TTCT diberikan secara individu kepada guru-guru pendidikan seni di sekolah masing-masing oleh pengkaji sendiri.

Analisis Data

Statistik seperti min, sisihan piawai, varian dikira menggunakan perisian menganalisis data SPSS. Bagi membandingkan kreativiti kumpulan guru Pendidikan Seni terlatih dan kumpulan guru Pendidikan Seni tidak terlatih, data yang dipungut oleh alat kajian dianalisis menggunakan ujian-t berdasarkan indeks kreativiti dan kelima-lima komponen kreativiti iaitu keaslian, kelancaran, penghuraian, keabstrakan tajuk dan penentangan penutupan "premature".

KEPUTUSAN

Analisis Ujian t Membandingkan Indeks Kreativiti Guru Pendidikan Seni Terlatih dan Guru Pendidikan Seni Tidak Terlatih

Ujian t dua sampel tidak bersandar dijalankan untuk menguji perbezaan antara:

a. Min indeks kreativiti guru Pendidikan Seni Terlatih dan min indeks kreativiti guru Pendidikan Seni Tidak Terlatih.
b. Min setiap komponen kreativiti guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih.

Berdasarkan nilai indeks kreativiti guru-guru pendidikan seni yang diperoleh daripada skor ujian TTCT, Jadual 1 diperoleh seperti di bawah:

Berdasarkan Jadual 1, nilai min bagi indeks kreativiti guru Pendidikan Seni Terlatih adalah lebih tinggi daripada nilai min bagi indeks kreativiti guru Pendidikan Seni Tidak Terlatih. Guru Pendidikan Seni Terlatih mempunyai nilai min bagi indeks kreativiti sebanyak 78.97 dan sisihan piawai sebanyak 15.85. Nilai minimum dan nilai maksimum bagi indeks kreativiti pula ialah 53.80 dan 118.80. Bagi guru Pendidikan Seni Tidak Terlatih pula, nilai min bagi indeks kreativiti dan sisihan piawai ialah 63.61 dan 16.36. Skor indeks kreativiti ialah dari 32.20

JADUAL 1
Ujian t membandingkan indeks kreativiti di antara kedua-dua kumpulan guru Pendidikan Seni

	Guru Pendidikan Seni Terlatih (n=34)	Guru Pendidikan Seni Tidak Terlatih (n=45)	Ujian t	
			t	p< .005
Min	78.97	63.61		
Sisihan piawai	15.88	16.36		
			4.03	Signifikan
Minima	53.80	32.20		
Maksima	118.80	104.00		

Sisihan piawai min = 16.35, df = 75, t(krit.) = 2.66, Aras signifikan = 1 ekor.

sehingga 104.00. Nilai sebanyak 4.03 adalah signifikan secara statistik pada $p < .005$ menunjukkan bahawa indeks kreativiti guru Pendidikan Seni Terlatih (min = 78.97) adalah lebih tinggi secara signifikan daripada indeks kreativiti guru Pendidikan Seni Tidak Terlatih (min = 63.61).

Berdasarkan keputusan analisis ujian t tadi, jelaslah bahawa kumpulan guru Pendidikan Seni Terlatih adalah lebih kreatif secara signifikan daripada kumpulan guru Pendidikan Seni Tidak Terlatih.

Analisis Ujian t bagi Membandingkan Komponen-Komponen Kreativiti Kedua-dua Kumpulan Guru Pendidikan Seni

Berdasarkan skor setiap komponen kreativiti yang diperoleh guru-guru Pendidikan Seni dalam ujian TTCT, Ujian t dua sampel tidak bersandar dijalankan dan keputusannya dipersembahkan dalam Jadual 2.

Seperti yang ditunjukkan dalam Jadual 2, guru Pendidikan Seni Terlatih mempunyai nilai min keaslian sebanyak 106.58 dan sisihan piawai sebanyak 29.41 manakala nilai min keaslian dan sisihan piawai bagi kumpulan guru Pendidikan Seni Tidak Terlatih ialah 92.47 dan 28.13. Nilai t sebanyak 1.90 ($df = 75$, $p < .05$) adalah tidak signifikan secara statistik.

Keputusan ujian ini menunjukkan bahawa tidak terdapat perbezaan yang signifikan di antara min keaslian guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih. Dengan erti kata lain, keputusan di atas menunjukkan bahawa tidak ada perbezaan kreativiti dari segi menghasilkan idea yang asli dan unik antara guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih.

JADUAL 2
Ujian t komponen-komponen kreativiti antara guru Pendidikan Seni terlatih dan guru Pendidikan Seni tidak terlatih

Komponen-Komponen Kreativiti	Guru Pendidikan Seni		t	Ujian t
	Terlatih	Tidak Terlatih		
KEASLIAN				
Min	106.58	92.47		
Sisihan piawai	29.41	28.13	1.90	Tidak signifikan
Minimum	72	4		
Maksimum	172	164		
KELANCARAN				
Min	104.5	90.56		
Sisihan piawai	25.10	22.45	2.16	Signifikan
Minimum	67	0		
Maksimum	160	151		
PENGHURAIAN				
Min	51.21	46.88		
Sisihan piawai	7.00	7.34	2.07	Signifikan
Minimum	44	30		
Maksimum	72	80		
KEABSTRAKAN TAJUK				
Min	55.00	37.00		
Sisihan piawai	29.77	42.14	1.63	Tidak signifikan
Minimum	0	0		
Maksimum	100	170		
PENENTANGAN PENUTUPAN "PREMATURE"				
Min	60.44	55.47		
Sisihan piawai	14.58	13.84	1.30	Tidak signifikan
Minimum	0	0		
Maksimum	85	85		

d.f = 75, p< .05

Data di dalam Jadual 2 menunjukkan bahawa terdapat perbezaaan yang signifikan antara min kelancaran guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih. Guru Pendidikan Seni Terlatih mempunyai nilai min kelancaran sebanyak 104.50 dan sisihan piawai sebanyak 25.10, manakala guru Pendidikan Seni Tidak Terlatih memperoleh nilai min sebanyak 90.56 dan sisihan piawai sebanyak 22.45. Nilai t sebanyak 2.16 adalah signifikan pada aras $p < .05$. Daripada keputusan ujian ini, didapati kumpulan guru Pendidikan Seni Terlatih adalah lebih kreatif dari segi kelancaran daripada kumpulan guru Pendidikan Seni Tidak Terlatih, iaitu kumpulan guru Pendidikan Seni Terlatih adalah lebih berupaya menghasilkan bilangan idea baru yang banyak daripada kumpulan guru Pendidikan Seni Tidak Terlatih.

Keputusan ujian t juga menunjukkan terdapat perbezaan yang signifikan di antara kedua-dua kumpulan guru Pendidikan Seni dari segi penghuraian. Min dan sisihan piawai bagi guru Pendidikan Seni Terlatih ialah 51.21 dan 7.00 manakala min dan sisihan piawai bagi guru Pendidikan Seni Tidak Terlatih ialah 46.88 dan 7.34. Nilai t sebanyak 2.07 adalah signifikan pada $p < .05$. Ini bererti kumpulan guru Pendidikan Seni Terlatih lebih berupaya mentafsir dan menghuraikan idea-idea pelajar daripada kumpulan guru Pendidikan Seni Tidak Terlatih.

Data dalam Jadual 2 juga menunjukkan bahawa tidak terdapat perbezaan yang signifikan antara guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih dari segi keabstrakan tajuk dan penentangan penutupan "premature".

PERBINCANGAN

Keputusan analisis ujian t dua sampel tidak bersandar menunjukkan bahawa terdapat perbezaan kreativiti yang signifikan antara kedua-dua kumpulan guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih. Kumpulan guru Pendidikan Seni Terlatih adalah lebih kreatif secara signifikan daripada kumpulan guru Pendidikan Seni Tidak Terlatih pada $p < .005$.

Selain daripada itu, keputusan kajian ini juga menunjukkan bahawa guru Pendidikan Seni Terlatih adalah lebih kreatif dari segi kelancaran dan penghuraian. Ini bererti guru Pendidikan Seni Terlatih lebih berupaya menghasilkan idea-idea yang lebih banyak dalam masa yang singkat dan lebih berupaya menghuraikan idea-idea secara teliti daripada guru Pendidikan Seni Tidak Terlatih, dan mereka lebih mementingkan kreativiti dalam catan pelajar daripada guru Pendidikan Seni Tidak Terlatih semasa membuat penilaian. Dapatan kajian ini selaras dengan pendapat Lowenfeld dan Brittain (1975) dan Victor (1978) bahawa guru Pendidikan Seni yang lebih kreatif lebih memahami idea-idea baru dan luar biasa pelajar-pelajarnya berbanding guru Pendidikan Seni yang kurang kreatif.

Mengapa kumpulan guru Pendidikan Seni Terlatih mempunyai kreativiti yang lebih tinggi daripada kumpulan guru Pendidikan Seni Tidak Terlatih ? Soalan ini mungkin dapat diterangkan oleh dapatan kajian Wikstrom, Ekvall dan Sanstrom (1994); Ferrel, Kress dan Croft (1988) dan Liikanen (1975).

Dapatan kajian Wikstrom, Ekvall dan Sanstrom (1994) menunjukkan bahawa aktiviti-aktiviti Pendidikan Seni meningkatkan kreativiti dari segi penambahan idea-idea luar biasa iaitu kelancaran. Selain itu, kajian Ferrel, Kress dan Croft (1988) juga menunjukkan bahawa guru-guru yang telah menghadiri program latihan Pendidikan kreatif adalah lebih inovatif dan kreatif.

Hasil kajian di atas juga sepadan dengan kajian Liikanen (1975) yang menggunakan alat kajian yang sama dengan kajian ini iaitu alat TTCT untuk menyukat kreativiti responden. Dapatan kajian beliau menunjukkan bahawa program latihan Pendidikan Seni meningkatkan kreativiti pelajar dari segi keaslian, kelancaran. Ini bererti guru-guru Pendidikan Seni harus diberi kursus atau latihan Pendidikan Seni untuk meningkatkan kreativiti mereka.

Walaupun dapatan kajian ini menunjukkan bahawa guru Pendidikan Seni Terlatih lebih kreatif dari segi kelancaran dan penghuraian, keputusan juga menunjukkan bahawa tidak terdapat perbezaan di antara kedua-dua kumpulan guru tersebut dari segi keaslian, keabstrakan tajuk dan penentangan penutupan "premature". Dengan erti kata yang lain, dapatan kajian ini menunjukkan bahawa latihan guru tidak meningkatkan keupayaan guru Pendidikan Seni untuk menghasilkan idea-idea yang kreatif (keaslian). Selain daripada itu, ia juga tidak meningkatkan keupayaan guru untuk mensintesis, menyusun pemikiran dan seterusnya mentafsir idea-idea utama dalam karya seni yang

diperhatinya (keabstrakan tajuk). Di samping itu, latihan guru dalam bidang Pendidikan Seni juga tidak meningkatkan keupayaan guru untuk menentang kecenderungan membuat keputusan akhir tentang sesuatu idea dengan serta-merta tanpa memikirkan dan menimbangkan maklumat yang lain (penentangan penutupan "premature").

Dapatan ini adalah amat penting kerana keupayaan seseorang guru untuk menjalankan proses pengajaran dan pembelajaran yang berjaya bergantung kepada keupayaan guru tersebut menggunakan pengetahuannya yang sedia ada secara kreatif. Jika guru-guru tidak dapat menghasilkan idea-idea baru (keaslian), adalah sukar bagi guru untuk menyelesaikan pelbagai masalah yang dihadapi dalam proses pengajaran dan pembelajaran. Begitu juga jika guru tidak dapat mensintesis, menyusun pemikiran, mentafsir idea utama (keabstrakan tajuk) dalam catan pelajar dan terus membuat keputusan secara serta-merta tentang idea tersebut tanpa memikirkan maklumat-maklumat yang lain (penentangan penutupan "premature"), adalah sukar bagi guru untuk membuat penilaian yang tepat dan adil terhadap catan pelajar. Memandangkan hakikat bahawa tiada perbezaan kreativiti secara signifikan antara guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Terlatih dari segi keaslian, keabstrakan tajuk dan penentangan penutupan "premature", usaha perlu dilakukan untuk meningkatkan kreativiti guru Pendidikan Seni dari ketiga-tiga komponen kreativiti ini, kerana guru yang kreatif lebih memahami dan menggalakkan pemikiran kreatif pelajar (Lowenfeld dan Brittain 1975). Di samping itu, berdasarkan hasil kajian ini, kajian lanjut juga boleh dilakukan untuk menyelidik sama ada terdapat perbezaan kreativiti antara pelajar yang mengambil mata pelajaran pendidikan seni dan pelajar yang tidak mengambil mata pelajaran seni.

RUMUSAN

Kajian ini telah membandingkan kreativiti guru-guru Pendidikan Seni sekolah menengah di daerah Hulu Langat. Rumusan hasil kajian adalah seperti berikut:

1. Terdapat perbezaan yang signifikan dari segi kreativiti di antara kumpulan guru Pendidikan Seni Terlatih dan guru Pendidikan Seni Tidak Terlatih. Kumpulan guru Pendidikan Seni Terlatih adalah lebih kreatif secara signifikan daripada kumpulan guru Pendidikan Seni Tidak Terlatih.
2. Guru Pendidikan Seni Terlatih adalah lebih kreatif dari segi kelancaran dan penghuraian. Walau bagaimanapun, keputusan menunjukkan tiada perbezaan antara kedua-dua kumpulan guru tersebut dari segi keaslian, keabstrakan tajuk dan penentangan penutupan "premature".

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Ekonomi Negeri Kelantan dari Perspektif Analisis Shift-Share Wilayah

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Kata kunci: Analisis shift-share wilayah, subtempoh, perindustrian, perubahan struktur nasional

ABSTRAK

Dengan menggunakan rangka kerja analisis shift-share wilayah, kajian yang merangkumi tempoh 1980-95 yang dipecahkan kepada dua subtempoh ini bertujuan untuk mengkaji prestasi ekonomi negeri Kelantan berbanding ekonomi nasional. Data KDNK Kelantan menurut sektor-sektor utamanya, dikumpul dari sumber UPE dan UPEN Kelantan dan dinyatakan dalam sebutan benar dengan menggunakan deflator KDNK. Hasil kajian mendapati bahawa lokasi negeri ini kurang menarik pelabur, kemajuan perindustrian nasional membantu memajukan perindustrian Kelantan, dan kelebihannya dalam sektor utama juga terjejas oleh arus perubahan struktur nasional. Kajian ini mengemukakan beberapa cadangan dasar untuk memajukan negeri ini.

ABSTRACT

Using regional shift-share analysis the present study, covering the overall period of 1980-95 which is subdivided into two sub-periods, aims at analysing the performance of Kelantan's economy vis-a-vis national economy. The state GDP data according to its major sectors are collected from EPU and the state EPU which is expressed in its real value by using GDP deflator. The results show that to investors the state is unattractive locationally, good performance of national industrialisation stimulates that of the state, and its advantage in primary sector is erroded because of structural change at the national level. The study offers few policy recommendations.

PENGENALAN

Objektif pembangunan wilayah di Malaysia bertujuan untuk mengimbangi pembangunan antara wilayah-wilayah. Kelantan yang terletak di wilayah timur Semenanjung Malaysia, merupakan sebuah negeri yang paling rendah pendapatan per kapitanya. Tujuan utama kertas kajian ini ialah menerangkan pembangunan ekonomi negeri Kelantan berbanding ekonomi Malaysia dan menghuraikan faktor-faktor yang menyebabkan keadaan tersebut.

Dalam tahun 1995, sektor pertanian Kelantan mengeluarkan output sebanyak RM689 juta[1] dan merupakan penyumbang terbesar kepada KDNK negeri tersebut. Output sektor ini terus meningkat tahun demi tahun sejak tahun 1980[2] lagi tetapi dengan sumbangan kepada KDNK negeri yang semakin berkurangan. Sektor-sektor lain yang menunjukkan peningkatan sumbangan kepada KDNK Kelantan terdiri daripada sektor perkilangan dan sektor perdagangan.

Pergantungan yang kuat kepada sektor pertanian khususnya dan sektor utama amnya berlaku terutamanya di peringkat awal tempoh kajian. Dalam tahun 1980, sektor utama[3] menyumbang hampir satu perdua (43%) kepada KDNK negeri. Dalam tempoh 1980-95, kajian ini mendapati, ekonomi Kelantan telah mengalami proses kepelbagaian kegiatan. Dalam akhir

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[1] Kajian ini menggunakan Indeks Harga Pengeluar sebagai deflator yang diasaskan kepada tahun 1970.
[2] Tempoh kajian ialah antara 1980-95, ditentukan oleh kedapatan data.
[3] Definisi sektor-sektor menurut seperti yang digunakan oleh Rancangan Lima Tahun Malaysia, Unit Perancang Ekonomi, Malaysia.

tempoh kajian, tahun 1995, sumbangan sektor utama telah merosot kepada 20%. Proses kepelbagaian kegiatan ini dapat dikesan melalui perubahan struktur ekonomi negeri seperti yang ditunjukkan oleh Jadual 1.

Walau kepelbagaian kegiatan berlaku, dalam tahun 1995, sektor pertanian masih lagi menjadi penyumbang terbesar kepada KDNK. Berbanding dengan sumbangan sektor ini di peringkat nasional, Kelantan didapati masih kuat bergantung kepada kegiatan pertanian. Perkembangan sektor perkilangan pula menampakkan trend yang menggalakkan, menyumbang 16% pada tahun tersebut. Sumbangan sektor-sektor lain adalah seperti berikut: sektor perdagangan (14.1%), pengangkutan (9.7%), kewangan (7.2%) dan pembinaan (4.1%). Sektor perkhidmatan kerajaan pula memberikan sumbangan yang agak besar iaitu 23.2% manakala sektor perlombongan menyumbang hanya 0.2%.

Kertas kajian ini diatur sedemikian: Bahagian II menghuraikan ciri-ciri asas ekonomi Kelantan dari segi tahap kepelbagaian, pertumbuhan tahunan, pendapatan per kapita dan produktiviti buruh. Bahagian III menghuraikan rangka kerja teoretikal model shift-share wilayah yang akan digunakan dalam kajian ini dan pengumpulan data. Bahagian IV membincangkan hasil penemuan model tersebut disusuli dengan Bahagian V menyimpulkan perbincangan kertas kajian ini.

CIRI ASAS EKONOMI KELANTAN

Pemusatan Kegiatan Ekonomi Negeri-Negeri Terpilih

Jadual 2 membandingkan tahap kepelbagaian kegiatan ekonomi dengan menggunakan indeks pemusatan kegiatan Gini-Hirschman[4] bagi negeri-negeri terpilih. Indeks ini mengukur sejauh manakah kegiatan ekonomi sesebuah negeri terpusat kepada sebilangan kecil kegiatan atau

JADUAL 1
Struktur ekonomi Kelantan 1980-2000, (%)

Sektor	1980	1985	1990	1995	2000*
Pertanian	42.2	38.2	30.9	25.2	20.8
Perlombongan	0.8	0.8	0.8	0.6	0.4
Perkilangan	6.4	7.7	14.5	15.9	17.7
Pembinaan	4.5	4.9	3.6	4.1	4.4
Pengangkutan	8.6	8.7	9.0	9.7	10.6
Perdagangan	6.8	6.7	11.8	14.1	16.7
Kewangan	10.4	10.5	6.8	7.2	7.4
Perkhidmatan Kerajaan	20.3	22.6	22.6	23.2	22.0
Jumlah	100	100	100	100	100

Sumber: Dikira dari Jadual Apendiks dan data UPEN

JADUAL 2
Indeks pemusatan Gini-Hirschman

	1980	1985	1986	1988
Johor	0.4538	0.4170	0.4490	0.4535
Sarawak	0.4172	0.4281	0.4530	0.4373
Kelantan	0.4933	0.4698	0.4364	0.4334
Terengganu	0.5241	0.5241	0.6387	0.6367
Pahang	0.5049	0.4999	0.4889	0.4882
Malaysia	0.3871	0.3725	0.3782	0.3884

Sumber: Dikira dari data Rancangan Malaysia Lima Tahun, pelbagai tahun
Unit Perancang Ekonomi (EPU)

[4] Rumus Indeks Gini-Hirschman yang digunakan adalah seperti berikut: $\sqrt{[\sum(X_i/X)^2]}$

tersebar kepada pelbagai kegiatan. Dalam tempoh lima belas tahun 1980-95, indeks bagi negeri Kelantan menjadi semakin mengecil, tetapi lebih tinggi berbanding indeks nasional. Ini menunjukkan tahap kepelbagaian ekonomi Kelantan, walaupun semakin diperbaiki tetapi masih jauh daripada memuaskan dibandingkan dengan yang berlaku di negeri-negeri lain. Indeks Gini Kelantan pada tahun 1988 dibanding dengan indeks Gini Malaysia pada tahun 1980, menunjukkan tahap kepelbagaian ekonomi Kelantan pada tahun 1988 sama dengan tahap kepelbagaian ekonomi nasional pada lapan tahun sebelumnya. Berbanding dengan Johor dan Sarawak, tahap kepelbagaian ekonomi Kelantan terlalu jauh daripada memuaskan.

Kadar Pertumbuhan

Kelantan mengalami pertumbuhan ekonomi tahunan yang sederhana (Jadual 3). Dalam tempoh 1980-85, kadar pertumbuhan tahunan KDNKnya ialah 5.96%, kemudian merosot kepada 2.54% dalam tempoh 1985-90, dan meningkat kembali kepada 6.2% dalam tempoh

JADUAL 3
Kadar pertumbuhan tahunan, (%)

Tempoh	Kelantan	Malaysia
1980 – 1985	5.96	5.83
1985 – 1990	2.54	5.98
1990 – 1995	6.20	8.69
1980 – 1995	4.89	6.82
1996 – 2000	6.6	8.0
1991 – 2000	6.4	8.3

Sumber: Dikira dari Jadual 1

1990-95. Purata kadar pertumbuhan bagi tempoh 1980-95 adalah 4.8%. Kecuali dalam tempoh 1980-85, kedua-dua tempoh lima tahun yang lain, kadar pertumbuhan Kelantan adalah lebih rendah berbanding kadar yang dinikmati oleh ekonomi nasional.

Berdasarkan data KDNK tahunan yang dapat diperoleh, tempoh 1985-90 menyaksikan terdapat satu ketika yang menunjukkan KDNK negeri Kelantan mengecut, iaitu pada tahun 1986. Ini selaras dengan apa yang berlaku dalam ekonomi nasional yang juga mengecut kerana tekanan resesi negara-negara maju. Dalam tempoh 15 tahun antara 1980-95. KDNK Kelantan meningkat menjadi dua kali ganda, sedangkan ekonomi nasional menikmati pembesaran sebanyak 2.6 kali ganda.

Dalam tahun 1995, dengan menyumbang 2.3% kepada KDNK nasional, Kelantan menduduki tangga kedua terkebawah selepas Perlis. Perbandingan tanpa mengambil kira saiz penduduk seperti ini, walau bagaimanapun, adalah kurang tepat. Dengan mengambil KDNK per kapita negeri ini yang berjumlah RM1727, kajian ini mendapati Kelantan berada di anak tangga yang terkebawah sekali. Saiz pendapatan per kapita Kelantan adalah lebih kurang satu pertiga daripada saiz KDNK per kapita nasional yang berjumlah RM5815.4. Ini menunjukkan dengan pertumbuhan ekonomi yang perlahan tetapi pertumbuhan penduduk yang lebih pantas, ekonomi Kelantan telah tercicir dalam arus pembangunan ekonomi nasional.

Produktiviti Buruh

Produktiviti (output setiap orang pekerja) Kelantan didapati jauh ketinggalan ke belakang berbanding produktiviti nasional. Pada tahun 1980 Kelantan mempunyai indeks produktiviti buruh 4.57 sedangkan ekonomi nasional mempunyai 9.03. Walaupun Kelantan telah memperbaiki taraf produktivitinya, meningkat kepada 5.17 pada tahun 1990, kajian ini mendapati produktiviti nasional meningkat dengan kadar yang lebih pantas lagi, yakni kepada 13.27. Ini menjadikan jurang produktiviti Kelantan-Malaysia semakin melebar. Jika dalam tahun 1980, produktiviti Kelantan menyamai 0.5 produktiviti Malaysia, dalam tahun 1990 ia telah merosot menjadi 0.38. Gambaran produktiviti Kelantan-Malaysia bagi sektor-sektor ekonomi ditunjukkan dalam Jadual 4.

JADUAL 4
Produktiviti buruh Kelantan dan Malaysia 1980-2000

Tahun	Kelantan	Malaysia
1980	4.57	9.03
1990	5.18	11.27
1995	5.78	14.78
2000	6.70	18.94

Mengapakah keadaan seperti ini berlaku? Banyak faktor yang menyumbang kepada masalah ini. Kajian ini akan mengemukakan faktor-faktor yang dapat diterangkan dari perspektif analisis shift-share wilayah sahaja.

ANALISIS WILAYAH – SHIFT-SHARE

Negeri Kelantan jauh tercicir dalam arus pembangunan ekonomi nasional. Ia berlaku mungkin kerana barangan dan perkhidmatan yang dikeluarkan oleh negeri ini tidak berupaya merangsang pertumbuhan yang pantas, faktor yang dikategorikan sebagai "kesilapan" product-mix. Mungkin juga operasi pengeluaran di negeri ini kurang berdaya saing, faktor yang dikategorikan sebagai kelemahan daya saing. Jika kita menganggap bahawa kedua-dua perkara ini benar, penyelesaian logikal ialah menukar *product-mix* berdasarkan kepada sesuatu kriteria tertentu dan meningkatkan kecekapan operasi pengeluaran dengan menggunakan teknik pengeluaran yang lebih sesuai. Oleh kerana Kelantan merupakan sebuah negeri di dalam persekutuan Malaysia, kita merasakan kajian yang membandingkan prestasi ekonomi negeri ini dengan ekonomi nasional menggunakan analisis shift-share amat sesuai.

Buat pertama kali diperkenalkan oleh Dunn (1960)[5], teknik ini kemudian digunakan oleh Perloff (1960) yang mengkaji data-data guna tenaga dan pekerjaan. Brown (1969), Franklin dan Hughes (1973), Stevens dan Moore (1980), Andrikopoulos, Brox dan Carvalho (1990) telah menggunakan teknik yang sama untuk mengkaji data-data guna tenaga dan nilai-tambah wilayah, menghuraikan jurang perbezaan pertumbuhan antara wilayah. Franklin dan Hughes (1973) dan Stevens dan Moore (1980) telah menggunakan teknik ini untuk membuat unjuran dengan menggunakan data tahunan dua digit industri yang diambil dari Biro Statistik Buruh Amerika Syarikat. Dengan menggunakan teknik yang sama, Brown (1969) menggabungkan teknik ini dengan teknik ekonometrik untuk mengunjurkan guna tenaga. Beliau mengira koefisien ketaksamaan Theil untuk menentukan aras kecekapan ramalannya. Beliau mendapati model *super ingrown* adalah efisien. Wee dan Wong (1987) menggunakan kaedah ini untuk mengenal pasti alternatif pasaran eksport.

Model Shift-Share

Teknik ini merupakan salah satu daripada teknik-teknik yang amat popular dalam kajian wilayah. Kelebihan teknik ini kerana dua sebab: (1) Teknik ini mudah digunakan dan bergantung kepada data yang mudah diperoleh, menjadikan kajian ini cepat dilaksanakan dengan ketepatan yang boleh diterima. (2) Teknik ini belum lagi menerima kritikan dalam kajian empirik sehingga dapat menimbulkan kesangsian di kalangan pengamal. Oleh kerana teknik ini tidak mempunyai kelemahan yang serius, pengamal terus menggunakan teknik ini kerana kebaikan-kebaikan yang dinyatakan di atas.

Teknik ini akan memilih sebuah wilayah lain sebagai standard perbandingan. Perubahan struktur Kelantan akan dibandingkan dengan perubahan struktur wilayah standard ini. Dalam kajian ini wilayah standard yang dimaksudkan ialah ekonomi nasional. Kaedah ini dapat juga membandingkan prestasi subsektor-subsektor di dalam kedua-dua wilayah, mengenal pasti subsektor-subsektor di Kelantan yang tumbuh lebih pantas dan yang berkembang lebih perlahan, berbanding yang dialami oleh ekonomi nasional. Maklumat sedemikian sangat berguna dalam menerangkan perubahan struktur ekonomi Kelantan, yang mencorakkan senario pertumbuhan yang ada sekarang ini.

Kaedah ini memisahkan faktor-faktor yang menghasilkan perubahan dalam KDNK wilayah dengan mengenal pasti komponen-komponen perubahan tersebut. Hasil kajian ini akan dapat menerangkan dua peringkat maklumat, iaitu perihal pertumbuhan dan kemerosotan (a) sesebuah wilayah dalam ekonomi nasional dan (b) sesebuah industri dalam sesebuah wilayah. Komponen 'peralihan wilayah' menerangkan prestasi relatif wilayah tersebut dalam sesebuah industri. Peralihan wilayah (regional shift) berangka positif bermakna industri berkenaan menikmati kelebihan berbanding lokasi (locational comparative advantage) bagi wilayah tersebut dan sebaliknya pula bagi peralihan wilayah berangka negatif.

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[5] Beliau membentangkan hasil kajiannya di dalam satu mesyuarat Sains Wilayah di Amerika Syarikat, memperkenalkan kaedah ini untuk mengkaji secara sistematik data ekonomi wilayah.

Setiap komponen dalam persamaan peralihan (shift) menyediakan paras terjangka bagi output pada akhir tempoh, setiap paras output terhasil daripada kuasa-kuasa yang menghasilkan pertumbuhan atau kemerosotan sesebuah industri dalam wilayah tersebut dalam tempoh berkenaan. Jumlah paras terjangka dalam output ini merupakan jumlah output dalam sesebuah sektor pada penghujung tempoh.

Komponen-komponen dalam analisis shift-share ini dapat diterangkan seperti di dalam persamaan-persamaan berikut:

Share Nasional (National Share):

$$NS_i = q_i^0(Q^1/Q^0) \quad (1)$$

Industri-Mix (Industry Mix):

$$IM_I = q_i^0(Q_i^1/Q_i^0 - Q^1/Q^0) \quad (2)$$

Peralihan Wilayah (Regional Shift):

$$RS_i = q_i^0(q_i^1/q_i^0 - Q_i^1/Q_i^0) \quad (3)$$

q_i dan Q_i masing-masing menunjukkan output wilayah dan output nasional dalam sektor *i*; q dan Q adalah jumlah output wilayah dan nasional dalam semua sektor; dan *0* dan *1* merupakan tahun permulaan dan akhiran tempoh yang dikaji. Maka, secara definisi output sektor *i* mempunyai kaitan seperti dalam persamaan (4).

$$q_i = NS_i + IM_i + RS_I \quad (4)$$

Share wilayah atau *Regional share* dalam sektor *i* (atau regional proportion) ditakrifkan seperti dalam persamaan (5):

$$RP_i = q_i^0(Q_i^1/Q_i^0) = NS_i + IM_i \quad (5)$$

Sebutan yang terakhir ini menerangkan jumlah output terjangka dalam industri *i* dalam wilayah tersebut jika industri tersebut dapat berkembang di wilayah tersebut pada kadar yang sama dengan kadar yang dialami di peringkat nasional.

Data

Dalam melaksanakan kajian ini, kita memilih beberapa tempoh selang masa. Pemilihan selang masa ini begantung kepada data yang dapat kita peroleh dan pada tempoh masa yang kita fikirkan wajar dalam mengkaji kesan industri mix dan kesan peralihan wilayah. Selang masa kajian ini adalah seperti berikut: 1980-85, 1985-90, 1990-95 dan 1980-95.

Tahun asas bermakna tahun awalan, misalnya bagi selang masa 1980-85, tahun asas ialah tahun 1980 manakala bagi selang-masa 1985-90, 1990-95 dan 1980-95, tahun asas masing-masing ialah 1985, 1990 dan 1980. Subsektor *i* mewakili subsektor yang dikaji seperti subsektor Pertanian, Perlombongan, Perkilangan dan sebagainya.

Kajian ini menggunakan data-data KDNK (pada harga tetap 1978) Kelantan dan Malaysia seperti yang diterbitkan dalam pelbagai terbitan Rancangan Malaysia dan Kajian Semula Rancangan Malaysia. Data terkini KDNK ialah bagi tahun 1995 dan bagi kedua-dua ekonomi tersebut diperoleh dari sumber yang tidak diterbitkan oleh Unit Perancang Ekonomi, Jabatan Perdana Menteri. Data-data tersebut adalah seperti yang terlampir di bahagian Apendiks.

HASIL KAJIAN

Kajian ini mendapati bahawa dalam tempoh keseluruhan, 1980-95, Kelantan telah mengalami kesan peralihan wilayah yang negatif (Jadual 5 – Jadual 8), menunjukkan negeri ini memiliki kelemahan wilayah, berlaku dalam semua subtempoh kecuali subtempoh 1980-85. Nilai *RS* bagi subtempoh-subtempoh 1985-90, 1990-95 dan tempoh keseluruhan 1980-95 semuanya negatif dan masing-masing adalah –RM362.46 juta, –RM3356.26 juta dan –RM862.55 juta; manakala bagi subtempoh 1980-85 adalah positif, iaitu RM11.07 juta. Ini menunjukkan kelebihan wilayah yang dimiliki oleh negeri ini pada peringkat awal telah bertukar menjadi kelemahan pula pada peringkat akhir tempoh kajian.

Dalam tempoh keseluruhan ini juga, kajian ini mendapati nilai *regional proportion* (RP) lebih besar daripada nilai output pada tahun akhiran. Nilai *RP* (RM3598.55 juta) ini adalah nilai yang dicapai jika jumlah output terjangka di Kelantan berkembang pada kadar yang sama dengan kadar yang dialami di peringkat nasional. Ini menunjukkan pertumbuhan ekonomi Kelantan bergantung sepenuhnya kepada pertumbuhan nasional, sedangkan pengaruh wilayah menyumbang secara negatif. Akibat perkembangan ini,

JADUAL 5
Hasil analisis shift-share Kelantan-Malaysia, 1980-85 (RM juta - mengikut harga tahun 1978)

	1980-85				
	RP	RS	NS	NS*	IM
Pertanian	666.79	16.21	748.71	184.71	-81.92
Perlombongan	14.72	0.28	14.60	3.60	0.12
Perkilangan	109.35	27.65	114.17	28.17	-4.82
Pembinaan	88.52	-1.52	79.65	19.65	8.87
Pengangkutan	177.35	-22.35	152.66	37.66	24.68
Perdagangan	127.65	-8.65	120.80	29.80	6.85
Kewangan	196.49	-9.49	184.52	45.52	11.97
Perkhidmatan Kerajaan	321.06	81.94	359.75	88.75	-38.69
JUMLAH	1774.93	11.07	1774.87	437.87	0.06

Sumber: Dikira dari model shift-share

JADUAL 6
Hasil analisis shift-share Kelantan-Malaysia, 1985-90 (RM juta - mengikut harga tahun 1978)

	1985-90				
	RP	RS	NS	NS*	IM
Pertanian	840.68	-214.68	912.97	229.97	-72.29
Perlombongan	19.37	-3.37	20.05	5.05	-0.68
Perkilangan	257.43	36.57	183.13	46.13	74.30
Pembinaan	80.83	-7.83	116.29	29.29	-35.46
Pengangkutan	226.79	-44.79	207.19	52.19	19.60
Perdagangan	138.78	100.22	159.07	40.07	-20.29
Kewangan	278.35	-140.35	249.96	62.96	28.38
Perkhidmatan Kerajaan	388.53	68.47	538.69	135.69	-150.16
JUMLAH	2387.46	-362.46	2387.35	601.35	0.12

Sumber: Dikira dari model shift-share

JADUAL 7
Hasil analisis shift-share Kelantan-Malaysia, 1990-95 (RM juta - mengikut harga tahun 1978)

	1990-95				
	RP	RS	NS	NS*	IM
Pertanian	692.67	-3.67	949.39	323.39	-256.73
Perlombongan	18.44	-1.44	24.27	8.27	-5.83
Perkilangan	548.67	-113.67	445.88	151.88	102.79
Pembinaan	136.02	-24.02	110.71	37.71	25.31
Pengangkutan	301.30	-36.30	276.02	94.02	25.28
Perdagangan	395.38	-9.38	362.47	123.47	32.92
Kewangan	229.18	-32.18	209.29	71.29	19.89
Perkhidmatan Kerajaan	549.05	85.95	693.09	236.09	-144.04
JUMLAH	3071.26	-335.26	3071.12	1046.12	0.14

Sumber: Dikira dari model shift-share

JADUAL 8
Hasil analisis shift-share Kelantan-Malaysia, 1980-95 (RM juta - mengikut harga tahun 1978)

	1980-95				
	RP	RS	NS	NS*	IM
Pertanian	908.13	-219.13	1518.01	954.01	-609.87
Perlombongan	21.91	-4.91	29.61	18.61	-7.69
Perkilangan	383.45	51.55	231.47	145.47	151.98
Pembinaan	153.25	-41.25	161.49	101.49	-8.24
Pengangkutan	429.58	-164.58	309.52	194.52	120.06
Perdagangan	246.27	139.73	244.93	153.93	1.35
Kewangan	485.73	-288.73	374.12	235.12	111.61
Perkhidmatan Kerajaan	371.89	263.11	729.40	458.40	-357.51
JUMLAH	3598.55	-862.55	3598.54	2261.54	0.02

Sumber: Dikira dari model shift-share

negeri Kelantan telah kehilangan share wilayahnya sebanyak hampir 32%[6]. Jika negeri Kelantan dapat mengekalkan tahap persaingan wilayahnya, nilai output negeri ini pada tahun 1995 boleh mencapai hampir RM3600 juta (Jadual 8). Kajian ini mendapati bahawa peralihan wilayah yang positif dalam subtempoh 1980-85 pula tersangat kecil, iaitu lebih kurang 0.6% daripada output tahun 1985.

Analisis Setiap Komponen

Daya saing Kelantan sebagai sebuah wilayah dalam ekonomi nasional dapat diukur dengan komponen *RS*. Lajur ini menunjukkan peralihan wilayah, sama ada Kelantan mempunyai kelebihan wilayah (nilai positif) atau kelemahan wilayah (nilai negatif) berbanding ekonomi nasional. Ini dilakukan dengan membandingkan kadar pertumbuhan output sesebuah sektor yang berlaku di Kelantan dengan yang berlaku di peringkat nasional. Misalnya, sektor pertanian Kelantan yang telah berkembang dengan kadar yang lebih perlahan berbanding yang berlaku di peringkat nasional telah mengakibatkan negeri ini kehilangan share wilayah sebanyak RM219 juta atau 32%[7] daripada output sebenar yang dicapainya pada tahun 1995.

Dalam tempoh keseluruhan, kajian ini mendapati bahawa nilai peralihan wilayah adalah negatif dalam semua sektor, kecuali dalam sektor-sektor perkilangan, perdagangan dan perkhidmatan kerajaan; menandakan, kecuali tiga sektor yang dinyatakan ini, semua sektor di Kelantan mengalami kemerosotan share wilayahnya. Sektor yang mengalami kehilangan share wilayah yang terbesar ialah sektor kewangan (-146%) manakala sektor yang menikmati kelebihan terbesar dalam share wilayah ialah sektor perdagangan (+59%). Sektor pertanian juga mengalami kemerosotan share wilayah (-32%) sedangkan kelebihan share wilayah dalam sektor perkilangan adalah kecil (12%).

Subtempoh 1980-85 merupakan tempoh yang menunjukkan Kelantan mempunyai daya saing wilayah, *RS*-keseluruhannya positif dengan bilangan terbanyak sektor yang kompetitif. Subtempoh 1985-90 pula merupakan tempoh yang paling tidak kompetitif bukan dari segi bilangan sektor yang didapati tidak kompetitif tetapi dari segi nilai output yang hilang, terutamanya dalam sektor pertanian. Dalam subtempoh tersebut, nilai output yang hilang kerana ketumpulan daya saing wilayah lebih kurang 18% daripada output 1990, sektor pertanian sahaja kehilangan 34% daripada output pertanian 1990. Subtempoh 1990-95 boleh dikatakan tidak menunjukkan perubahan yang lebih baik daripada subtempoh sebelumnya, kehilangan output keseluruhan ialah 12%, tetapi sektor pertanian telah berjaya mengurangkan kelemahannya dengan merekodkan kehilangan output sebanyak 0.6%.

Nilai output Kelantan pada tahun 1995, jika negeri tersebut dapat mengekalkan share

[6] Kehilangan share wilayah dikira seperti berikut: $(RS_i)/q_i$, dan dikira daripada data dalam Jadual 5 – Jadual 8 dan Jadual Apendiks. Semua angka peratusan selanjutnya dikira berdasarkan kaedah ini.

[7] *op. cit.*

wilayahnya, ditunjukkan dalam lajur *RP*. Misalnya, jika sektor pertanian dapat mengekalkan share wilayahnya, outputnya pada tahun 1995 akan menjadi RM908 juta. Jika output setiap sektor di negeri Kelantan dibenarkan berkembang menyamai dengan kadar pertumbuhan KDNK nasional, *paras* nilai outputnya pada 1995 ditunjukkan seperti dalam lajur *NS*. Misalnya, jika sektor pertanian dibenarkan berkembang menyamai dengan kadar pertumbuhan KDNK nasional, nilai outputnya pada 1995 akan menjadi RM1518 juta.

Lajur *NS** pula menunjukkan *perubahan* dalam output sektoral jika ia diandaikan berkembang secepat kadar pertumbuhan KDNK nasional. Misalnya, output sektor pertanian akan meningkat sebanyak RM954 juta jika ia dibenarkan berkembang secepat kadar pertumbuhan KDNK nasional. Jika corak perubahan dalam *industry mix* (perubahan struktur) yang berlaku di peringkat nasional diandaikan berlaku di negeri Kelantan, output setiap sektor negeri ini pada tahun 1995 akan mengalami pertambahan (positif) atau pengurangan (negatif) sebanyak nilai yang terdapat dalam lajur *IM*. Misalnya, jika negeri Kelantan mengalami perubahan *industry mix* seperti yang berlaku di peringkat nasional, output pertanian negeri ini pada tahun 1995 akan berkurangan sebanyak RM610 juta. Misalnya, kelambatan pertumbuhan sektor pertanian Kelantan berbanding pertumbuhan sektor tersebut yang berlaku di peringkat nasional telah menyebabkan sektor tersebut kehilangan (share wilayah) output dan kelambatan sektor ini berkembang di peringkat nasional berbanding kadar pertumbuhan KDNK telah menyebabkan output sektor tersebut berkurangan. Kedua-dua kesan peralihan (total shift) ini telah menyebabkan output sektor pertanian berkurangan sebanyak RM829 juta dalam tempoh tersebut.

Analisis Sektor Pertanian dan Perkilangan

Sektor Pertanian

Output sektor pertanian telah berkembang daripada RM564 juta dalam tahun 1980 kepada RM689 juta pada tahun 1995, iaitu kadar pertumbuhan tahunan 1.3%; sedangkan ekonomi nasional mengalami pertumbuhan pertanian yang lebih pantas, 3.2%. Jika negeri Kelantan dapat mengekalkan kadar pertumbuhan pertanian seperti kadar yang berlaku di peringkat nasional, output pertanian negeri tersebut boleh mencapai RM908 juta.

Kelemahan pertumbuhan sektor ini di negeri Kelantan berbanding prestasinya di peringkat nasional telah menyebabkan negeri ini kehilangan share wilayahnya sebanyak RM219 juta atau 32% daripada nilai output yang dicapainya pada tahun 1995. Kehilangan share wilayah ini berlaku terutamanya dalam sub tempoh 1985-90 (kehilangan share wilayah sebanyak RM215 juta atau 34% daripada output pertanian 1990), sedangkan dalam subtempoh sebelumnya, 1980-85, negeri ini mempunyai daya saing dalam pertanian dengan kesan wilayah yang positif. Subtempoh seterusnya, 1990-95, walaupun sektor ini masih belum mempunyai daya saing wilayah namun ia telah berupaya memperbaiki prestasinya dengan mengurangkan kehilangan share wilayahnya kepada sebanyak RM3.6 juta atau 0.6% daripada output pertanian 1995.

Bukan sahaja prestasi pertanian Kelantan lebih rendah daripada prestasi sektor ini di peringkat nasional, malah prestasi sektor ini di peringkat nasional juga adalah lebih rendah daripada prestasi ekonomi keseluruhannya. Jika sektor pertanian Kelantan dibenarkan berkembang secepat perkembangan KDNK nasional yang jauh lebih pantas itu, output pertanian Kelantan pada tahun 1995 boleh mencecah *paras* RM1518 juta, iaitu *pertambahan* sebanyak RM954 juta. Kehilangan output kerana kadar pertumbuhan pertanian Kelantan yang lebih rendah dengan kadar pertumbuhan KDNK berlaku dalam semua subtempoh.

Kadar pertumbuhan yang berbeza di antara sektor-sektor telah menghasilkan perubahan *industry mix* atau perubahan struktur. Dengan mengandaikan Kelantan mengalami perubahan *industry mix* yang serupa dengan yang telah berlaku di peringkat nasional, output pertanian akan berkurangan sebanyak RM610 juta. Perubahan *industry mix* yang tidak menyebelahi pertanian yang paling besar telah berlaku pada subtempoh 1990-95, dan ini telah mengurangkan output pertanian Kelantan sebanyak RM256 juta.

Dalam tempoh 1980-95, jumlah output pertanian gagal berkembang sebanyak RM829 juta kerana kesan negatif kedua-dua komponen: komponen *peralihan wilayah* (output pertanian di Kelantan kurang daya saing) dan komponen *industry mix* atau peralihan struktur (output pertanian di peringkat nasional berkembang

lebih perlahan daripada pertum-buhan KDNK nasional). Fenomena ini amat ketara sekali dalam dua subtempoh yang terakhir, iaitu 1985-90 dan 1990-95. Jika dalam subtempoh 1985-90 kesan peralihan wilayah mengatasi kesan *industry mix*, dalam sub-tempoh 1990-95 pula sebaliknya berlaku, kesan *industry mix* mengatasi kesan peralihan wilayah, dalam menggagalkan perkembangan output pertanian. Implikasi dari perkembangan ini ialah jika dalam subtempoh 1985-90 kegagalan output pertanian Kelantan lebih berpunca daripada kurangnya daya saing negeri ini dalam pertanian; dalam subtempoh seterusnya ia lebih berpunca daripada perubahan struktur yang deras di peringkat nasional yang tidak menyebelahi sektor pertanian. Dalam subtempoh awal pula, 1980-85, kajian ini mendapati bahawa kelebihan daya saing pertanian Kelantan adalah terlalu kecil sehinggakan perubahan struktur yang berlaku di peringkat nasional dapat membatalkan kelebihan ini.

Sektor Perkilangan

Output sektor perkilangan telah berkembang daripada RM86 juta dalam tahun 1980 kepada RM435 juta pada tahun 1995, iaitu kadar pertumbuhan tahunan 11.43%; sedangkan ekonomi nasional mengalami pertumbuhan perkilangan yang perlahan sedikit, 10.5%. Jika negeri Kelantan mengekalkan kadar pertumbuhan perkilangan seperti kadar yang berlaku di peringkat nasional, output perkilangan negeri tersebut mencapai RM383 juta.

Kelebihan pertumbuhan sektor ini di negeri Kelantan berbanding prestasinya di peringkat nasional telah menyebabkan negeri ini meningkatkan share wilayahnya sebanyak RM52 juta atau 12% daripada nilai output yang dicapainya pada tahun 1995. Peningkatan share wilayah ini berlaku hanya dalam dua subtempoh yang awal sahaja, sedangkan subtempoh yang terakhir ia telah bertukar menjadi kelemahan wilayah. Dalam subtempoh 1980-85 kelebihan peralihan wilayah adalah sebanyak RM27 juta atau 19% daripada output perkilangan 1985, manakala dalam subtempoh 1985-90, sebanyak RM36 juta atau 12% daripada output perkilangan 1990. Subtempoh seterusnya, 1990-95, sektor ini telah kehilangan daya saing wilayahnya dengan kesan peralihan wilayah yang negatif –RM113 juta atau 26% daripada output perkilangan 1995.

Bukan sahaja prestasi perkilangan Kelantan lebih baik daripada prestasi sektor ini di peringkat nasional, malah prestasi sektor ini di peringkat nasional juga adalah lebih baik daripada prestasi ekonomi keseluruhannya. Jika sektor perkilangan Kelantan dibenarkan berkembang secepat perkembangan KDNK nasional yang sedikit perlahan itu, output perkilangan Kelantan pada tahun 1995 boleh mencecah *paras* RM231juta, iaitu *pengurangan* sebanyak RM214 juta. Kelebihan output kerana kadar pertumbuhan perkilangan Kelantan yang lebih tinggi dengan kadar pertumbuhan KDNK berlaku dalam dua subtempoh yang terakhir.

Kadar pertumbuhan yang berbeza di antara sektor-sektor telah menghasilkan perubahan *industry mix* atau perubahan struktur. Dengan mengandaikan Kelantan mengalami perubahan *industry mix* yang serupa dengan yang telah berlaku di peringkat nasional, output perkilangan akan meningkat sebanyak RM152 juta. Perubahan *industry mix* yang menyebelahi perkilangan telah berlaku pada subtempoh 1990-95, dan ini telah menyebabkan output perkilangan meningkat sebanyak RM102 juta.

Dalam tempoh 1980-95, peningkatan output perkilangan RM203 juta lebih disebabkan oleh kesan positif *industry mix* atau peralihan struktur (output perkilangan di peringkat nasional berkembang lebih perlahan daripada pertum-buhan KDNK nasional) berbanding kesan positif *peralihan wilayah* (output perkilangan di Kelantan lebih berdaya saing). Iaitu, tiga perempat daripada peningkatan output perkilangan di Kelantan disebabkan oleh perubahan struktur di peringkat nasional manakala kelebihan wilayah menyumbangkan bakinya. Analisis kedua-dua komponen ini menurut subtempoh mempamer hasil yang menarik: subtempoh 1980-85 menyaksikan Kelantan sebagai lokasi perkilangan yang menarik sehingga dapat mengatasi kesan negatif perubahan struktur di peringkat nasional, subtempoh 1985-90 pula telah menawarkan perkembangan yang paling baik apabila pengekalan daya saing lokasi diperkukuh dengan perubahan struktur yang sihat di peringkat nasional, dan akhir sekali subtempoh 1990-95 menyaksikan daya saing lokasi Kelantan begitu teruk menurun sehingga membatalkan perubahan struktur positif di peringkat nasional. Apa yang dapat dirumuskan dari perkembangan ini ialah dalam tempoh 15 tahun ini sedangkan perubahan struktur yang berlaku di peringkat nasional sangat menggalakkan kegiatan

perkilangan keadaan yang sebaliknya pula berlaku di peringkat negeri dengan negeri ini menyaksikan kehilangan daya saing lokasinya.

RUMUSAN DAN DASAR

Analisis shift-share yang kita bincangkan di bahagian yang lalu mengkaji sama ada Kelantan mempunyai kelebihan lokasi atau kelemahan lokasi dalam proses pertumbuhan ekonominya bagi tempoh 1980-95. Penentuan sama ada negeri ini mempunyai kelebihan atau kelemahan lokasi dibuat dengan membandingkan Kelantan dengan ekonomi nasional. Maka sebagai kajian perbandingan, apabila kajian ini mendapati Kelantan mempunyai kelemahan lokasi bukanlah bermakna kelemahan lokasi secara mutlak tetapi secara bandingan. Kelemahan lokasi ini, antara lain disebabkan oleh faktor-faktor berikut:-

(1) Kelantan mempunyai kemudahan infrastruktur yang sangat terbatas. Negeri ini tidak mempunyai pelabuhan. Pelabuhan Kuantan dan Pelabuhan Kemaman telah disediakan bagi memberi khidmat kepada pedagang-pedagang yang beroperasi di koridor pantai timur. Begitupun, kedua-dua pelabuhan ini merupakan pelabuhan yang khusus dan tidak mampu mengendalikan komoditi-komoditi tertentu. Hanya baru-baru ini sahaja Kelantan disediakan dengan pelabuhan darat di Kuala Krai untuk menyokong kegiatan pengeksportan melalui laluan kereta api. Misalnya, pengimportan dan pengeksportan bahan-bahan tekstil dari kilang di Pengkalan Chepa terpaksa menggunakan perkidmatan pengangkutan darat jalan raya untuk dibawa ke pelabuhan Pulau Pinang.

(2) Kelantan tidak mempunyai jaringan jalan raya yang mencukupi, walaupun ia merupakan satu-satunya model pengangkutan yang terpenting kepada nadi pembangunan ekonomi negeri ini. Jalan raya di kawasan estet perindustrian Pengkalan Chepa tidak disenggara dengan baik dan tidak mempunyai lampu jalan. Ini menjadikan estet perindustrian negeri ini kurang menarik. Kekurangan kemudahan ini telah meningkatkan kos pengilangan. Pengilang di Kelantan mengakui bahawa kelebihan kos buruh yang murah tidak dapat dinikmati sepenuhnya kerana kos pengangkutan yang terlalu tinggi boleh mengakibatkan kesan bersih dari kedua-dua elemen kos ini tidak memihak kepada Kelantan sebagai lokasi yang menarik.

(3) Tambahan pula, Kelantan tidak mempunyai perkhidmatan pengendalian kargo udara. Kebanyakan pengendalian kargo dilakukan melalui jalan raya. Oleh kerana tiada kemudahan pelabuhan dan kemudahan kargo udara, negeri ini tidak memenuhi syarat untuk membina estet perindustrian perdagangan bebas cukai (*free trade zone*, FTZ). Walau bagaimanapun, terdapat beberapa kilang di Pengkalan Cepa yang diberikan status Pengilang Berlesen (*Licensed Manufacturing Warehouses*, LMW) yang membebaskan mereka dari cukai import dan eksport terhadap bahan dan barangan yang diperdagangkan.

(4) Bekalan air yang cukup dengan kualiti yang boleh diterima oleh para pengilang merupakan prasyarat kepada sesebuah program perindustrian. Kilang-kilang yang bergantung kepada air, seperti kilang makanan dan minuman, kilang kimia dan kilang tekstil, misalnya, sangat sensitif kepada kemudahan ini. Kilang tekstil dyeing, misalnya, memerlukan kualiti air yang tinggi untuk mendapatkan warna celupan yang diingini. Kilang minuman ringan di Pengkalan Chepa yang sepatutnya boleh mengilang air minuman, kini terpaksa berpuas hati dengan melakukan kegiatan sebagai stokis sahaja. Ini berlaku kerana bekalan dan kualiti air yang ada di negeri Kelantan jauh daripada memuaskan.

(5) Kelantan mempunyai simpanan gas asli yang banyak di pesisir pantainya. Gas asli mempunyai potensi nilai komersil yang amat berharga dan merupakan hanya satu-satunya jalan pintas dan harapan yang ada untuk mengubah landskap ekonomi negeri ini. Oleh kerana negeri ini tidak mempunyai kemudahan asas untuk menyalurkan gas tersebut ke pantai, beberapa kemudahan asas telahpun dirancang untuk menyalurkan gas asli tersebut ke Pantai Senok, yang seterusnya dapat memajukan perindustrian petrokimia khususnya dan industri-industri lain amnya di negeri ini.

(6) Industri di negeri Kelantan lebih berintensifkan buruh berbanding yang terdapat di pantai barat Semenanjung Malaysia. Dasar negara dalam peletakan industri, walaupun bersesuaian dengan matlamat perancangan nasional tetapi memberi kesan yang tidak diingini dalam perancangan wilayah. Dasar yang menempatkan industri berintensif modal di pantai barat semenanjung dan industri berintensif buruh di pantai timur semenanjung telah menetapkan syarat bahawa penempatan kilang di koridor pantai barat hanya jika nisbah

modal-buruhnya melebihi RM55,000, jika kurang daripada jumlah itu kilang akan ditempatkan di koridor pantai timur.

(7) Dasar peletakan semula industri ini boleh kita fahami – pantai barat semenanjung yang kekurangan buruh mestilah menggalakkan operasi yang berintensifkan modal dan sebaliknya pantai timur semenanjung yang mempunyai kelebihan buruh secara relatif mestilah menggalakkan operasi yang berintensifkan buruh. Kelantan yang berada di pantai timur dan yang mempunyai ramai buruh secara relatif berserta dengan harganya yang lebih murah, tentu akan menarik kegiatan perkilangan yang lebih berintensifkan buruh. Keadaan seperti ini sedang berlaku dan natijah daripadanya ialah industri negeri Kelantan secara bandingan lebih berintensifkan buruh, dan seterusnya mempunyai produktiviti buruh yang rendah. Walau bagaimanapun, dasar ini perlulah dilaksanakan dengan bijaksana agar ia tidak bercanggah dengan dasar pembangunan wilayah.

(8) Kelantan kurang dapat meyakinkan para pelabur bahawa negeri ini dapat menawarkan perkhidmatan sokongan yang cekap dan memuaskan. Kerenah birokrasi yang meyulitkan hasil daripada gangguan pentadbiran dan politik yang terdapat dalam jentera pentadbiran menjadikan banyak program yang boleh merangsang pembangunan tidak dapat dilaksanakan.

(9) Kelantan menawarkan harga tanah perindustrian yang secara bandingan lebih murah (harga tanah perindustrian di Pengkalan Chepa ialah RM4.50 sekaki persegi atau RM45 semeter persegi). Walau bagaimanapun, negeri ini sudah tidak mempunyai kawasan perindustrian yang masih kosong, namun ia masih cuba memajukan Kelantan sebagai destinasi perindustrian. Kawasan perindustrian baru telah dicadangkan, tetapi belum berhasil diwujudkan kerana kekurangan tanah milik kerajaan yang sesuai ditambah dengan birokrasi yang menyulitkan bagi mendapatkan tanah persendirian. Bakal-bakal pengilang, pada umumnya, tidak tertarik dengan lokasi kilang yang berada di luar kawasan perindustrian kerana ketiadaan infrastruktur yang bersepadu yang dicadangkan kepada mereka.

Dasar pembangunan ekonomi negeri Kelantan haruslah dinilai dalam konteks pembangunan wilayah. Dalam kaitan ini, pembanguan ekonomi negeri ini haruslah dirancang agar ia tidak tertinggal jauh dari arus perdana pembangunan ekonomi nasional dengan memastikan sumber-sumber keluaran negeri digunakan secara cekap. Untuk mencapai dasar pembangunan ini strategi-strategi yang boleh dicadangkan ialah:

(1) Mempergiat usaha memajukan sektor perkilangan selaras dengan kerancakan pembangunan perkilangan di peringkat nasional. Ini dapat dilakukan dengan mengenal pasti sektor-sektor strategik (niche) yang mempunyai rantaian yang kuat dengan sektor-sektor lain. Kajian awal mendapati kegiatan-kegiatan perkilangan berasaskan kayu dan barangan kayu, petrokimia dan barangan kimia merupakan sektor-sektor strategik. Selaras dengan dasar ini kerajaan negeri haruslah meningkatkan produktiviti buruh dengan memperbaiki tahap pendidikan dan latihan dan menggunakan teknik pengeluaran berintensifkan modal dan berteknologi tinggi.

(2) Menjadikan Kelantan sebagai satu destinasi pelaburan yang menarik. Ini dapat dilakukan dengan memperbaiki prasarana fizikal, termasuk meningkatkan taraf jalan-jalan raya, membekalkan kuantiti dan kualiti air yang boleh diterima oleh para pengilang, menaikkan taraf lapangan terbang Kota Bahru kepada taraf antarabangsa agar ia dapat mengendalikan kargo secara lebih berkesan, dan menyediakan Zon Perdagangan Bebas.

(3) Menggiatkan sektor utama dengan mengekal dan memulihkan kelebihan bandingan yang ia miliki dalam kegiatan sektor utama (primary), khususnya dalam sektor-sektor pertanian dan penternakan. Ini dapat dilakukan dengan mengamalkan teknik pengeluaran moden dan komersial dalam kedua-dua sektor tersebut. Sektor tersebut harus mengubah komposisi produk pertanian dengan mengamalkan pendekatan yang lebih komersial dan menjadikan negeri Kelantan sebagai "Jelapang Makanan" dengan menggiatkan usaha pertanian dan penternakan yang dapat menambah bekalan makanan.

(4) Meningkatkan kemudahan sosial dengan meningkatkan peruntukan perbelanjaan yang lebih besar ke arah penyediaan perkhidmatan sosial yang setanding dengan negeri-negeri lain.

Pembangunan ekonomi yang dinikmati dalam dekad-dekad yang lalu adalah hasil daripada kerjasama kerajaan-kerajaan negeri dan pusat dalam menggubal dan melaksana program-

program pembangunan. Galakan yang disediakan telah berjaya merangsang sektor swasta terlibat sama dalam memajukan ekonomi negeri. Pembangunan ekonomi negeri Kelantan pada masa akan datang haruslah berteraskan meningkatkan kerjasama yang telah sedia terjalin agar ketidakseimbangan pembangunan ekonomi negeri ini dalam pembangunan nasional dapat ditangani dengan baik.

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APENDIKS

Keluaran Dalam Negara Kasar (KDNK) Kelantan dan Malaysia 1980 - 2000
(RM juta - mengikut harga tahun 1978)

	Kelantan					Malaysia				
Sektor	1980	1985	1990	1995	2000*	1980	1985	1990	1995	2020*
Pertanian	564	683	626	689	783	10189	12046	14827	16406	17664
Perlombongan	11	15	16	17	15	4487	6006	7757	8938	7949
Perkilangan	86	137	294	435	666	8932	11357	21340	39825	63589
Pembinaan	60	87	73	112	166	2066	3048	2832	5277	8302
Pengangkutan	115	155	182	265	399	3108	4793	7013	11610	18370
Perdagangan	91	119	239	386	629	5383	7551	8806	14568	21549
Kewangan	139	187	138	197	279	3687	5212	7758	12884	20136
Perkhidmatan Kerajaan	271	403	457	635	828	7876	9331	8996	10808	19077
Jumlah	1337	1786	2025	2736	3765	44702	59344	79329	120316	176635

Sumber : Rancangan Malaysia Lima Tahun, Pelbagai Tahun Unit Perancang Ekonomi (EPU)
Nota : * Anggaran oleh EPU

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Predictability of ASEAN-5 Exchange Rates in the Post-Crisis Era

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Keywords: Exchange rate, depreciation, ARIMA, ARFIMA, forecasting

ABSTRAK

Lima mata wang ASEAN telah diselidiki demi menentukan sama ada pertukaran wang asing negara tersebut selepas krisis kewangan lebih tepat diramal oleh dolar US ataupun yen Jepun. Keputusan kajian ini mencadangkan kesemua pertukaran asing sebelum berlakunya Krisis Kewangan 1997/1998 lebih tepat diramal oleh mata wang dolar US. Mata wang Singapura selepas krisis lebih tepat diramal oleh dolar US, sementara mata wang ASEAN yang lain lebih tepat diramal oleh yen Jepun.

ABSTRACT

Five ASEAN currencies are investigated in an attempt to determine whether the post-crisis ASEAN exchange rates are more predictable by the US dollar or Japanese yen. Results suggest that prior to the 1997/1998 Financial Crisis, all exchange rates were better predicted by the US dollar as the base currency. The post-crisis Singapore exchange rate continues to be better predicted in US dollar. On the other hand, Japanese yen better predicted other post-crisis ASEAN exchange rates.

INTRODUCTION

Exchange rates play an important role in the international trade because they allow us to compare prices of goods and services produced in different countries. One of the characteristics of exchange rate in the post-Bretton Woods era is that it tends to be more volatile than the macroeconomic (fundamental) variables. The fluctuations in exchange rates due to the changes in the market fundamentals and market expectations have damaging effect on less developed countries (LDCs) trade flows (Ian and Amusa 2002; Law and Tan 2000; Arize *et al.* 2000). These fluctuations have crucial impact on decisions of policy-makers, traders, speculators, households and firms. Hence, it is important to forecast the future exchange rates with some accuracy. Unfortunately, exchange rates are difficult to forecast with any precision and empirical evidence has so far proven illusive (Meese and Rogoff 1983a,b; Berkowitz and Giorgianni 1997). This is simply because economic factors that affect exchange rates through a variety of channels are complex and measurements are either costly or problematic in nature (Carbaugh 2000).

In the past decades, many researchers who seek to predict exchange rates by econometric techniques have faced the same problem: while the results help to explain the past movements of exchange rates, the number of explanatory variables introduced on the right-hand side of the equations make them difficult to use for projection (Six 1989). To overcome this difficulty, various attempts had been made by employing advanced time-series analysis to gain further insights into the properties of exchange rate series. We note that, to this date, there is no clear superiority of time series analysis over other econometric analysis or vice-versa[1].

[1] Earlier work of Wallis (1982), Lupoletti and Webb (1986), Litterman (1986), Keller (1989), Montogomery *et al.* (1990), Brooks (1997), Berkowitz and Giorgianni (1997), Palma and Chan (1997), Fildes *et al.* (1998) and others has demonstrated the superiority of (linear) time series model over other econometric models in terms of their predictability. However, recent empirical evidence shows mixed conclusion. For instance, Najand and Bond (2000), and Darbelly and Slama (2000), among others, suggest that advanced econometric models are able to outperform linear time series models. Nevertheless, Sarno (2000), Baum *et al.* (2001), Clement and Smith (2001) and others using nonlinear frameworks have rekindled the usefulness of time series analysis.

In this study, we dealt with the forecasting of the exchanges rates by employing the ARIMA model since ARIMA modelling is deemed one of the most powerful approaches to the solution of many forecasting problems.[2] Besides utilising the point forecasts, we also generate interval forecasts of ARIMA model, which are often neglected in comparing forecast performance (Mélard and Pasteels 2000). The seminal paper by Palma and Chan (1997) shows that ARFIMA model can produce predictions that are more efficient and reliable. For this reason, this paper also attempted to fit ARFIMA to our exchange rate of the ASEAN-5 countries series.

The remainder of this paper is organized as follows. The next section briefly explains the exchange rate system of the ASEAN-5. This is followed by brief descriptions of the data and methodology employed in our analysis of the exchange rate time series. Results and discussions are presented before we conclude in the final section.

EXCHANGE RATE SYSTEM IN ASEAN-5

In this study we attempt to model the currencies of five neighbouring ASEAN countries – Singapore, Malaysia, Thailand, Indonesia and the Philippines. The ASEAN-5 can be classified into two broad categories according to the IMF's classification. The first group of countries, namely Singapore, Malaysia and Thailand are classified to have exchange rates pegged to a basket of currencies or to a single currency. The second group, namely, Indonesia and the Philippines follow a managed float during the period of investigation. However, our data revealed that Indonesia pursued a mixed policy of pegging against the US dollar. The time plot of the rupiah against the US dollar displays the RP/USD rate is ladder-like and has an upward trend and with three large devaluations in 1978, 1983 and 1986. The exchange rates of Singapore, Malaysia and Thailand appear quite stable prior the 1997 financial crisis. After two large devaluations in 1981 and 1984, the Thais baht was pegged to US dollar and fluctuates narrowly within a small range. The Singapore dollar appears to be most stable among the five currencies. The Monetary Authority of Singapore (MAS) frequently intervenes the exchange rate to keep the Singapore dollar within a range determined by a basket of currencies set on a horded weighted basis.

In the midst of 1997, the declaration of insolvency of various financial institutions in Thailand followed by the failure of a large Korean conglomerate, South Korea together with 4 ASEAN countries, namely Malaysia, Indonesia, Thailand and the Philippines were in trouble (Dunn and Mutti 2000). Currencies of these countries plunged to its record low. For instance, Indonesian rupiah was more than 80 percent down against the U. S. Dollar, and the currencies of Thailand, South Korea, Malaysia and the Philippines all dived by 35 to 50 percent (Carbaugh 2000). However, the Singapore dollar appears to be largely unaffected by the crisis. To mitigate the sharp depreciation of exchange rate, Malaysia choose to fix the ringgit at RM3.80 to USD1 on 2 September 1998, while other ASEAN countries maintain their exchange rate regime as before.

DATA DESCRIPTION

The exchange rate series considered in the present study are Malaysian ringgit (RM), Indonesian rupiah (RP), Thai baht (BAHT), Philippines peso (PESO) and Singapore dollar (SD), all denominated in US dollar (USD) as well as the Japanese yen (YEN). It is well known that both the US and Japan are the two largest ASEAN trading partners. Each series, consists of 114 quarterly observations running from 1971: Q1 to 1999: Q2, is divided into two portions for the purpose of this study. The first 106 observations beginning in 1971: Q1 and ended in 1997: Q2 (before Asian Financial Crisis) are used to fit the model, while the remaining observations from 1997: Q3 to 1999: Q2 (post-crisis period) are kept for the out-sample forecasts. Our quarterly exchange rate data are averages of the underlying monthly data. In this study, we examine the predictive power of our model during the post-crisis period. We viewed a good model as model that can produce an accurate forecast. It is worth pointing out here that the presence of a break in the trend (due the crisis) during the forecasting period would

[2] For instance, the development of automatic ARIMA modeling expert system by Mélard and Pasteels (2000) certainly reflects the usefulness of ARIMA models.

make the prediction exercise more difficult. Similar view is found in García-Ferrer *et al.* (1997).

METHODOLOGY

The process of time series modeling involves transformation of data in order to achieve stationarity, followed by identification of appropriate models, estimation of parameters, model checking and finally forecasting. Generally, a univariate time series could be expressed in the Autoregressive Integrated Moving Average, ARIMA (p, d, q) specification (see for example Brockwell and Davis 1996, 178 – 200):

$$(1 - \phi_1 B^1 - \phi_2 B^2 - \ldots - \phi_p B^p)\ (1 - B)^d Y_t = (1 + \theta_1 B^1 + \theta_2 B^2 + \ldots + \theta_q B^q)\mu_t \qquad (1)$$

where

Y_t = observations at time t; $t = 1, 2, \ldots, T$
d = number of differencing performed.
ϕ_i = autoregressive parameters to be estimated; $i = 1, 2, \ldots, p$.
θ_i = moving average parameters to be estimated; $i = 1, 2, \ldots, q$.
$B^j Y_t = Y_{t-j}$ and $\mu_t \sim$ iid $(0, \sigma^2)$.

The process as defined in (1) is a weakly stationary process. A weakly stationary process is a process with constant mean and covariance. If a non-stationary series is transformed to a stationary series by using classical decomposition approach, rather than method of differencing, we have Autoregressive Moving Average, ARMA (p, q) model, i.e., $d = 0$ in equation (1). For non-integer d, (1) becomes fractionally intergrated autoregressive moving average, ARFIMA model. We employed 'Iterative Time Series Modeling (*ITSM*)' (Brockwell *et al.* 1996) to estimate the model.[3] For more detailed on these models and their important characteristic, the readers are referred to Brockwell and Davis (1996).

We have fitted 6 to 12 tentative models to each set of data. Various methods, which are available in *ITSM*, had been employed to check the appropriateness of the specified models.[4] The out-sample forecasting performance of the appropriate models for each data set is then studied using root mean squared percentage error (RMSPE), mean absolute error (MAE) and mean absolute percentage error (MAPE). A best-fitted model was then selected using the minimum MAPE criterion.[5] Finally, the performance of models for exchange rates denominated in US dollar was compared with models of the corresponding rates denominated in Japanese yen.

RESULTS AND DISCUSSIONS

Table 1 presents the empirical results of the best fitting model for each of the transformed zero-mean stationary foreign exchange rate series. These models have passed through a battery of diagnostic tests and thus are appropriate for the forecasting purpose of this study.[6] These models are utilized to generate eight out-of-sample quarterly exchange rate values (1997: Q3 to 1999: Q2).

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[3] Briefly, the *ITSM* estimation procedures involved (1) the transformation of non-stationary series into stationary series via differencing or variance decomposition; (2) the estimation of autoregressive or/and moving average parameters; (3) diagnostic checking; and (4) forecasting. *ITSM* allows us to model the transformed series for the purpose of forecasting the original series.

[4] They include the examination of ACF and PACF of residuals, Ljung-Box (1978) Q-statistic, McLeod-Li (1983) Q-statistic, Turning Point Test, Difference-Sign Test and Rank Test. Only models that have passed all these diagnostic tests are kept for forecasting.

[5] We used MAPE criterion instead of other criteria like FPE, BIC and AICC — which are also available in *ITSM* — for model selection for several reasons. FPE or Final Prediction Error criterion is asymptotically inconsistent because there remains a non-zero probability of overestimating the order of a model as the sample size grows indefinitely large (Akaike 1970; Beveridge and Oickle 1994). Bayesian Information Criterion or BIC, although is consistent, is found to be not asymptotically efficient (Hurvich and Tsai 1989; Brockwell and Davis 1996). On the other hand, the biased-corrected Akaike's Information criterion, AICC, while having a more extreme penalty to counteract the tendency of overfitting, as well as the property of asymptotically efficient, it was noted (Lalang *et al.* 1997; Shitan and Liew 2000) that the minimum AICC model does not have to be the best model in term of forecast accuracy. In addition, Liew and Shitan (2000) had found empirical evidence to suggest that minimum AICC model picks up the *true* model for only 62.63% of the time. Nevertheless, the most fatal deficiency in these criteria is that they are not suitable for inter-series comparison — the main purpose of this study.

[6] Results are not reported here but are available upon request from authors.

TABLE 1
Best fitting model for each foreign exchange rate (1971: Q1 – 1997: Q2)

F. E. Rate	Model[a]	Equation[b]	var (μ_t)[c]
RM/USD	ARIMA (0,2,0)	$RM_t = RM_{t-2} + \mu_t$	1.000
RP/USD	ARIMA (0,2,1)	$RP_t = RP_{t-2} + \mu_t - 0.99\mu_{t-1}$	3396
BAHT/USD	ARIMA (0,1,0)	$BAHT_t = BAHT_{t-1} + \mu_t$	0.249
PESO/USD	ARIMA (0,1,0)	$PESO_t = PESO_{t-1} + \mu_t$	0.640
SD/USD	ARFIMA (6, 0.2105, 0)	$SD_t = 0.756SD_{t-1} + 0.046SD_{t-2} - 0.003SD_{t-3} + 0.045SD_{t-4} + 0.014SD_{t-5} - 0.012SD_{t-6} + \mu_t$	0.028
RM/YEN	ARMA (5, 0)	$RM_t = 1.081RM_{t-1} - 0.326RM_{t-2} + 0.3884RM_{t-3} - 0.144RM_{t-4} - 0.164RM_{t-5} + \mu_t$	0.000[d]
RP/YEN	ARIMA (0,2,0)	$RP_t = RP_{t-2} + \mu_t$	1.339
BAHT/YEN	ARMA (5, 0)	$BAHT_t = 1.032BAHT_{t-1} - 0.304BAHT_{t-2} + 0.365BAHT_{t-3} - 0.037BAHT_{t-4} - 0.241BAHT_{t-5} + \mu_t$	0.000[d]
PESO/YEN	ARMA (10, 0)	$PESO_t = 1.118PESO_{t-1} - 0.368PESO_{t-2} + 0.150PESO_{t-3} + 0.327PESO_{t-4} - 0.592PESO_{t-5} - 0.227PESO_{t-6} - 0.280PESO_{t-7} - 0.479PESO_{t-8} + 0.412PESO_{t-9} - 0.245PESO_{t-10} + \mu_t$	0.000[d]
SD/YEN	ARIMA(1,1,0)	$SD_t = 0.210SD_{t-1} + \mu_t$	0.000[d]

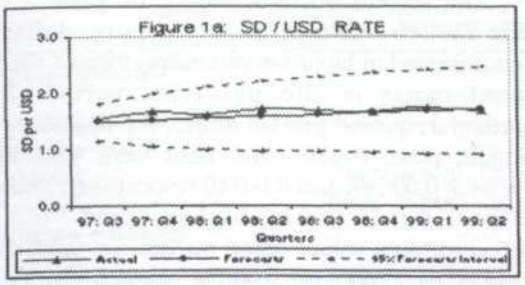
Notes: [a] Specifications of models for the original series.
[b] We report the equation for each transformed zero-mean stationary series as given by *ITSM*.
[c] residuals variance, var (μ_t) depends on the size of the exchange rate values.
[d] var (μ_t) is very small in value.

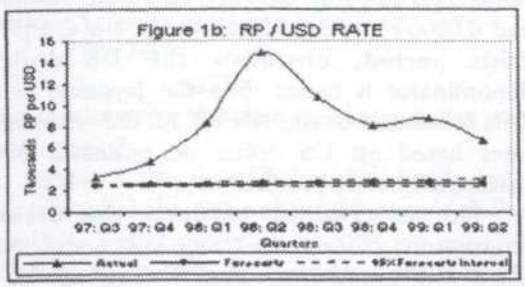
The eight actual and forecasted exchange rate values are plotted in *Figs. 1* and *2* together with the forecast intervals. Bearing in mind that in using any fitted model for forecasting, we assumed the economic fundamentals during the forecasting period remain the same as before. If this assumption holds, 95% of the actual exchange rate during this forecasting period lies inside our forecast interval. In other words, the actual observations would be what we have expected. Otherwise, the forecast interval fails to contain the actual observations; thereby implying the underlying assumption of "economic fundamentals remain the same" is not valid. In such a case, we have indirectly shown that the economic fundamentals during the forecasting period have changed. As revealed by *Fig. 1*, the only forecast interval that managed to contain the actual observations is the SGD/USD (*Fig. 1a*). This finding shows formally that, with the exception Singapore, the economic fundamentals of all ASEAN-5 countries with respect to US are affected by the recent financial crisis.

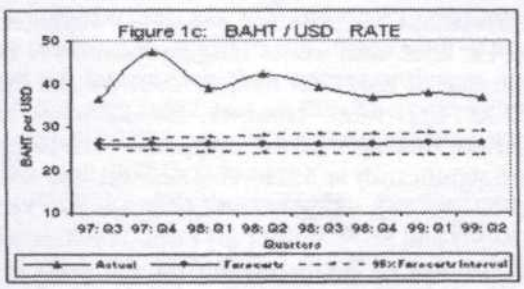
The best fitting model for SD/USD rate, ARFIMA (6, 0.2105,0) model had RMPSE values of 0.00014. Furthermore, the actual observations had the correct trend of depreciation over the first 2 years following the crisis, as predicted. Nevertheless, the ARFIMA (6, 0.2105,0) model tends to overestimate the strength of Singapore dollar (*Fig. 1a*).

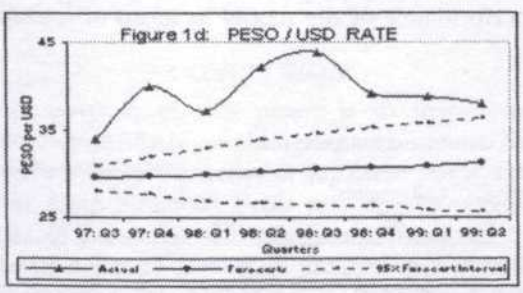
Judging from the plots of Indonesia rupiah (*Fig. 1b*), Thailand baht (*Fig. 1c*) and the Philippines peso (*Fig. 1d*), these countries apparently had a different economic structure after the crisis, as their actual exchange rates during the forecasting period (after crisis) are totally beyond our expectation. Moreover, all these 3 currencies experienced an unexpectedly sharp depreciation, suggesting that these currencies were badly affected by the crisis. For the case of Malaysia, ringgit denominated in US dollar (*Fig. 1e*) had also experienced a worse-than-expected depreciation within the first year after the crisis.

By comparing *Figs. 1* and *2*, we find that in general, the forecasts using models based on yen outperformed the models based on US dollar. *Fig. 2a* showed that the forecasted values of Singapore dollar denominated in yen fall in the 95% confidence interval. Singapore dollar is the only currencies in the sample that remain predictable in both US dollar and Japanese yen bases models. It is worth noting here that the Singapore dollar was not affected by the recent currency crisis.









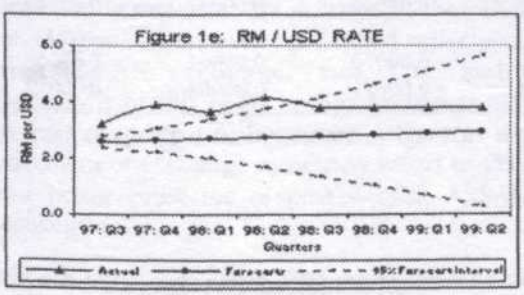
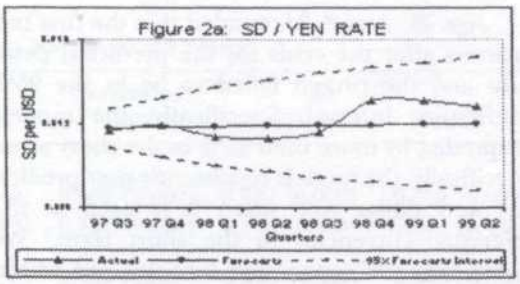
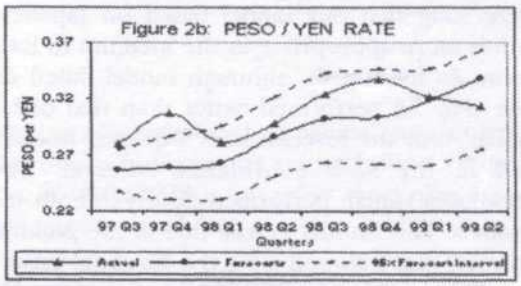
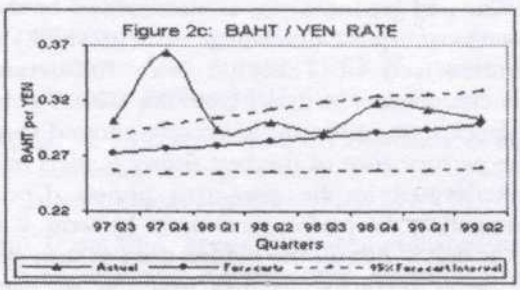
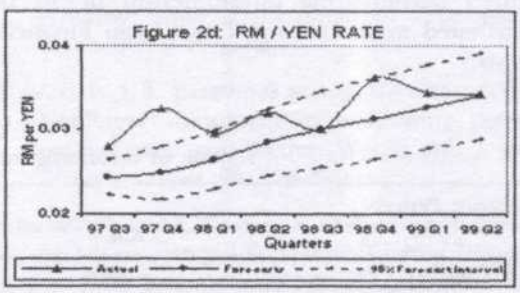


Fig. 1: Interval forecast for USD-based exchange rates









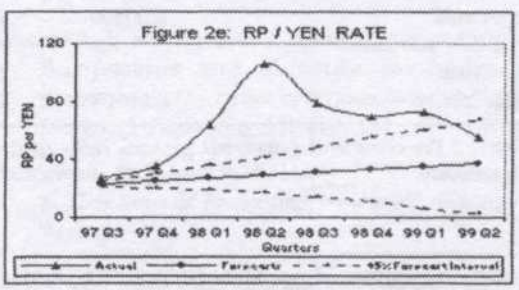


Fig. 2: Interval forecast for YEN-based exchange rates

Figs. 2b, 2c and *2d* revealed that the first two quarters after the crisis for the predicted peso, baht and the ringgit failed to be in the 95% confidence interval. Specifically, the models mispredict by more than 25% in the short term. Specifically, the models consistently over-predicts yen and dollar rate when it is used as the reference currencies in the short term.[7] We noted that the out-sample forecasts are within 95% confidence level after the third quarter, suggesting that our model based on Japanese yen is more appropriate in the medium to long term. As for rupiah, although model based on yen (*Fig. 2e*) performed better than that of US dollar, only the forecast after 7-quarter horizon fall in the 95% confidence interval. The Indonesia rupiah performed poorly in both the models. This finding is true due to the political turmoil that followed after the financial crisis.[8]

The performance of models based on US dollar and Japanese yen as determined by the root mean square percentage error (RMSPE) is summarised in Table 2. Two important conclusions may be drawn from this table. Firstly, a quick flash at the overall results showed that, the performance of the best fitting models had deteriorated in the post-crisis period. Upon comparing the performance term by term, it is clear that in fact all the models did not turn out to be as predictive as they were. As we have noted earlier, this phenomenon might be attributed to the set in of the Asian Financial crisis.

The second obvious feature in Table 2 is that models (except for Singapore dollar) denominated in Japanese yen outperformed their counterparts in the post-crisis period. In particular, quoted per US dollar, the RMSPE for ringgit, peso, rupiah, and baht were 0.00269, 0.00503, 0.00640, and 0.00340 respectively. These values were much higher than their corresponding values based on yen, i.e. 0.00103, 0.00086, 0.00621 and 0.00039 respectively. The RMSPE for SD/USD and SD/YEN were 0.00047 and 0.00064 respectively. However, for the pre-crisis period, obviously the US dollar denominator is better than the Japanese yen. This is because by the RMSPE all the exchange rates based on US dollar denominator had performed better prediction.

The correlation between the actual observations of each exchange rate series and their corresponding best fitting model's predicted values is depicted in Table 3. All the correlations for pre-crisis period are significant at 1% level, with values ranging from 0.887 for the case of RM/USD rate, to 0.997 for the case of RP/USD rate. However, for the post-crisis period, only 40% of the computed correlations are significantly at 5% level. These include RM/YEN (0.739), PESO/YEN (0.714), SD/YEN (0.734) and SD/USD (0.748) rates. This decrease in the degree of correlation for the post-crisis period is synonym to the deterioration of the performance of the model in terms of tracking

TABLE 2
RMSPE of best-fitting models for various exchange rates

Forecast Period[a]	Currencies				
	RM	PESO	RP	SD	BAHT
US dollar-based					
Pre-Crisis	0.00039	0.00007	0.00008	0.00014	0.00008
Post-Crisis	0.00269	0.00503	0.00640	0.00047	0.00340
Japanese yen-based					
Pre-Crisis	0.00061	0.00061	0.00070	0.00064	0.00062
Post-Crisis	0.00103	0.00086	0.00621	0.00064	0.00039

Note: [a] Pre-crisis and post-crisis periods refer to the periods 1971: Q1 to 1997: Q2 and 1997: Q3 to 1999: Q2 respectively.

[7] This coincides with the speculator attack that started with the Thai bath in July 1997. By the end of 1997, the Asian currency crisis solved the retinal currency of Thailand and Indonesia.

[8] Most of the currencies like Thai Bath became relatively stable in 1998, the Indonesian rupiah continue on its depreciation trend due mainly to political disturbance.

TABLE 3
Correlation between actual values and predicted values[a]

Forecast Period[b]	Currencies				
	RM	PESO	RP	SD	BAHT
US dollar-based					
Pre-Crisis	0.887 (0.000)	0.995 (0.000)	0.997 (0.000)	0.989 (0.000)	0.989 (0.000)
Post-Crisis	0.406 (0.318)	0.433 (0.283)	0.357 (0.385)	0.748 (0.033)	–0.428 (0.291)
Japanese yen-based					
Pre-Crisis	0.991 (0.000)	0.994 (0.000)	0.989 (0.000)	0.976 (0.000)	0.993 (0.000)
Post-Crisis	0.739 (0.036)	0.714 (0.047)	0.435 (0.281)	0.734 (0.038)	–0.224 (0.594)

Notes: [a] Values in brackets are p-values.
[b] See Table 2.

the movement of the exchange rates in the post-crisis period.

Table 3 also showed that the ringgit, peso, rupiah and baht but not for Singapore dollar, could be better predicted by YEN for the post-crisis period. This is consistent with results reported earlier. The correlations for the RM/YEN, PESO/YEN, RP/YEN and BAHT/YEN rates are respectively 0.739, 0.714, 0.435 and –0.224 and are higher than their correspondences, i.e. 0.406, 0.433, 0.357 and –0.428. The correlation for the SD/USD rate (0.748) is higher than SD/YEN rate (0.734), however.

To sum, with the exception for Singapore dollar, the forecasting performance of all other models for ASEAN currencies denominated in yen had outperformed those denominated in US dollar.

CONCLUSION

The purpose of this paper is to investigate whether ASEAN exchange rates are more predictable by US dollar or Japanese yen in the post Asian Financial Crisis era. Results suggest that all exchange rates are better predicted by the US dollar prior crisis. In the post-crisis period, Singapore dollar continues to be better predicted when denominated in US dollar. On the other hand, Japanese yen better predicted other post-crisis ASEAN exchange rates. One major implication of this study is that exchange rate forecasters, who are interested to trace the movement of exchange rates, may resort to YEN as a better predictor of post – crisis ASEAN exchange rates.

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Is MYR/USD a Random Walk? New Evidence from the BDS Test

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ABSTRAK

Kajian ini menyiasat secara empirikal hipotesis pergerakan rawak ke atas data harian pulangan kadar pertukaran MYR/USD. Peningkatan kuasa-guna komputer ditambah dengan kemajuan dalam dinamik tak linear dan kios, telah membantu penyelidik untuk memeriksa semula kebarangkalian jumpaan yang lebih kompleks bentuk pergantungan ke atas siri rawak. Kajian ini telah menggunakan alat statistikal seperti Brock-Dechert-Scheinkman untuk menguji sama ada siri pulangan kadar pertukaran MYR/USD mempunyai sifat-sifat taburan bebas dan kesamaan. Keputusan kajian menolak hipotesis dan menunjukkan bahawa siri MYR/USD adalah tidak rawak, saling bergantungan dan ketidaksamaan. Ini menunjukkan bahawa siri ini tertakluk kepada paten aliran pusingan turun-naik. Implikasi kajian ini menunjukkan bahawa kedapatan keberkesanan pasaran yang lemah terhadap penentuan struktur siri pulangan kadar pertukaran wang asing MYR/USD.

ABSTRACT

This study empirically investigates the daily MYR/USD exchange rate return series in the light of the random walk hypothesis. Recent breakthroughs pertaining to non-linear dynamics and chaos, coupled with the rapid acceleration in computer power, have made it possible to more robustly test for the random walk in financial and economic data. This study uses a new non-linear statistical test, namely the Brock-Dechert-Scheinkman (BDS) test to examine whether the MYR/USD exchange rate return series are random walk with the property of being independent and identically distributed. The results overwhelmingly reject the hypothesis that the MYR/USD data examined in this study are random, independent and identically distributed since some cycles or patterns show up more frequently than would be expected in a true random series. These results may have implications for the weak form market efficiency, if the underlying structure can be profitably exploitable, which remains an avenue for further research.

INTRODUCTION

Numerous efforts have been made to understand the behaviour of exchange rates. The study of the foreign exchange market has become even more important in the post-Bretton Woods era. Since the inception of the floating exchange rate regime in 1973, most currency exchange markets have experienced continuous and sometimes dramatic fluctuations and volatility. The Malaysian ringgit, which is the focus of this paper, has been no exception, especially since late 1997 when a currency crisis swept the economies of South East Asia.

In the early treatments of the efficient markets hypothesis, the statement that the current price of a security 'fully reflects' available information is assumed to imply that successive price changes are independent. Furthermore, it is usually assumed that successive changes are identically distributed. Together, the two

hypotheses constitute the random walk model (Fama 1965).

A time series, X_t, is said to follow a random walk if the change in X_t from one period to the next is purely random, that is, if we have:

$$X_t = X_{t-1} + \mu_t \quad (1)$$

where μ_t is completely random, displaying no pattern over time. A purely random process is what statisticians call 'independently and identically distributed', such as a Gaussian with zero mean and constant variance.

Over the years, there has been an explosion of empirical research on the random walk behaviour of exchange rates. The consensus of published empirical research was that a random walk described prices fairly well, though some anomalies have been reported (Cornell 1977; Mussa 1979; Frankel 1981; Meese and Rogoff 1983; Newbold *et al.* 1998). The motivation for this line of inquiry was at least twofold. First, assumptions in statistical tests and many asset pricing models often include observations which are independent and identically distributed (i.i.d). Thus, for valid inferences to be drawn from a statistical test, this statistical assumption of i.i.d. must be met. Second, most of the earlier empirical studies hypothesized random walk behaviour to test the efficiency of foreign exchange markets. A random walk series implies that the market is weak-form efficient. Since new information is deemed to come in a random fashion in an efficient market, changes in prices that occur as a consequence of that information will seem random. Thus, investors in weak-form efficient market cannot expect to find any patterns in the historical sequence of exchange rates that will provide insight into future rate movements and allow them to earn abnormal rate of return. However, if the hypothesis of a random walk is rejected, it would be a strong statement to conclude that market is inefficient[1].

The characterization of an exchange rate return series as random in nature has been questioned in recent times by the application of new non-linear statistical tests. Interest in these non-linear techniques is based on the assumption that highly complex behaviour that appears to be random is actually generated by an underlying non-linear process. The evidence that non-linearity abounds in financial time series has further sparked the interest of many researchers and contributed to the growth in this area (Hsieh 1989, 1991; Scheinkman and LeBaron 1989; De Grauwe *et al.* 1993; Abhyankar *et al.* 1995; Steurer 1995; Brooks 1996; Barkoulas and Travlos 1998; Opong *et al.* 1999). With these breakthroughs in non-linear dynamics and chaos, coupled with the rapid acceleration in computer power, it is possible to test for the random walk hypothesis more robustly. Thus, this has prompted researchers to re-examine the possibility of uncovering a more complex form of dependencies in the underlying financial time series that often appear completely random to standard linear statistical tests, such as serial correlation tests, non-parametric runs test, variance ratio test and unit root tests.

A survey of the literature disclosed that a large number of studies have applied these new non-linear statistical tools to test whether exchange rates are random walk (Hsieh 1989; De Grauwe *et al.* 1993; Steurer 1995; Brooks 1996; Mahajan and Wagner 1999). However, it was observed that while major currencies of Japanese yen, US dollar, British pound, and German deutschmark have received substantial attention from researchers, no study has been conducted on the Malaysian ringgit. Thus, a major objective of this study is to fill the gap in the current literature so as to provide more reliable evidence on the univariate time-series properties of the Malaysian exchange rate. To the knowledge of the writers, this is the first attempt utilizing recent advances in non-linear dynamics to examine the random walk behaviour of the Malaysian exchange rate.

This paper is organized as follows: Section 2 provides a review of the relevant literature. This is followed by a brief overview of the historical development of the Malaysian foreign exchange market. Section 4 describes the data and the BDS test. The results are then summarized in Section 5 and are used to draw conclusions and implications in the final section.

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[1] In this case, it is necessary to first uncover the structure of dependencies detected in this non-random series. If investors could have profitably operated a trading rule (net of all transactions costs) which exploits those detected dependencies, then it would have been at odds with the weak-form efficient market hypothesis.

REVIEW ON RELATED LITERATURE

The characterization of exchange rate return series as random in nature has been questioned in recent times by the application of new non-linear statistical tools. The failure to uncover randomness in the market can be attributed to the fact that most of the empirical statistical tests are based on linear models. Fama (1965), in his earlier work admitted that linear modelling techniques have limitations, as they are not sophisticated enough to capture the complicated 'patterns' that the chartist observed in stock prices. Steurer (1995) expressed a similar opinion, that there is an order to the apparent randomness of the market. This order is so complex that the random walk concept was proven by the standard linear statistical tests. Another researcher, Brooks (1996) agreed that series of financial returns often appeared completely random using standard linear and spectral tests. However, he strongly believed that through a different approach, using more powerful techniques, it may be possible to uncover a more complex form of dependence in those series.

Statistical tests such as serial correlation tests, non-parametric runs test, variance ratio test and unit root tests are designed to uncover linear dependence in the data. However, the lack of linear dependence does not imply that the series are random. Non-linear dependence may exist in a series and this is supported by the growing empirical evidence that non-linearity abounds in financial time series. Following weak-form efficient market hypothesis, even non-linear combinations of previous prices are not useful predictors of future prices (Brooks 1996; Brooks and Hinich 1999; McMillan and Speight 2001). These linear statistical tests cannot detect non-linear departure from the random walk hypothesis (Hsieh 1989). Thus, this has prompted researchers to re-examine the possibility of uncovering a more complex form of dependencies in the earlier observed series that often appeared random to standard linear statistical tests.

Recent breakthroughs pertaining to non-linear dynamics and chaos, coupled with the rapid acceleration in computer power, have made it possible to more robustly test for the random walk hypothesis. Most of the empirical studies in the literature have extensively applied the Brock-Dechert-Scheinkman test (Brock *et al.* 1987, 1996)[2] to investigate whether financial and economic time series are random walk with the property of being independent and identically distributed (Hsieh 1989; Scheinkman and LeBaron 1989; De Grauwe *et al.* 1993; Steurer 1995; Brooks 1996; Mahajan and Wagner 1999; Opong *et al.* 1999). The BDS test uses the correlation function (also known as correlation integral) as the test statistic. The asymptotic distribution of the correlation function is known under the null hypothesis of whiteness (independent and identically distributed observations). As a result, the BDS test can be used as a formal statistical test of whiteness against general dependence, which includes both non-white linear and non-white non-linear dependence. The power of the BDS test in detecting departures from i.i.d. behaviour has been proven in a number of Monte Carlo simulations (Brock *et al.* 1991; Hsieh 1991).

The results from empirical studies on exchange rates using the BDS test have generally rejected the null hypothesis of being independent and identically distributed (Hsieh 1989; De Grauwe *et al.* 1993; Steurer 1995; Brooks 1996). However, the evidence from a recent study by Mahajan and Wagner (1999) using the BDS test revealed that the null hypothesis of random walk cannot be rejected for all the exchange rate data under investigation. One notable feature of all these earlier studies is that major currencies like the Japanese yen, U.S. dollar, British pound, and German deutschmark received substantial attention, while none has been given to currencies of developing countries, including Malaysia.

THE MALAYSIAN FOREIGN EXCHANGE MARKET

This section provides a brief account of the exchange rate regimes in Malaysia for the period 1957-2001. Throughout those 44 years, Malaysia implemented a diverse range of exchange rate regimes, starting initially with pegging the ringgit to the pound sterling. This was followed by a

[2] The growing popularity of the BDS test has witnessed its incorporation into commercial statistical package of E-Views version 4.0.

floating regime, first against the U.S. dollar and later in terms of a composite basket of currencies. Since 1st September 1998, the Malaysian ringgit has been pegged to the U.S. dollar.

In those earlier days after independence in 1957, when the value of the Malaysian currency was determined in terms of pound sterling, its stability was closely related to the pound sterling in the foreign exchange market. At that time, foreign exchange was only used to fulfill the needs of exporters. The rate of the Malaysian ringgit was managed by the Malaya Board of Commissioners of Currency and British Borneo (the Currency Board) and fixed at 2s. 4d. sterling. Independence of the foreign exchange market in Malaysia was attained on 12 June 1967 when the Central Bank of Malaysia assumed sole power to issue currency from the Malaya Board of Commissioners of Currency.

With the floating and devaluation of the pound sterling in early 1970, Malaysia adopted the U.S dollar as the intervention currency in June 1972. Owing to uncertainty in the international foreign exchange markets, the ringgit was allowed to float upwards from 21st June 1973. Through that floating arrangement, the Central Bank of Malaysia was no longer bound to buy one unit of U.S. dollar with the set floor rate of RM2.4805.

That floating regime against the U.S dollar was in place for only two years before the Malaysian Government adopted a new exchange rate regime on September 27th, 1975. Henceforth, the rate of exchange of the ringgit was determined in terms of a composite basket, comprising the currencies of Malaysia's major trading partners. Under this floating exchange rate regime, Malaysia did not set targets for ringgit exchange rate levels. Central Bank interventions were only to ensure the stability of the ringgit, so that the exchange rate reflected the underlying economic fundamentals.

On July 2nd, 1997, the announcement of the Bank of Thailand to abandon its defence of the baht caused the collapse of its national currency. What appeared to be a local financial crisis in Thailand quickly escalated into an Asian financial crisis, spreading to other Asian countries including Indonesia, Korea, Malaysia and the Philippines. The Malaysian ringgit came under intense selling pressure and the Central Banks was forced to intervene heavily to defend the value of the ringgit. At the same time, the Malaysian government undertook some corrective measures such as tightening monetary policy, emphasising fiscal prudence and strengthening the financial system, all aimed to restore confidence and stability in the markets. However, all these efforts were ineffective in curbing the downward pressure on the Malaysian ringgit.

The ringgit continued to experience extreme volatility and reached a historical intra-day low of USD1 = RM4.8800 on January 7th, 1998. The ringgit remained volatile under intense speculative pressure and it traded within the range of USD1 = RM4.0900 to RM4.2650 during July and August that year. In order to prevent further pressure on the ringgit, the Malaysian government implemented selective exchange control policies on September 1st, 1998. This exchange control served to reduce the internationalization of ringgit through the elimination of speculative activities in the foreign exchange markets, both external and at home. As part of these measures, the ringgit was pegged to the U.S. dollar at RM3.8000. At the time of writing, the ringgit's peg to the dollar has held firm though there have been pressures to re-peg the ringgit at a higher rate following the decline of regional currencies against the U.S. dollar.

RESEARCH DESIGN AND METHODOLOGY

The Data

The daily spot exchange rates for Malaysian ringgit (MYR/USD) are obtained from the Federal Reserve Statistical Release[3] over the period January 2nd, 1990 to 31st August 1998. The sample period after this is excluded from the current study because Malaysia adopted a fixed ringgit regime from September 1st, 1998. At the time of writing, the Malaysian ringgit peg at 3.80 to the U.S. dollar has held firm[4].

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[3] These daily data are obtained from the Federal Reserve Board's official website at http://www.federalreserve.gov/releases/H10/hist on 18/4/2001. The H.10 release contains daily rates of exchange of major currencies against the U.S. dollar.

[4] We thank anonymous referee for highlighting us of the sample period selection. After this period the pegging of ringgit to the US dollar is irrelevant to our study.

The raw exchange rate data are transformed into the differenced-log return series (r_t). All subsequent analyses are performed on these transformed Malaysian exchange rate return series, which can be interpreted as a series of continuously compounded percentage daily returns (Brock *et al.* 1991). Formally, it can be written as:

$$r_t = 100\ (\ln\ (S_t) - \ln\ (S_{t-1})) \qquad (2)$$

where S_t is the exchange rate at time t, and S_{t-1} the rate on the previous trading day.

This transformation has become standard in the finance literature (Hsieh 1989; De Grauwe *et al.* 1993; Steurer 1995; Brooks 1996; Mahajan and Wagner 1999). Thus, this transformation is done to conform to the literature and to allow comparison with other studies in this domain. Another possible justification for using returns rather than raw data is that the raw data is likely to be non-stationary. Stationarity is a pre-requisite for the BDS test. Hsieh (1991) pointed out that non-stationarity in the data series can cause a rejection of the null hypothesis of i.i.d. on the basis of the BDS test.

The Brock-Dechert-Scheinkman Test (BDS Test)

Brock, Dechert and Scheinkman (Brock *et al.* 1987) developed a statistical test and the BDS statistic. The original BDS paper took the concept of the correlation integral[5] and transformed it into a formal test statistic which is asymptotically distributed as a normal variable under the null hypothesis of i.i.d. against an unspecified alternative. A revision of this original paper was done in Brock *et al.* (1996).

The BDS test is based on the correlation integral as the test statistic. Given a sample of independent and identically distributed observations, $\{x_t: t = 1, 2, ..., n\}$, Brock *et al.* (1987, 1996) showed that:

$$W_{m,n}(\varepsilon) = \sqrt{n}\,\frac{T_{m,n}(\varepsilon)}{V_{m,n}(\varepsilon)} \qquad (3)$$

has a limiting standard normal distribution, where $W_{m,n}(\varepsilon)$ is the BDS statistic[6], n is the sample size, m is the embedding dimension, and the metric bound, ε, is the maximum difference between pairs of observations counted in computing the correlation integral. $T_{m,n}(\varepsilon)$ measures the difference between the dispersion of the observed data series in a number of spaces with the dispersion that an i.i.d. process would generate in these same spaces, that is $C_{m,n}(\varepsilon) - C_{1,n}(\varepsilon)^m$. $T_{m,n}(\varepsilon)$ has an asymptotic normal distribution with zero mean and variance $V^2_m(\varepsilon)$[7].

This BDS test has an intuitive explanation. The correlation integral $C_{m,n}(\varepsilon)$ is an estimate of the probability that the distance between any two m-histories, $x_t^m = (x_t, x_{t+1}, ..., x_{t+m-1})$ and $x_s^m = (x_s, x_{s+1}, ..., x_{s+m-1})$ of the series $\{x_t\}$ is less than ε, that is, $C_{m,n}(\varepsilon) \rightarrow \text{prob}\{|x_{t+i} - x_{s+i}| < \varepsilon$, for all i = 0, 1, ... m-1$\}$, as n $\rightarrow \infty$

If the series $\{x_t\}$are independent, then, for $|t\text{-}s|>m$, $C_{m,n}(\varepsilon) \rightarrow \prod_{i=0}^{m-1} \text{prob}\{|x_{t+i} - x_{s+i}| < \varepsilon\}$, as n $\rightarrow \infty$. Furthermore, if the series $\{x_t\}$ are also identically distributed, then $C_{m,n}(\varepsilon) \rightarrow C_1(\varepsilon)^m$, as n $\rightarrow \infty$.

The BDS statistic therefore tests the null hypothesis that $C_{m,n}(\varepsilon) = C_{1,n}(\varepsilon)^m$, which is the null hypothesis of i.i.d[8].

The need to choose the values of ε and m can be a complication in using the BDS test. For a given m, ε cannot be too small because $C_{m,n}(\varepsilon)$ will capture too few points. On the other hand, ε cannot be too large because $C_{m,n}(\varepsilon)$ will capture too many points. For this purpose, we adopt the approach used by advocates of this test. In particular, we set ε as a proportion of standard deviation of the data, σ. Hsieh and LeBaron (1988a, b) have performed a number of Monte Carlo simulation tests regarding the size of the BDS statistic under the null of i.i.d. and the alternative hypotheses. The Monte Carlo evidence showed that the 'best' choice of ε is between 0.50 and 1.50 times the standard deviation.

On the other hand, at our chosen setting of ε, we produce the BDS test statistic, $W_{m,n}(\varepsilon)$ for

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[5] In Grassberger and Procaccia (1983), the correlation integral was introduced as a measure of the frequency with which temporal patterns are repeated in the data. For example, the correlation integral C(ε) measures the fraction of pairs of points of a time series $\{x_t\}$ that are within a distance of ε from each other.

[6] See Brock *et al.* (1987, 1996) for the derivation of the BDS test statistic.

[7] Vm(ε) can be estimated consistently by $V_{m,n}(\varepsilon)$. For details, refer Brock *et al.* (1987, 1996).

[8] The null of i.i.d. implies that $C_{m,n}(\varepsilon) = C_{1,n}(\varepsilon)$m but the converse is not true.

all settings of embedding dimension from 2 to 10, in line with the common practice of most researchers (Hsieh 1989; De Grauwe *et al.* 1993; Brooks 1996; Mahajan and Wagner 1999; Opong *et al.* 1999). However, it is important to take note that the small samples properties of BDS degrade as one increases the embedding dimension. Thus, in this study, the results with embedding dimensions of 2 to 5 are given the most serious consideration[9].

Asymptotically, the computed BDS statistics, $W_{m,n}(\varepsilon) \sim N(0,1)$ under the null of i.i.d. against an unspecified alternative. Thus, this would suggest a two-sided test. However, this is a very tricky issue. Brooks (1996) and Opong *et al.* (1999) clearly stated that the BDS test is a two-sided test so that the rejection of the null of i.i.d. occurs when the estimated value of the $W_{m,n}(\varepsilon)$ is more extreme (in either tail) than the corresponding statistic from the normal tables. However, Barnett *et al.* (1995, 1997) run it as a one-tailed test. In this study, the BDS test is taken as a two-tailed test.

RESULTS AND ANALYSIS

Descriptive Statistics

Before proceeding to the formal BDS test, we provide some descriptive statistics of the Malaysian exchange rate return series in order to get a better view of some of the important statistical features of this series of returns.

Table 1 reveals that the Malaysian exchange rate return series exhibit some degree of negative or left-skewness. On the other hand, the distribution of this return series is highly leptokurtic, in which the tails of its distribution taper down to zero more gradually than do the tails of a normal distribution. Not surprisingly, given the non-zero skewness levels and excess kurtosis demonstrated within this series of returns, the Jarque-Bera (JB) test strongly rejects the null of normality. These results conform to the consensus in the literature that the distributions of exchange rate return series are non-normal (Hsieh 1989; Steurer 1995; Brooks 1996).

One area that deserves our attention is the stationarity of the exchange rate return series, which is a pre-requisite for the BDS test. The results from the Augmented Dickey Fuller (ADF) test in Table 2 show that the null hypothesis of a unit root can be rejected for the Malaysian exchange rate return series even at the 1% level of significance. Similar conclusions are made based on the results of Phillips-Perron (PP) test summarized in the same table. Thus, the results indicate that the transformed return series of the Malaysian exchange rate do not contain a unit root and thus are stationary, as displayed in *Fig. 1.* Those statistics confirm the appropriateness of the differenced logarithmic transformation in rendering the exchange rate

TABLE 1
Summary statistics of differenced-log returns for MYR/USD (r_t)

	MYR/USD
Sample Period	2/1/1990-31/8/1998
No. of observations	2179
Mean	0.020103
Median	0.000000
Maximum	7.195700
Minimum	-9.156700
Std deviation	0.694546
Skewness	-0.083968
Kurtosis	43.14067
JB normality test statistic	146292.7
p-value	(0.000000)*

* Denotes a very small value.

[9] In a personal communication, LeBaron recommends the use of embedding dimension from 2 to 5 at sample sizes comparable to ours.

TABLE 2
Unit root test results for MYR/USD

	Level	First Difference
	Trend	No Trend
Augmented Dickey Fuller (ADF)	0.421134 (6)	-21.00660 (5)**
Phillips-Perron (PP)	0.587583 (7)	-45.21833 (7)**

Note: The null hypothesis is that the series contains a unit root. The critical values for rejection are -3.97 for models with a linear time trend and -3.43 for models without a linear time trend at a significant level of 1% (**). Values in brackets indicate the chosen lag lengths.

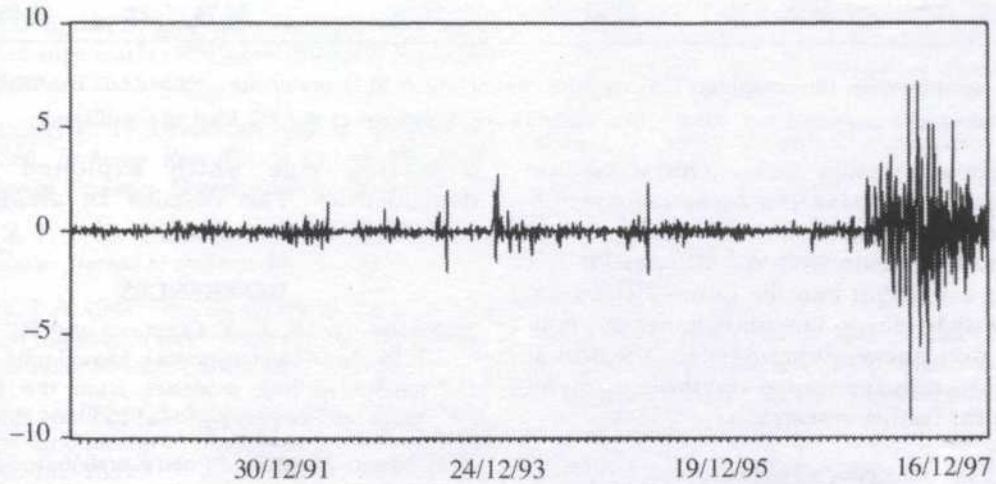

Fig. 1: Differenced-log returns of MYR/USD (rt), 2/1/1990 to 31/8/1998 (2179 observations)

return series stationary.

BDS Test

Subsequently, we apply the BDS test on the Malaysian exchange rate return series in order to test whether these return series are random walk with the property of being independent and identically distributed. Table 3 reports the results of the BDS test. The BDS statistics, $W_{m,n}(\varepsilon)$, are calculated for all combinations of m and ε where m = 2, 3,.....10 and ε = 0.50σ, 0.75σ, 1.00σ, 1.25σ and 1.50σ, with a total of 45 combinations. Although we report the results with embedding dimensions varying from 2 to 10, the results with embedding dimensions of 2 to 5 should be given the most serious consideration. This is because the small sample properties of BDS degrade as one increases the dimension. Specifically, as one gets beyond m=5, the small sample properties are not robust in terms of normal approximations at sample sizes comparable to ours.

It is obvious from Table 3 that all the BDS statistics are in the extreme positive tail of the standard normal distribution. Specifically, all of the values are significant even at the 1% level of significance, especially at the suggested dimensions of 2 to 5. According to Brock *et al.* (1991), the large BDS statistics can arise in two ways. It can either be that the finite sample distribution under the null of i.i.d. is poorly approximated by the asymptotic normal distribution, or the BDS statistics are large when the null hypothesis of i.i.d. is violated. From the various Monte Carlo simulations, Brock *et al.* (1991) ruled out the first possibility, thus suggesting that our large BDS statistics in Table 3 provide strong evidence of departure from the i.i.d. null.

The rejection of the i.i.d. random behaviour implies that there is indeed some dependence in the underlying generating process of Malaysian

TABLE 3
BDS test results for differenced-log returns of MYR/USD (r_t)

	ε				
M	0.50	0.75	1.00	1.25	1.50
2	7.25	10.37	13.97	15.66	15.79
3	9.03	12.16	16.22	18.53	18.48
4	10.62	13.52	17.75	20.37	20.41
5	12.34	14.77	18.92	21.55	21.59
6	14.43	16.22	20.10	22.60	22.48
7	17.00	17.92	21.41	23.66	23.32
8	20.19	19.90	22.91	24.87	24.28
9	24.14	22.22	24.62	26.21	25.34
10	29.05	24.90	26.58	27.74	26.55

Note: Asymptotically, the computed BDS statistics, $Wm,n((\varepsilon\sim)\ N\ (0,1)$ under the null of i.i.d. The BDS test is taken as a two-tailed test. All the BDS statistics are significant at the 1% level of significance.

exchange rate return series. This is because some cycles or patterns show up more frequently than would be expected in a true random series. However, the results from the BDS test do not provide any insight into the cause of rejection, which may be due to non-white linear and non-white non-linear dependence. Additional diagnostics tests are needed and this remains an avenue for further research.

CONCLUSIONS

This study has empirically examined the behaviour of the Malaysian exchange rate return series in the light of the random walk hypothesis. With a new and powerful non-linear statistical tool, namely the BDS test, it is possible to test for the random walk hypothesis more robustly in series of financial returns that often appear completely random to standard linear statistical tests, such as serial correlation tests, non-parametric runs test, variance ratio test and unit root tests. The outcomes of our econometric investigation reject the hypothesis that the MYR/USD relationships examined in this study are random, independent and identically distributed. This is because some cycles or patterns show up more frequently than would be expected in a true random series. These results may have implications for the weak form market efficiency, if the underlying structure can be identified and profitably exploited. Specifically, it is necessary first to uncover the structure of dependencies in the underlying process, either in the form of linear or non-linear, and then proceed to assess whether investors could have profitably operated a trading rule which exploited these dependencies. This remains an avenue for further research.

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Organizational Creative Climate & Learning Organization: Factors Contributing Towards Innovation Within an Organization

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ABSTRAK

Kajian inovasi mencadangkan bahawa satu iklim organisasi yang kreatif cenderung untuk memainkan peranan penting dan sebagai satu prediktor inovasi. Walau bagaimanapun, baru-baru ini, kehadiran budaya pembelajaran dalam sesebuah organisasi cenderung untuk menerangkan kesan yang harus dipertimbangkan turut mempengaruhi inovasi dan untuk menentukan yang mana satu boleh menjadi prediktor yang lebih baik untuk inovasi teknologi dan organisasi. Hasil keputusan menunjukkan bahawa kedua-dua budaya pembelajaran dan iklim kreatif secara signifikannya menyumbang 80.4% kepada varians dalam inovasi yang dibentuk dengan iklim kreatif organisasi yang menyumbang 55.6% dan budaya pembelajaran menyumbang 63.7% varians dalam inovasi yang diperhatikan. Hasil kajian juga mendapati bahawa dimensi organisasi pembelajaran menyumbang lebih kepada varians dalam inovasi, khususnya dimensi "Kepimpinan Strategik" mempunyai kuasa prediktor tinggi signifikan ke atas inovasi berlaku di dalam organisasi kes dibandingkan dengan sepuluh faktor iklim kreatif organisasi dan selebihnya enam dimensi organisasi pembelajaran.

ABSTRACT

Studies on innovation have suggested that a creative organizational climate tends to play an important role and is a predictor for innovation. However, lately, the presence of learning culture in an organization tends to explain a considerable influencing effect on innovation too. This particular case study tries to examine the influence of both variables on innovation and to determine which one of the two can be a better predictor for technological and organizational innovation. The results indicated that both learning culture and creative climate significantly contributed 80.4% to the variance in the innovation construct with organizational creative climate on its own, contributing 55.6% and the learning culture on its own, contributing 63.7% of the observed variances in innovation. The results of the study also found that the learning organization dimensions contributed more to the variances in innovation, particularly the dimension of 'Strategic Leadership' which had a significantly high predictive power on innovation occurring within the case organization as compared to the ten organizational creative climate factors and the rest of the six learning organization dimensions.

INTRODUCTION

There is a substantial body of evidence that suggests innovation can be considered as a dominant factor in national economic growth and international patterns of trade, while at the micro level (within organizations) R&D is seen as enhancing an organization's activity to absorb and make use of new technologies of all kinds (OECD 1997; Freeman 1994). French and Bell, Jr. (1995) considered three elements to ensure continuous innovation in organizations; these are empowering employees, encouraging employee participation and employee involvement. Innovation, for example, could be

one of the outcomes that result from successful change efforts (Beer and Nohria 2000; Chain Store Age 1998; OECD 1997; Mensch 1975).

Among the many streams of research regarding influencing factors on innovation, the idea of having a creative working climate (or environment) within an organization which relates to a suitable working culture to facilitate an environment which will then enhance the organizational power is very often mentioned. This idea was put forward during the middle 1980's and late 1990's by several scholars among others Ekvall, Arvonen and Waldenstrom-Lindblad (1983), Ekvall and Tangeberg-Anderson (1986), Zain Mohamed (1995), Zain Mohamed and Rickards (1996) and Amabile and Conti (1999) who focused on organizational climate factors which are said to foster creativity and innovation. Zain Mohamed (1996) in his study involving eight Malaysian firms used the Ekvall *et al.*'s (1983) Creative Climate Questionnaire (CCQ) which contained ten dimensions of creative climate to compare the innovation level of the organizations. In addition Zain Mohamed's (1995) study identified fifteen factors deemed favorable for innovation implementations in private organizations both large and small, of which five are similar to Amabile and Conti's (1999) eight organizational climatic factors likely to foster innovation. The five major factors favorable for innovation are mentioned and common to both Amabile and Conti's and Zain Mohamed's studies though phrased differently. They are (1) Organizational encouragement (commitment), (2) Sufficient resources (user friendly technology), (3) Teamwork support, (4) Freedom (open to new ideas), and (5) Supervisory encouragement.

Research on innovation has also identified a number of human, social and cultural factors which are crucial to the effective operation of innovation at the organizational level (OECD 1997). These factors, according to OECD (1997), were mostly centered around learning; it is learning by organizations as a whole (diffusion of knowledge to a broad range of key individuals within them) which is critical to an organization's innovative capabilities. Beginning in the late 1990's and the year 2000, the idea of learning at the organizational level and knowledge management have been closely linked to innovation (Argyris and Schon 1978; Drucker 1988; Garvin 1993; Nonaka and Takeuchi 1995). This stream of research also called the neo-Schumpeterian approach stems from earlier scholars such as Polyanyi (1966) and Nonaka (1991), who viewed innovation in terms of interaction between market opportunities and the organization's knowledge base and capabilities. This approach has been followed up on recent studies by Mohanty (1999) and Sta Maria (2000).

STATEMENT OF THE PROBLEM

Despite achieving considerable success economically, the innovation practices in the Malaysian private organizations still remain relatively under-researched as asserted by a few scholars (Zain Mohamed and Rickards 1996; Malaysian Science and Technology Information Center (MASTIC) 1996). This statement is also supported by Sta Maria (2000) and Khairuddin (1999). Axtell, Holman, Unsworth, Wall and Waterson's (2000) were of the opinion that there was a large literature on creativity in general but few relating to innovation per se. Even though there has been a huge volume of research on innovation, with 3,085 publications on the diffusion of innovation out of which 2,297 are empirical works (Rogers 1983), surprisingly, good models and principles on innovation have yet to be developed as stated by Zairi Mohamed (1994). MASTIC (1996), realizing the situation and the need for Malaysian organizations to upgrade their innovations, has since conducted a nationwide survey on innovation in 1994 involving a large number of Malaysian private organizations. Following which, another survey was conducted in 1998 (M. Kamaruzzman personal communication, October 2000). Thus, the problem statement of this study can be summarized as "the critical need for more studies to be conducted linking organizational creative climatic factors and learning factors in order to analyze their influences on innovation within the Malaysian context is pressing". Specifically, the fields of organizational creative climatic factors and learning factors should be empharised. Undoubtedly with more research, more crucial information could be obtained which will further assist in organizational decision making and subsequently improve the national growth. Hence, the implementation of this study was taken up generally to add value for the theoretical development in this particular area and specifically to obtain insights into the areas

of working climate and learning culture on innovation.

OPERATIONAL DEFINITIONS OF TERMS

The three major operational definitions of terms used in this study are as follows:

Organizational Creative Climate

The definition of organizational climate for creativity, takes the definition by Ekvall (1996) and Ekvall *et al.* (1983) who regard climate as an attribute of the organizations, a conglomerate of attitudes, feelings, and behavior which characterises life in organizations, and exists independently of the perceptions and understandings of the members of the organization (p. 105); it is conceived as an organizational reality in an 'objectivistic' sense and therefore is not identical to organizational culture. By Ekvall's (1996) understanding, climate is regarded as a manifestation of culture. The organizational climate for creativity contained several factors (Ekvall 1996) deemed favorable for such climatic culture one which could stimulate creativity and innovation. These factors then are referred to as creative climate factors. The creative climate in this study is assessed by the ten factors of the Creative Climate Questionnaire (CCQ) forwarded by Ekvall *et al.* (1983) and Ekvall (1996). The factors are: challenge/motivation, freedom, idea support, liveliness/dynamism, playfulness/humour, debates, trust/openness, conflicts, risk taking and idea time.

Learning Organization

A learning organization is one in which learning and work are integrated in an ongoing and systematic fashion to support continuous improvement and includes learning at the individual, group, organization and global levels (Watkins 1996, p. 91). This learning occurs at all levels within the organization and outside the organization by Watkins' (1996) understanding and forms the basis needed for a learning organization. Watkins and Marsick (1996a, 1999) forward seven dimensions for a learning organization and these are known as learning organizational factors. The learning culture in this study is assessed by the seven dimensions of the Dimensions of the Learning Organization Questionnaire (DLOQ) forwarded by Watkins and Marsick (1996a). These are continuous learning, dialogue and inquiry, team learning, embedded systems, empowerment, system connection and strategic leadership.

Innovation

Innovation is defined as the process of creating a commercial product from invention (Hitt *et al.* 1999, p. 476). This definition which equates innovation to commercialization of invention (which includes improvement on already available product or service) is similar to those of several scholars (OECD 1997; Rickards 1985; Robbins and Decenzo 2001; Taylor 1991). When an organization innovates, it often does so both ways, which is in radical manner (technological) as well as non-technological (OECD 1997). The non-technological component of innovation in this study focuses on organizational innovation. Organizational innovation (OI) is included in this study together with technological innovation (TI) since OI occurs as part of technological innovation (OECD, 1997). The major component being emphasized in OI in this study is the managerial innovation or what some scholars would call administrative innovation (Sta Maria, 2000) which is the incremental (soft) side of innovation.

Technological Innovation

Technological innovation comprises implemented technologically new products and processes and significant technological improvements in products and processes (OECD 1997). Technological innovation is deemed implemented if it has been introduced to the market (product innovation) or used within a production process (process innovation).

Organizational Innovation

Organizational innovation in this study includes the implementation of advanced management techniques such as the practice of quality assurance program. In this study organizational innovation is reflected by the ISO 9000 program being adopted or implemented by the sampled organizations as well as the practice of the four basic pillars of TQM. The basic pillars of TQM are: (1) satisfying the customer, (2) effective management system/process such as ISO 9000 program, (3) teamwork practice and (4) improvement tools for continuous improvement. The component is being assessed by statements in the questionnaire relating to the ISO 9000

program implementation and its procedures as well as the basic pillars of TQM.

Justifiably and also for ease of use, the term innovation which is widely referred to in this writing includes the two major constructs of innovation, namely, technological innovation and organizational innovation.

METHODOLOGY

The study used a quantitative case method with multivariate statistical analysis, namely, multiple regression analysis and multiple correlation in an attempt to find answers to the research questions being posed. Multivariate analysis is suitable in analyzing phenomena either for discovery or hypothesis testing (Davis 2000). In this study, the analysis used was more for getting answers to the questions posed rather than for hypothesis testing. The survey case method as a form of causal-comparative is seen suitable for conducting studies that are seeking explanation on attitudes and behavior on the basis of data gathered at a point in time (Ary Jacobs and Razavieh 1990-pg. 407). The survey involved convenient sampling on a cross sectional basis which was deemed appropriate for making generalizations from samples being studied to the broader population group. Since the study involved three different variables which were not controlled or manipulated and which concerned the relationships among the variables and the ability to explain and predict values on a variable from the relationships, a multiple regression analysis is seen appropriate to use in summarizing Lehman's (1995) point of view. The independent variables were assumed to share very little variance with each other (not collinear) but together, they accounted for much of the variance in the dependent variable (Davis 2000). In addition, the multiple correlation analysis was conducted to obtain explanation of the relationship of the criterion variable on the entire set (not just one in particular) of the predictor variables. Thus, the analysis can explain how much of the total variation in the criterion variable, innovation, is accounted for by the independent variables taking the idea from Lehman's (1995) statement. Thus this study is also an explanatory study (Ary *et al.* 1990).

Along with the multiple regression analysis, ANOVA also used and a post hoc test was followed, where appropriate, to investigate differences among population means.

INSTRUMENTATION

Three instruments were used in this study, of which two were the ones developed by researchers for their previous work and have been validated. Two instruments which form part of the whole questionnaire were obtained from the original questionnaires developed by various scholars (Ekvall *et al.* (1983); Watkins and Marsick 1996a). All the statements were in the English language. The third instrument to assess innovation was developed by the researcher, Meriam Ismail.

The instrument used to measure the organizational climate factors is the Creative Climate Questionnaire (CCQ) developed by Ekvall *et al.* (1983). The ten factors are (i) challenge/motivation (5 items), (ii) freedom (5 items), (iii) idea support (5 items), (iv) liveliness/ dynamism (5 items), (v) playfulness/humour (5 items), (vi) debates (5 items), (vii) trust/ openness (5 items), (viii) conflicts (5 items), (ix) risk taking (5 items) and (x) idea time (5 items). The total items are fifty. The items consisted of statements which required the respondents to determine the degree to which the statements are true or otherwise of the organizational working climate occurring in the organizations. The scales used representing each statement is from a continuum of 0 to 3. The "0" represented a degree equivalent to "not at all applicable" and the "3" represented "applicable to a high degree". The CCQ was selected for this case study over other instruments because of its wide range of ten factors covering working climate within an organization both stimulating and hampering innovation. It was also selected because the factors were said to be able to explain effects on productivity, job satisfaction, profit, quality, innovation, well-being which in turn will give performance impact on the organizational resources both human and non-human according to Ekvall (1990) as cited by Ekvall (1996). The stability aspect of the reliability of the CCQ has been illustrated in a longitudinal study of a product development project in a high-tech company (Ekvall 1993) as cited by Ekvall (1996). The CCQ has previously been applied for use in many researches both in Europe and Asia, in particular in a study involving Swedish, German and Spanish organizations.

The instrument used to measure learning organization dimensions is the Dimensions of Learning Organization Questionnaire (DLOQ)

forwarded by Watkins and Marsick (1999) with each dimension having at least six items or more. The seven dimensions of learning organization with the relevant items are (1) continuous learning- 7 items, (2) dialogue and inquiry- 6 items, (3) team learning – 6 items, (4) embedded systems- 6 items, (5) empowerment- 6 items, (6) system connections- 6 items and (7) provide leadership- 6 items. The total items are forty-three. The instrument has been constructed in a way where each item requires the respondent to determine the degree to which the statement is true or otherwise of the extent of organizational approach practised in the organization. Each statement of either instrument will be measured on a common scale of 1 to 6 continuum ranging from "1" representing "almost never" to "6" representing "almost always". The DLOQ was selected for this study because it has been widely used in studies involving innovation in Malaysia and in the USA besides other parts of the world. It has proved to be a reliable measure of learning culture. The DLOQ has also been used in over 200 companies worldwide.

The innovation construct, on the other hand, contained two main constructs namely (I) technological product and process innovation (technological transfer & absorptive capacity, and diffusion of innovation), and (2) organizational innovation focusing on basic elements of TQM and quality assurance program such as ISO 9000 certification. There were thirty-two items to cover all the two sub constructs. The breakdown of the items were nineteen for technology transfer/absorptive capability, five for diffusion of innovation and eight for organizational innovation concentrating on aspects of ISO 9000 implementation and basic foundation of TQM. The thirty-two items on the two constructs of technological innovation and organizational innovation were constructed by the researcher Meriam Ismail and validated using factor analysis (Rotation method), based on the guidelines provided by Wong *et al.* (1999), OECD(1997) and MASTIC (1996). The statements required the respondents to determine the degree to which something is true or otherwise. All the items were constructed using rating scales on a continuum of 1 to 6. The "1" represented a degree equivalent to "almost always" and the "6" represented a degree equivalent to "almost never" of the statements. The scales "2", through "5" represented the degrees equivalent to between "almost always" to "almost never" of the statements. All items for the three constructs have been reviewed by two academics (Zain Mohamed and Ekvall) in the related fields (please see Appendix 1).

Finally, the fourth section contained eight items that seek information on the respondents' demographic backgrounds. This included gender, age in years, job category, education background, tenure of service with the organization, and the length of organization establishment in years.

MEASURES

Following are Tables 1 and 2 depicting reliability estimates for each of the ten factors of the CCQ and each of the seven dimensions of the DLOQ. The original estimates of the CCQ are determined by Ekvall and colleagues (Ekvall 1996). The reliability estimates for the innovation constructs are shown in Table 3 after a pilot test of the instrument was conducted during the case investigation.

The Cronbach Alpha's reliability index for this innovation questionnaire is .97. The constructs have proved consistently reliable with all the scales above the recommended .70 (Nunally 1978).

POPULATION AND SAMPLE

The sample of respondents from the case organization was obtained through convenient sampling (selected by the liaison person in the case organization) from a cross section of a population of about a hundred employees and was close to random sampling. A total of forty respondents from three major levels of employment namely top/senior management, middle/lower management/supervisory and the technical/administrative support staff responded to the questionnaire. All the responses were usable.

ANALYSIS

The analysis procedures conducted were in line with the research questions being posed. Two major types of analyses were conducted; one was the simple descriptive statistics and the other was the inferential statistics (multiple regression and ANOVA and independent T-Test). Before the data was analyzed, an exploratory data analysis EDA was first executed on the data. This is to determine whether the spread of data subscribed

TABLE 1
Reliability estimates for the original measures in the CCQ inventory

Subscale	Number of items	Cronbach's Alpha (original)	Cronbach's Alpha (from current pilot test)
Challenge/motivation	5	0.82	0.78
Freedom	5	0.74	0.68
Idea support	5	0.89	0.83
Liveliness/dynamism	5	0.79	0.76
Playfulness/humour	5	0.81	0.74
Debates	5	0.75	0.78
Trust/openness	5	0.79	0.55
Risk taking	5	0.73	0.68
Idea time	5	0.78	0.72
Conflicts	5	0.85	0.61
Total	50		

The overall reliability for 50 items of the CCQ in the pilot test was .94

TABLE 2
Reliability estimates for the measures in the DLOQ

Subscale	Number of items	Cronbach Alpha's (original)	Cronbach Alpha's (current pilot test)
Continuous Learning	7	0.81	0.83
Dialogue and Inquiry	6	0.87	0.89
Team Learning	6	0.86	0.87
Embedded Systems	6	0.82	0.81
Systems Connections	6	0.84	0.88
Empowerment	6	0.79	0.90
Provide Leadership	6	0.77	0.92
Total	43		

However the overall reliability for the 43 items of the DLOQ is .97

TABLE 3
Reliability estimates for the innovation construct

Subscale	Number of items	Cronbach Alpha's (original)
Tech. Transfer/Absorptive capability	19	0.96
Diffusion of innovation	5	0.93
Organizational innovation	8	0.94
Total items	32	

to the normality test, an assumption needed when running the inferential statistics. Another purpose for conducting EDA is to test the data for homogeneity of variance, a needed assumption for multiple regression analysis. From the EDA it was found that the normality assumption was met for all the three variables based on the Kolmogorov-Smirnov and Shapiro-Wilk's normality test: organizational climate for creativity (P=.200, P=.827), learning organization (P=.200, P= .643) variables and the innovation constructs (P=.200, P=.827). Then the data was assessed for collinearity. A highly correlated coefficient (near or equal to 1) between the two predictor variables denotes a high collinearity. In examining the data for collinearity for n=40,

the analysis revealed that the two predictor variables have a moderate collinearity from the table of coefficients analysis.

The research questions posed are:

1. To what extent do the factors of the variable organizational creative climate independently explain observed variances in organizational members' perceptions on innovation in the organization?
2. Which factor/s of the organizational creative climate variable is/are highly predictive of innovation?
3. To what extent do the dimensions of the learning organization variable independently explain observed variances in organizational members' perception on innovation in the organization?
4. Which dimension/s of the DLOQ is/are highly predictive of the innovation construct?
5. To what extent do both organizational creative climate and learning organization variables explain observed variances in organizational members' perceptions on innovation in the organization?
6. Which factor/s together from either criterion variables contributes highly to the prediction of innovation in the organization?
7. What are the differences in the members' perceptions on innovation, organizational creative climate and learning culture among the three levels of employee groups in the organization?
8. Are there any differences in the members' perceptions on innovation, organizational creative climate and learning culture between (1) males and female employees; (2) employees of different ages; (3) employees' education background; and (4) employees' tenure of service in the organization?

FINDINGS

The case organization is a medium sized consulting quantity surveying firm. The full time employees in the department are about a hundred. The demographics of the respondents can be summarized as made up of 55% male to female, 85% of top to middle/lower management level, the rest are supervisory and support staff. In addition, 70% are between the ages of 20 to 40 years, while the rest are above 41 years of age. Nearly 75% of the respondents have at least a bachelor's degree while the rest have at least an 'A' level equivalent. Forty-five percent of the respondents have served the organization for less than 5 years.

RESULTS

In answering research question 1, the multiple regression analysis was conducted involving the ten factors of organizational creative climate with the innovation construct. The findings revealed that the organizational climate for creativity factors did explain significantly observed variances of the members' perceptions on innovation as much as 55.6% with F value significant as seen from Table 4 and Table 5, using the enter method. However, none of the ten factors were seen to contribute significantly as reported from Table 7.

The analysis also found that the correlation of the organizational creative climate variable with the innovation construct was moderate

TABLE 4
Descriptives- innovation level and organizational climatic factors

	Mean	Std. Deviation	N
overall innovation	133.63	25.99	40
total challenge	8.90	1.82	40
total conflict	9.20	1.87	40
total debate	4.85	2.79	40
total freedom	7.18	2.55	40
total idea supp.	8.68	2.29	40
total idea time	6.50	2.15	40
total liveliness	7.60	2.56	40
total playfulness	8.18	2.83	40
total risk	7.70	2.34	40
total trust	6.88	2.58	40

TABLE 5
Model summary of the multiple regression analysis of the organizational climatic factors with innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745	.556	.402	20.09

a Predictors: (Constant), total trust, total debate, total idea supp., total risk, total challenge, total freedom, total liveliness, total playfulness, total idea time, total conflict
b Dependent Variable: overall innovation

TABLE 6
ANOVA- Organizational climate for creativity factors with innovation

Model		Sum of Squares	df	Mean Square	F	Sig.
OCC factors	Regression	14635.444	10	1463.544	3.627	.003
	Residual	11701.931	29	403.515		
Total		26337.375	39			

a Predictors: (Constant), total trust, total debate, total idea supp., total risk, total challenge, total freedom, total liveliness, total playfulness, total idea time, total conflict
b Dependent Variable: overall innovation

TABLE 7
Coefficients of relationships between organizational creative climate (OCC) factors and innovation

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
OCC	(Constant)	65.374	21.615		3.024	.005		
	total challenge	3.270	3.475	.229	.941	.354	.258	3.879
	total conflict	-4.786	4.416	-.344	-1.084	.287	.152	6.593
	total debate	.560	1.333	.060	.420	.678	.750	1.334
	total freedom	3.324	2.080	.326	1.598	.121	.368	2.720
	total idea supp.	1.775	2.095	.157	.847	.404	.449	2.228
	total idea time	-.616	3.218	-.051	-.191	.850	.216	4.619
	total liveliness	2.998	2.098	.295	1.429	.164	.359	2.788
	total playfulness	2.054	2.470	.224	.832	.412	.212	4.713
	total risk	9.432E-02	2.108	.009	.045	.965	.424	2.361
	total trust	.714	2.891	.071	.247	.807	.185	5.392

a Dependent Variable: overall innovation

(r=.673) and significant at (P<.01). Table 8 shows the detailed correlation of each factor with innovation. Table 9 reflects the amount of collinearity present among the factors of the organizational creative climate. The condition index was very much less than 30.0 (threshold value) which means the two CCQ factors have a low degree of collinearity with each other. In addition, results from Table 7 show that the VIF values of the factors are much less than 10.0 which indicated low collinearity among the factors.

In answering research question 2, a stepwise regression was conducted to determine which factor/s is/are having high predictive power on the dependent variable, innovation. There were two factors of such nature, namely, 'Freedom' and 'Liveliness/dynamism' as shown in Table 10 and Table 11 where the values of t were significant (P<.05) for both factors, at 2.767 and 2.641 respectively.

In answering research question 3, the multiple regression analysis was again conducted involving the seven dimensions of the learning

TABLE 8
Correlations of the organizational creative climate factors with innovation construct

CCQ	Correlations index (r)	P
Climate of Challenge/motivation	.738**	.000
Climate of conflicts	.726**	.000
Climate of debates	.239	.137
Climate of freedom	.773**	.000
Climate of idea time	.833**	.000
Climate of idea support	.521**	.001
Climate of liveliness/dynamism	.766**	.000
Climate of playfulness/humor	.786**	.000
Climate of risk taking	.549**	.000
Climate of trust	.824**	.000

** Correlation is significant at the .01 level (2-tailed)

TABLE 9
Collinearity diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	total freedom	total liveliness
1	1	1.944	1.000	.03	.03	
	2	5.645E-02	5.868	.97	.97	
2	1	2.901	1.000	.01	.01	.01
	2	5.865E-02	7.033	.95	.32	.08
	3	4.019E-02	8.496	.04	.67	.91

a Dependent Variable: overall innovation

TABLE 10
ANOVA: Organizational creative climate with innovation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10827.389	1	10827.389	26.527	.000
	Residual	15509.986	38	408.158		
	Total	26337.375	39			
2	Regression	13287.843	2	6643.921	18.838	.000
	Residual	13049.532	37	352.690		
	Total	26337.375	39			

a Predictors: (Constant), total freedom
b Predictors: (Constant), total freedom, total liveliness
c Dependent Variable: overall innovation

organization with the innovation construct. The findings revealed that the learning organization dimensions did explain significantly observed variances of the members' perceptions on innovation as much as 73.0% as seen from Tables 12, 13, 14 respectively. The dimension 'Dialogue and Inquiry' (total dialogue) seemed to be having significant relationship (P<.05) as seen from coefficients values (t= 2.222) in Table 15 below. This meant that 'Dialogue and Inquiry' could be the dimension which has a high predictive power on innovation. To confirm this assumption, the model was tested once more using the stepwise method.

TABLE 11
Coefficients of the relationship between the organizational creative climate factors and innovation (stepwise)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	86.759	9.644		8.996	.000		
	total freedom	6.532	1.268	.641	5.150	.000	1.000	1.000
2	(Constant)	74.228	10.143		7.318	.000		
	total freedom	4.124	1.490	.405	2.767	.009	.626	1.598
	total liveliness	3.922	1.485	.386	2.641	.012	.626	1.598

a Dependent Variable: overall innovation

TABLE 12
Descriptives: Innovation construct and the dimensions of learning organization

	Mean	Std. Deviation	N
overall innovation	133.63	25.99	40
total continuous learn	7.83	2.61	40
total dialogue	26.15	5.48	40
total embedded sys	23.23	4.92	40
total empowerment	22.03	5.38	40
total leader	21.43	5.74	40
total system conn	20.35	5.48	40
total team learning	23.20	5.18	40

TABLE 13
Model summary of the multiple regression analysis of the learning organization dimensions with innovation construct

Model Summary Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854	.730	.671	14.91

a Predictors: (Constant), total team learning, total continuous learn, total empowerment, total dialogue, total embedded sys, total system conn., total leader
b Dependent Variable: overall innovation

TABLE 14
ANOVA- Dimensions of the learning organization with innovation construct

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19222.933	7	2746.133	12.352	.000
	Residual	7114.442	32	222.326		
	Total	26337.375	39			

a Predictors: (Constant), total team learning, total continuous learn, total empowerment, total dialogue, total embedded sys. total system conn., total leader
b Dependent Variable: overall innovation

TABLE 15
Coefficients of relationship between learning dimensions and innovation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
DLOQ factors	(Constant)	44.370	13.198	3.362	.002			
	total continuous learn	.435	1.439	.044	.302	.765	.404	2.476
	total dialogue	-1.811	.815	-.382	-2.222	.034	.286	3.499
	total embedded sys	1.845	.983	.349	1.877	.070	.244	4.106
	total empowerment	.598	.930	.124	.643	.525	.228	4.384
	total leader	1.839	1.002	.406	1.835	.076	.172	5.802
	total system conn	1.062	.931	.224	1.141	.262	.219	4.575
	total team learning	.697	.869	.139	.802	.429	.281	3.560

a Dependent Variable: overall innovation

TABLE 16
Correlations of DLOQ dimensions with innovation construct

DLOQ	Correlation index (r)	P
Continuous learning	.420**	.003
Dialogue & inquiry	.511**	.000
Embedded systems	.700**	.000
Empowerment	.696**	.000
Leadership	.798**	.000
Systems connection	.722**	.000
Team learning	.647**	.000

** Correlations significant at the .01 level (2-tailed)

The results from Table 13 revealed that the seven dimensions of the learning organization significantly explained 73.0% of the variances in innovation ($P<.05$). In addition, the Pearson-Correlation coefficients for six of the seven dimensions against innovation are significantly high at $r>0.5$ (Table 16) with the highest being Strategic Leadership ($r=.798$). The values of VIF in Table 15 were less than 10.0, the threshold value which indicated the collinearity among the seven dimensions of the DLOQ were low.

In answering question 4, the model was tested again to determine which of the seven dimensions of the learning culture is/are highly predictive of the variance in innovation. In the stepwise method, the results of the analysis were presented in Table 17 and Table 18. The single dimension providing 'Strategic Leadership' (total leader) was seen as uniquely contributing significantly to the variance in innovation with the t value larger than 2 (8.159) from Table 18.

TABLE 17
ANOVA: Learning dimensions with innovation

Model		Sum of Squares	df	Mean Square	F	Sig.
DLOQ factors	Regression	16766.022	1	16766.022	66.564	.000
	Residual	9571.353	38	251.878		
	Total	26337.375	39			

a Predictors: (Constant), total leader
b Dependent Variable: overall innovation

TABLE 18
Coefficients of relationship between learning dimensions and innovation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
DLOQ factors	(Constant)	56.198	9.816		5.725	.000		
	total leader	3.614	.443	.798	8.159	.000	1.000	1.000

a Dependent Variable: overall innovation

In answering research question 5, a multiple regression analysis was undertaken with both sets of independent variables. The results were shown in Tables 19, 20, and 21 respectively. The findings revealed that both sets of variables together explained 80.4% of the variance in innovation.

From the tables above, it was observed that both sets of the independent variables together significantly explained 80.4% of the variance in the innovation construct, a higher value than either of the separate variables alone. Recall that organizational creative climate factors did contribute significantly (55.6%) to the explanation of the variance in innovation and the learning organization dimensions on its own contributed 73.0% of the variance in innovation. But when both variables were taken into consideration together, an increase in the explanation of the variance in innovation was recorded. In the full model the learning organization dimension, 'Dialogue and Inquiry' was seen as having a significantly high predictive power on the dependent variable (Table 21) with absolute t value of 2.709. To confirm whether the learning dimension of 'Dialogue and Inquiry' was the one having the highest predictive power of the variance in innovation based on the full model, a stepwise regression was conducted. From this model a regression equation was obtained. The results of the analysis results are shown in Tables 22, Table 23 and Table 24 below.

From Table 22 and Table 23 and the coefficient of Table 24, 'Strategic Leadership' (total leader) was the single predictor factor of the full model which seemed to uniquely contribute to the variance in innovation. Thus the full regression model equation obtained which could be used to predict the dependent variable given the values of the independent variables within this case organization is:

Innovation = 56.198 + .798 (strategic leadership)

TABLE 19
Model summary of the multiple regression analysis using both sets of independent variables

Model	R	Square	Adjusted R Square	Std. Error of the Estimate
1	.897	.804	.653	15.31

TABLE 20
ANOVA: Organizational creative climate factors, learning organization dimensions with innovation construct

Model		Sum of Squares	df	Mean Square	F	Sig.
OCC with DLOQ factors	Regression	21178.252	17	1245.780	5.312	.000
	Residual	5159.123	22	234.506		
	Total	26337.375	39			

a Predictors: (Constant), team, overall conflict, overall dynamism, system connection, overall risk taking, overall humour, overall trust, overall freedom, overall idea support, embedded system, overall time, continuous learning, overall challenge, overall debates, leadership, dialogue, empowerment

b Dependent Variable: overall innovation

TABLE 21
Coefficients: Relationship between creative climate factors, learning dimensions with innovation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
OCC With DLOQ factors	(Constant)	48.463	18.512		2.618	.016		
	total continuous learn	.519	1.816	.052	.286	.778	.268	3.736
	total dialogue	-2.986	1.102	-.630	-2.709	.013	.165	6.065
	total embedded sys	2.301	1.146	.436	2.008	.057	.189	5.289
	total empowerment	.575	1.182	.119	.487	.631	.149	6.710
	total leader	1.910	1.304	.422	1.464	.157	.107	9.316
	total team learning	1.060	1.057	.212	1.002	.327	.200	4.999
	total system conn	1.192	1.096	.252	1.088	.289	.166	6.011
	total challenge	3.448	2.946	.242	1.171	.254	.209	4.796
	total conflict	-4.943	3.547	-.356	-1.394	.177	.137	7.319
	total debate	1.046	1.276	.112	.820	.421	.475	2.103
	total freedom	2.835	1.843	.278	1.538	.138	.272	3.677
	total idea supp.	2.471	1.863	.218	1.326	.198	.330	3.032
	total idea time	-5.733	2.884	-.474	-1.988	.059	.157	6.386
	total liveliness	-.136	1.932	-.013	-.071	.944	.246	4.068
	total playfulness	1.986	1.957	.216	1.015	.321	.196	5.094
	total risk	-1.827	1.916	-.165	-.953	.351	.298	3.357
	total trust	1.072	2.598	.107	.413	.684	.133	7.493

a Dependent Variable: overall innovation

TABLE 22
Model summary of the multiple regression analysis using both sets of independent variables (Stepwise)

Model	R	Square	Adjusted R Square	Std. Error of the Estimate
1	.798	.637	.627	15.87

Predictors: (Constant), total leader
Dependent variable: overall innovation

TABLE 23
ANOVA: Two sets of independent variables with innovation

Model		Sum of Squares	df	Mean Square	F	Sig.
OCC with DLOQ factors	Regression	16766.022	1	16766.022	66.564	.000
	Residual	9571.353	38	251.878		
	Total	26337.375	39			

a Predictors: (Constant), total leader
b Dependent Variable: overall innovation

This means that the innovation occurring in the case organization is a function of the single learning factor of 'strategic leadership'. Innovation in this organization is more influenced by the strategic leadership more than the rest of the other learning factors or creative climate factors; which indicates that the leadership of the top and maybe the middle management is the driving force behind any innovative activities occurring within the organization.

TABLE 24
Coefficients of relationship between two sets of independent variables and innovation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
OCC With DLOQ	(Constant)	56.198	9.816		5.725	.000		
	total leader	3.614	.443	.798	8.159	.000	1.000	1.000

a Dependent Variable: overall innovation

The results from Table 24 also show that the learning dimension Total Leader (Beta=.798) alone has a significantly high predictive power on innovation construct which answered research question 6.

In answering research question 7, the respondents were grouped into different job hierarchical levels. Group 1 consisted of top/ senior management levels in the organization. Group 2 comprised the middle/lower managers and supervisors and group 3 was the support/ administrative staff who were non-executives all of whom have at least 'A' level academic qualification or equivalent. The analysis used one-way analysis of variance (one-way ANOVA) to determine whether there existed significant difference on perceptions towards innovation. The results were shown in Tables 25 and 26.

From the results above it could be deduced that there was no statistically significant difference in perceptions towards innovation by the three different groups (P>.05).

From the results of ANOVA in Table 26, it can be deduced that the perceptions on organizational creative climate in the organization by the three different groups were not significantly different.

The results from ANOVA analysis in Table 27 revealed that there is no statistically significant difference on the perceptions on organizational learning from the three groups of employees. For the three different ANOVA analyses above, the Levene's test of homogeneity of variance was met.

TABLE 25
ANOVA overall innovation

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		1408.504	2	704.252	1.045	.362
	Linear Term	Unweighted	940.900	1	940.900	1.397	.245
		Weighted	1139.613	1	1139.613	1.691	.201
		Deviation	268.891	1	268.891	.399	.531
Within Groups			24928.871	37	673.753		
Total			26337.375	39			

TABLE 26
ANOVA - overall climate

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		251.174	2	125.587	.469	.630
	Linear Term	Unweighted	5.136	1	5.136	.019	.891
		Weighted	8.485E-02	1	8.485E-02	.000	.986
		Deviation	251.089	1	251.089	.937	.339
Within Groups			9916.426	37	268.012		
Total			10167.600	39			

TABLE 27
ANOVA- overall learning

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		165.803	2	82.901	.279	.758
	Linear Term	Unweighted	36.736	1	36.736	.124	.727
		Weighted	61.039	1	61.039	.206	.653
		Deviation	104.764	1	104.764	.353	.556
Within Groups			10985.972	37	296.918		
Total			11151.775	39			

In answering research question 8, ANOVA and independent sample T-Test were used again. All the analyses revealed no significant differences of the factors on those three perceptions.

DISCUSSIONS AND CONCLUSION

The rapid changes in the global environment is likely to force organizations to constantly innovate by Organizational Development (OD) theory so as to gain sustainable competitive advantage (Hitt *et al.* 1999; Porter 1985; Zheng and Das 2000).To innovate, organizations have to change in various ways and this needs to be done by having certain creative climates to help foster organizational members in facilitating the change efforts (Amabile 1999; Axtel *et al.* 2000; Ekvall *et al.* 1983; Zain and Rickards 1995). To innovate, organization members must also be committed to learning at a faster rate in order to succeed over their competitors in the change process (Argyris and Schon 1978; Drucker 1988; Garvin 1993; Nonaka and Takeuchi 1995; Senge 1990; Watkins and Marsick 1996a). The success of the learning depends on the structure and strategies (Donellon 1996) present in the organizational system which the seven dimensions of a learning organization can cater for.

The findings from the analysis were crucial for exploring the relationship between organizational climates for creativity and learning culture on innovation constructs. Various numbers of practical implications could be drawn from the findings which could be of use for the case organization. For example, one of the findings revealed that the organizational creative climate in this case organization did significantly contribute to predicting innovation among employees with the factors 'Freedom' and 'Liveliness/dynamism' as being good predictors; but the learning culture, particularly one which was related to 'Strategic Leadership' being practised within and outside the case organization concerned, on the other hand, contributed tremendously to the innovation as perceived by the employees of various levels. This could indicate that this case organization when it came to innovation was primarily motivated by the top management more than by the employees down the line.

The findings also implied that other factors from the organizational creative climate with the exception of climate of freedom and a climate liveliness/dynamism should be given more emphasis in future to precipitate the innovation to occur. In addition, the other six learning factors besides "Strategic Leadership" should also be given more attention for similar reasons.

In summary, it can be concluded that for this particular organization, the learning organization dimension of 'Strategic Leadership' had a high predictive power on innovation activities occurring within the organization as compared to the organizational creative climate factors. It could be concluded also that the case organization did to a certain extent inculcate significantly a climate of creativity for the members to innovate and did to a larger extent inculcate a culture of learning among the members.

Further analyses also showed that there were no significant differences in members' perceptions on innovation, creative climate or learning culture from the three job levels: top management, middle management and the staff down the line. This meant that almost all members have the same perception on those ideas.

RECOMMENDATIONS

For innovation to occur at a faster and continuous rate, the presence of creative climate and a learning culture should be encouraged. In

this regard, the organization should be looking into ways of improving its creative climate by: (1) making the climate at work more challenging/motivating which meant getting emotional involvement of the members in the organization's operations and goals; (2) making the climate more open and trustworthy through the presence of emotional safety in relationships; (3) the management giving more time for members to elaborate on new ideas; (4) the members displaying more spontaneity and ease in actions; (5) reducing the presence of emotional tensions (conflicts) during interactions; (6) having the management give more support to new ideas brought up; (7) debating on viewpoints and on ideas forwarded; (8) encouraging members to take risks on opportunities.

Although the learning culture seemed to be contributing substantially towards the innovation in the case organization, the case organization should improve its learning on these areas as well as provide a strong strategic leadership. The areas are (1) giving more emphasis to individual learning so that learning can occur at a continuous basis; (2) by giving emphasis on team learning; (3) by giving emphasis on organizational learning (embedded systems and systems connection) through environment scanning and networking, and capturing learning on the organization systems; (4) by empowering its members; and (5) by encouraging dialogue and inquiry to occur among them.

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APPENDIX 1

Results of POST HOC factor analysis of the innovation construct

Items	Technological innovation		Organizational innovation
	Factor 1	Factor 2	Factor 3
Technological transfer (assimilation)			
1. Absorpcap5	**.790**	.204	.230
2. Absorpcap6	**.728**	.265	.358
3. Absorpcap4	**.727**	.377	.109
4. Absorpcap9	**.723**	.396	.197
5. Absorpcap2	**.722**	.250	.347
6. Absorpcap8	**.715**	9.207E-02	.301
7. Absorpcap10	**.701**	.392	.160
8. Absorpcap3	**.678**	.184	.387
9. Absorpcap7	**.677**	.311	.325
10. Absorpcap14	**.669**	.285	.322
11. Absorpcap11	**.666**	.280	.256
12. Absorpcap1	**.653**	9.702E-02	.416
13. Absorpcap13	**.577**	.486	.323
Diffusion of innovation			
14. Diffussion3	.259	**.786**	.170
15. Diffussion2	3.683E-02	**.780**	9.114E-02
16. Absorpcap17	.136	**.751**	.242
17. Diffussion1	.279	**.744**	.239
18. Absorpcap19	.338	**.642**	.294
19. Absorpcap16	.200	**.624**	.192
20. Diffussion5	.406	**.614**	.346
21. Absorpcap18	.392	**.607**	.238
22. Diffussion4	.379	**.585**	.363
23. Absorpcap12	.402	**.566**	.225
24. Absorpcap15	.436	**.548**	.255
Organizational innovation			
25. ISO2	.284	.264	**.823**
26. ISO3	.308	.216	**.819**
27. ISO1	.283	.305	**.794**
28. ISO7	.271	.209	**.791**
29. ISO6	.384	.201	**.776**
30. ISO8	.317	.277	**.759**
31. ISO4	.277	.349	**.749**
32. ISO5	.333	.437	**.520**
Eigenvalue	17.121	2.284	1.978
Cumulative percent variance	53.502	7.139	6.182

N = 259

Extraction method: Principal component analysis.

Rotation method: Varimax with Kaiser Normalization

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Perbandingan Pencapaian Kognitif, Afektif dan Kompetensi Pelajar Program Keusahawanan Remaja yang Berlainan Latar Belakang Keluarga

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Kata kunci: Pencapaian kognitif, afektif, kompetensi pelajar keusahawanan

ABSTRAK

Keadaan persekitaran yang sesuai berkemungkinan besar dapat mengembangkan bakat dan kebolehan seseorang ke tahap tinggi dalam bidang-bidang yang diperlukan masyarakat. Persekitaran yang dimaksudkan adalah berkaitan dengan latar belakang seseorang. Banyak kajian menyatakan latar belakang serta pegangan tradisi seseorang memberi kesan terhadap pembentukan peribadi seseorang. Oleh itu, kajian ini bertujuan meninjau sejauh mana latar belakang berupaya mempengaruh pencapaian kognitif, afektif dan kompetensi pelajar dalam bidang keusahawanan. Kajian ini menggunakan kaedah tinjauan sebagai kaedah kajian. Set soal selidik dan ujian telah digunakan untuk menguji pencapaian kognitif, afektif dan kompetensi. Seterusnya, perbandingan pencapaian kognitif, afektif dan kompetensi pelajar Program Keusahawanan Remaja yang berlainan latar belakang keluarga telah dibuat melalui ujian MANOVA. Ujian ini telah digunakan dalam usaha mengenal pasti persamaan dan perbezaan yang mungkin wujud dalam pencapaian pelajar. Hasilnya, dapatan menunjukkan tidak terdapat perbezaan signifikan dalam pencapaian pelajar yang mempunyai latar belakang keluarga yang berbeza.

ABSTRACT

A conducive environment may develop one's potential and ability to the needs of the society according to their respective fields. The environment refers to students' background. Studies have shown that one's background and beliefs (culture) affect the development of one's personality. Thus, the purpose of this research was to determine how student's background may influence their cognitive, affective and competency achievement in entrepreneurship. Samples were from the Adolescent Entrepreneurship Program. A questionnaire and a test were employed as the survey instrument in order to get student's achievement in cognitive, affective and competency. In addition a comparison of student's achievement in cognitive, affective and compentency were conducted in order to see their similarities and differences. The MANOVA technique was employed to gather this information. The results of this research indicated no significant different between types of paternal employment with student's achievement in general.

PENDAHULUAN

Bloom (1985) mengatakan bahawa dalam keadaan yang sesuai, bakat, kebolehan dan pencapaian seseorang berkemungkinan besar berkembang mengikut peluang-peluang pembelajaran yang ditawarkan di persekitarannya. Persekitaran yang dimaksudkan di sini berkait rapat dengan latar belakang seseorang. Ini ternyata benar apabila banyak kajian menunjukkan latar belakang serta pegangan tradisi sesebuah keluarga penting dalam pembentukan peribadi seseorang. Sehubungan itu, ramai berpendapat bahawa seseorang yang mempunyai keluarga terlibat dalam perniagaan atau bekerja sendiri akan lebih terdorong ke bidang keusahawanan.

Seterusnya Rexroad (1985), Metcalf (1985), Mann (1990) dan Robiah (1990) didapati

mempunyai pendapat yang selari dengan Bloom (1985). Kesemua mereka berpendapat bahawa perkembangan bakat di kalangan pelajar banyak dipengaruhi oleh latar belakang keluarga, terutama dari segi sikap mereka terhadap sesuatu perkara. Pendeknya, walaupun tidak terlibat secara langsung dalam sebarang aktiviti yang disertai anak-anak mereka, golongan ibu bapa dikenal pasti sebagai mempunyai pengaruh besar terhadap pencapaian pelajar terutama dalam pencapaian akademik. Malah, latar belakang keluarga mampu memberi persekitaran yang boleh mendorong seseorang mempelajari sesuatu perkara, contohnya urusan perniagaan. Dengan kata lain, keluarga terutamanya ibu bapa merupakan pendorong utama kejayaan seseorang dalam menguasai sesuatu perkara.

Kajian Bannock dan Stanworth (1990) mendapati latar belakang keluarga berupaya mempengaruhi pelajar. Umpamanya, jika ibu bapa pelajar terlibat dalam perniagaan, pelajar juga akan terdorong kepada bidang perniagaan. Ini jelas apabila dapatan kajian mereka menunjukkan bahawa tahap pencapaian golongan pelajar yang berlatarbelakangkan keluarga usahawan dalam ujian berkaitan keusahawanan, sama ada dari segi pencapaian kognitif, afektif dan kompetensinya adalah lebih baik berbanding pelajar yang tidak mempunyai latar belakang keusahawanan.

Selain faktor keluarga, faktor jantina pelajar juga sering kali dikaitkan dengan tahap pencapaian pelajar dalam ujian pencapaian keusahawanan baik dari aspek kognitif, afektif dan kompetensi. Banyak kajian menunjukkan bahawa terdapat sedikit perbezaan antara pencapaian pelajar lelaki dan pelajar perempuan dalam ujian berkaitan keusahawanan. Contohnya, kajian Wee Liang Tan, Siew Lai Kuan, Wei Hong Tan dan Siow Ching Wong (1995) secara exploratori yang menguji ciri-ciri keusahawanan di kalangan pelajar di Singapura. Terdapat enam ciri keusahawanan yang dikaji, iaitu berani menanggung risiko, kawalan dalaman diri, inovatif, kepimpinan, berkeyakinan dan keinginan untuk cemerlang. Hasil kajian menunjukkan 47% daripada responden (n = 240 pelajar) memiliki ciri-ciri keusahawanan; dan hampir 51% responden tersebut adalah pelajar lelaki. Bagaimanapun, ujian Khi-Kuasa dua menunjukkan tidak terdapat perbezaan yang signifikan antara pelajar lelaki dan perempuan.

Sementara, kajian Sharifah Kamaliah (1996) terhadap 390 pelajar di Daerah Hulu Langat yang mengukur 13 ciri keusahawanan di kalangan pelajar Tingkatan 4 menunjukkan terdapat perbezaan yang signifikan antara ciri-ciri keusahawanan pelajar lelaki dan pelajar perempuan (ujian-t =-2.49, $p<0.05$). Dapatan yang sama juga diperoleh dalam kajian Zaidatol Akmaliah, Mohd. Majid, Abd. Rahim dan Genevieve (1998). Kajian mereka terhadap 1336 pelajar yang dijalankan secara tinjauan mendapati bahawa terdapat perbezaan yang signifikan antara sikap pelajar lelaki dengan sikap pelajar perempuan terhadap keusahawanan (ujian-t =5.09, $p<0.05$).

Oleh itu, huraian serta dapatan di atas menunjukkan bahawa secara keseluruhannya jantina dan latar belakang keluarga pelajar ada mempunyai kaitan terhadap pencapaian pelajar dalam bidang keusahawanan, baik dari segi pencapaian kognitif, afektif dan kompetensinya.

TUJUAN KAJIAN

Kajian ini bertujuan untuk meninjau sejauh mana faktor latar belakang pelajar berupaya mempengaruhi pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar Program Usahawan Muda (PUM) dan Program Tunas Bistari (PTB) dalam bidang berkaitan keusahawanan. Secara terperinci, kajian ini ingin melihat sama ada terdapat atau tidak perbezaan pencapaian tingkah laku kognitif, afektif dan kompetensi keusahawanan antara pelajar lelaki dengan pelajar perempuan PUM dan PTB. Begitu juga, dengan persamaan dan perbezaan yang mungkin wujud antara pelajar yang mempunyai latar belakang keluarga berbeza.

OBJEKTIF KAJIAN

Secara terperinci, objektif kajian adalah untuk:

1. Mengenal pasti perbezaan pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar PUM dan PTB.
2. Mengenal pasti perbezaan pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar lelaki dan pelajar perempuan PUM dan PTB.
3. Mengenal pasti perbezaan pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar yang mempunyai latar belakang keluarga yang berbeza.

Hipotesis Kajian

Ho1: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar PUM dan PTB.

Ho2: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar lelaki dan pelajar perempuan PUM dan PTB.

Ho3: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar PUM dan PTB yang berlainan latar belakang keluarga.

METODOLOGI

Kajian ini menggunakan kaedah tinjauan sebagai kaedah kajian. Pilihan terhadap kaedah ini dibuat kerana ia bersesuaian dengan kehendak pengkaji yang ingin mengenal pasti persamaan dan perbezaan yang mungkin wujud dalam pencapaian tingkah laku kognitif, afektif, kompetensi keusahawanan pelajar PUM dan PTB berdasarkan latar belakang pelajar. Menurut Fink dan Kasecoff (1985), kaedah tinjauan merupakan satu bentuk yang sesuai digunakan dalam kajian yang bertujuan mencari serta mengumpul maklumat. Tambah mereka lagi, kaedah ini sesuai digunakan dalam menerangkan status sesuatu perkara, mempamerkan perubahan dan juga dalam membuat perbandingan.

Instrumen

Kajian ini menggunakan soal selidik dan ujian pencapaian bagi menguji hipotesis kajian. Bagi menguji pencapaian tingkah laku afektif, soal selidik yang diadaptasi daripada Zaidatol Akmaliah *et al.* (1998) telah digunakan. Soal selidik ini mengkehendaki pelajar menentukan sendiri bagaimana perasaan mereka terhadap sesuatu situasi secara jujur, dan skala likert lima poin digunakan untuk menunjukkan persetujuan dan sebaliknya bagi setiap pernyataan. Skala likert lima poin itu adalah: 1 = Sangat Tidak Setuju, 2 = Tidak Setuju, 3 = Kurang Setuju, 4 = Setuju, dan 5 = Sangat Setuju. Berdasarkan jawapan tersebut, dijangka tingkah laku afektif akan dapat diukur mengikut persepsi pelajar. Seterusnya, tahap pencapaian tingkah laku afektif akan diukur dengan berpandukan kepada jadual interpretasi skor min seperti jadual berikut.

JADUAL 1
Jadual interpretasi skor min dimensi tingkah laku afektif

Skor min	Interpretasi skor min
1.00 - 2.00	Rendah
2.01 – 3.00	Sederhana rendah
3.01 – 4.00	Sederhana tinggi
4.01 – 5.00	Tinggi

Bagi pencapaian tingkah laku kognitif dan kompetensi keusahawanan, instrumen ujian digunakan oleh pengkaji. Set ujian ini merangkumi semua aspek yang telah dipelajari oleh pelajar sepanjang menyertai program, dan merupakan cara terbaik untuk mengukur pengetahuan dan kefahaman pelajar (Collin 1991). Bagi pembinaan ujian tingkah laku kompetensi keusahawanan, senarai kompetensi Bettencourt dalam Zaidatol Akmaliah (1992) telah digunakan. Senarai kompetensi ini sesuai digunakan kerana ia telah dibentuk khas untuk pelajar sekolah menengah. Pembinaan ujian tingkah laku kognitif pula adalah berdasarkan kepada perkara-perkara yang telah dipelajari pelajar. Untuk tujuan mengenal pasti tahap pencapaian tingkah laku kognitif dan kompetensi keusahawanan pelajar, skala permarkahan yang sering digunakan dalam peperiksaan di sekolah dijadikan sebagai panduan. Justeru, skala pemarkahan dari Jabatan Pendidikan Negeri Selangor digunakan sebagai panduan pemberian markah lulus atau gagal kepada pelajar. Skala pemarkahan tersebut adalah seperti Jadual 2 di bawah:

JADUAL 2
Skala pemarkahan dimensi tingkah laku kognitif dan kompetensi keusahawanan

Skor markah	Interpretasi peratus skor
40% ke bawah	Gagal
41% - 49%	Lemah
50% - 64%	Sederhana
65% - 79%	Baik
80% - 100%	Cemerlang

Sampel Kajian

Secara keseluruhan populasi kajian terdiri daripada ahli lembaga pengarah (ALP) Program

Usahawan Muda (PUM) dan Program Tunas Bistari (PTB). PUM ialah program keusahawanan remaja yang dianjurkan oleh Kementerian Pembangunan Usahawan dengan kerjasama Kementerian Pendidikan Malaysia. PTB pula merupakan program keusahawanan remaja yang dianjurkan oleh Institut Pembangunan Pengurusan Johor, sebuah syarikat dalam Perbadanan Johor dengan kerjasama Jabatan Pendidikan Negeri Johor.

Penggunaan ALP dibuat kerana tidak semua negeri memberi kursus keusahawanan kepada semua ahli programnya, dan kebanyakannya kursus-kursus hanya ditawarkan kepada ALP program sahaja. Justeru, daripada jumlah ahli seramai 7,307 orang bagi PUM dan 765 orang bagi PTB, hanya 2050 orang PUM dan 150 orang PTB sahaja yang layak menjadi kumpulan sasaran (Laporan Tahunan Kementerian Pembangunan Usahawan dan Institut Pembangunan Pengurusan Johor 1999).

Setelah mengenal pasti kumpulan sasaran kajian, barulah pemilihan sampel dilaksanakan. Oleh kerana mempunyai kumpulan sasaran yang ramai dan terdapat di serata tempat, proses pemilihan sampel dibuat dalam dua peringkat. Peringkat pertama ialah peringkat di mana pemilihan sampel dibuat secara rawak berasaskan pensampelan berkelompok (cluster sampling) iaitu dalam bentuk zon. Dalam peringkat ini beberapa negeri/daerah dikumpulkan mengikut zon seperti zon utara, zon tengah, zon barat, zon timur dan zon selatan. Menurut Reaves (1992) dan Cohen dan Manion (1994), pensampelan secara berkelompok sesuai jika populasi besar dan bertaburan di serata tempat. Selain itu, Reaves juga mengatakan bahawa pensampelan cara ini dapat menjimatkan masa serta mengurangkan pelbagai masalah. Peringkat kedua ialah peringkat di mana pengkaji akan membuat pemilihan secara rawak bagi tujuan mengenal pasti negeri/daerah yang akan diambil bagi mewakili setiap zon. Setelah negeri/daerah dikenal pasti, sampel kajian akan diambil dari semua sekolah di negeri/daerah yang terpilih serta terlibat dengan program keusahawanan remaja.

Dalam menentukan saiz sampel pula, pengkaji telah menggunakan jadual penentuan Reaves (1992) dengan berasaskan jumlah kumpulan sasaran. Berpandukan jadual tersebut, seramai 339 ALP PUM dan 110 ALP PTB telah dipilih sebagai sampel kajian. Namun bagi PTB ini, pengkaji telah mengambil kesemua ALPnya (150 orang) sebagai sampel kajian kerana jumlah kumpulan sasarannya yang sedikit.

Tata cara Penganalisisan Data

Data kajian dikumpul mengikut set instrumen seperti soal selidik dan ujian. Setelah semua instrumen diperoleh, proses pengekodan dijalankan untuk memudahkan aktiviti memasukkan data ke dalam program SPSS versi 10. Proses penganalisisan data melibatkan dua jenis statistik iaitu deskriptif dan inferensi.

Statistik deskriptif yang digunakan ialah peratusan, min dan sisihan piawai. Manakala, statistik inferensi pula digunakan untuk melihat persamaan dan perbezaan seperti analisis varians berganda (MANOVA).

DAPATAN KAJIAN

Perbandingan pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar (pemboleh ubah bersandar) berdasarkan program (PUM dan PTB), jantina (lelaki dan perempuan) dan latar belakang pekerjaan penjaga (kerajaan, swasta, peniaga, petani dan tidak bekerja) telah dianalisis secara serentak. Program, jantina dan latar belakang pekerjaan penjaga pelajar merupakan pemboleh ubah tak bersandar kajian. Oleh kerana perbandingan dijalankan serentak, maka ujian MANOVA digunakan bagi menguji tiga hipotesis berikut:

Ho1: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar PUM dan PTB.

Ho2: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar lelaki dan pelajar perempuan PUM dan PTB.

Ho3: Tidak terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi antara pelajar yang berlainan latar belakang keluarga.

Sebelum ujian MANOVA dijalankan, pengkaji terlebih dahulu menjalankan ujian bagi menentukan kehomogenan varian-kovarian dengan menggunakan ujian Box's M (Box's M test). Ujian ini penting untuk menentukan sama ada varian-kovarian di kalangan pembolehubah bersandar adalah sama atau tidak, merentasi semua pembolehubah tak bersandar. Ini

merupakan prasyarat penting bagi ujian MANOVA. Ujian MANOVA mengandaikan bahawa varian-kovarian di kalangan pemboleh-ubah bersandar adalah sama, merentasi semua pembolehubah bebas. Dalam hal ini, jika nilai paras kesignifikanan lebih besar dari 0.01, maka ini bermakna ujian MANOVA boleh digunakan (Tabachnick dan Fidell 1996).

Jadual 3 menunjukkan hasil ujian Box's M yang menunjukkan tidak terdapat perbezaan yang signifikan di kalangan pembolehubah bersandar untuk semua pembolehubah tak bersandar apabila nilai F (96,532) =0.82, p>0.05.

JADUAL 3
Ujian Box's M

Box's M	F	dk 1	dk2	paras kesignifikanan
147.95	0.86	96	532	0.82

Dalam analisis MANOVA ini, ujian statistik Pillai's Trace telah digunakan kerana bilangan sampel kajian antara program (PUM dan PTB) didapati tidak sama. Menurut Tabachinck dan Fidell (1996), Pillai's Trace sesuai digunakan jika perkara-perkara seperti saiz sampel kecil, bilangan sampel tidak sama atau pun tidak menepati prasyarat (violation of assumptions).

Jadual 4 menunjukkan analisis data yang diperoleh hasil daripada ujian MANOVA. Data ini menunjukkan sama ada terdapat atau tidak persamaan atau perbezaan antara pencapaian tingkah laku pelajar berdasarkan program, jantina dan latar belakang pekerjaan penjaga. Hasilnya, Jadual 4 menunjukkan terdapat perbezaan yang signifikan antara pencapaian tingkah laku pelajar berdasarkan program. Ini dapat dilihat dengan jelas apabila nilai Pillai's Trace = 0.53 dan nilai F (3,379) = 7.12, p<0.05. Manakala, tiada perbezaan yang signifikan dalam pencapaian tingkah laku pelajar berdasarkan jantina dan latar belakang pekerjaan penjaga. Ini ditunjukkan apabila nilai Pillai's Trace bagi jantina ialah 0.13 dengan nilai F (3,379) = 1.71, p>0.05. Begitu juga dengan latar belakang pekerjaan penjaga apabila nilai Pillai's Trace ialah 0.02 dengan nilai F(12, 1143) = 0.69, p>0.05.

Bagi kesan interaksi antara program dengan jantina, nilai Pillai's Trace yang diterima ialah 0.00. Sementara, nilai F (3, 379) = 0.45, p> 0.05. Kesan interaksi antara program dengan latar belakang pekerjaan penjaga ialah 0.28; nilai F (12, 1143) = 0.89, p>0.05. Interaksi antara jantina dengan latar belakang pekerjaan penjaga pelajar menunjukkan nilai Pillai's Trace ialah 0.02; dengan nilai F (12, 1143) =0.87, p> 0.05. Manakala, interaksi antara program, jantina dan latar belakang pekerjaan penjaga pula menunjukkan nilai Pillai's Trace 0.01 dengan nilai F (12,1143) =0.26, p> 0.05. Analisis-analisis data ini menerangkan bahawa tidak terdapat kesan interaksi yang signifikan antara program, jantina dan latar belakang pekerjaan penjaga terhadap pencapaian tingkah laku pelajar.

Lanjutan daripada Jadual 4, analisis ANOVA berganda seperti Jadual 5 dilakukan untuk melihat perbezaan min bagi setiap pemboleh ubah bersandar berdasarkan program, jantina dan juga latar belakang pekerjaan penjaga.

Berdasarkan Jadual 5, didapati hanya terdapat satu perbezaan yang signifikan iaitu

JADUAL 4
Analisis MANOVA: Perbezaan pencapaian tingkah laku pelajar berdasarkan program, jantina dan latar belakang pekerjaan penjaga pelajar

Kesan	nilai Pillai's Trace	F	darjah antara kumpulan	darjah dalam kumpulan	paras kesignifikanan
Program	0.53	7.12	3	379	0.00*
Jantina	0.13	1.71	3	379	0.17
Kpenjaga[a]	0.02	0.69	12	1143	0.76
Program * Jantina	0.00	0.45	3	379	0.72
Program* Kpenjaga	0.03	0.89	12	1143	0.55
Jantina *Kpenjaga	0.02	0.57	12	1143	0.87
Program* jantina* kpenjaga	0.01	0.26	12	1143	0.99

Kpenjaga[a] = latar belakang pekerjaan penjaga

JADUAL 5
Ujian ANOVA berganda: Perbandingan pencapaian tingkah laku kompetensi, kognitif, afektif berdasarkan program, jantina dan latar belakang pekerjaan penjaga

Kesan	Pemboleh ubah bersandar	jkd	dk	mkd	F	sig.
Program	Kompetensi	16.03	1	16.03	1.72	0.19
	Kognitif	181.19	1	181.19	15.08	0.00*
	Afektif	7.81E-02	1	7.81E-02	1.51	0.22
Jantina	Kompetensi	6.32	1	6.32	0.67	0.41
	Kognitif	4.20	1	4.20	0.35	0.56
	Afektif	0.18	1	0.18	3.48	0.06
Kpenjaga[a]	Kompetensi	53.52	4	13.38	1.42	0.22
	Kognitif	17.50	4	4.37	0.36	0.83
	Afektif	7.45E-02	4	1.87E-02	0.36	0.84
Program * Jantina	Kompetensi	12.12	1	12.12	1.29	0.26
	Kognitif	0.06	1	0.06	0.00	0.95
	Afektif	1.97E-04	1	1.97E-04	0.00	0.95
Program* Kpenjaga	Kompetensi	56.89	4	14.22	1.51	0.20
	Kognitif	27.64	4	6.91	0.56	0.68
	Afektif	0.11	4	6.52E-02	0.51	0.73

Kpenjaga[a] = latar belakang pekerjaan penjaga

pencapaian tingkah laku kognitif antara program dengan nilai F(1,401) =15.08, p<0.05. Ini jelas dapat dilihat dalam Jadual 6 (sila rujuk Lampiran A) apabila min dimensi tingkah laku kognitif pelajar PUM ialah 16.22 (s.p =0.27) dan min pelajar PTB pula ialah 14.06 (s.p =0.48). Ini bermakna pelajar PUM mempunyai pencapaian yang lebih baik daripada pelajar PTB dalam ujian tingkah laku kognitif secara signifikan. Sementara, pencapaian tingkah laku kompetensi dan tingkah laku afektif antara pelajar PUM dan PTB menunjukkan tidak terdapatnya perbezaan yang signifikan. Ini jelas apabila nilai F(1,401) = 1.72, p>0.05 bagi pencapaian tingkah laku kompetensi. Secara terperinci, min pencapaian tingkah laku kompetensi pelajar PUM ialah 10.56 (s.p =0.24) dan min PTB ialah 11.18 (s.p =0.43). Begitu juga dengan pencapaian tingkah laku afektif apabila nilai F (1,401) =1.51, p>0.05; walau pun min PUM adalah lebih tinggi sedikit daripada min PTB (min PUM =3.87, s.p =0.02; min PTB =3.78, s.p = 0.03) (sila rujuk Jadual 6 di Lampiran A).

Seterusnya, Jadual 5 menunjukkan bahawa tidak terdapat perbezaan yang signifikan antara pencapaian tingkah laku kompetensi, kognitif dan afektif antara pelajar lelaki dan pelajar perempuan. Ini jelas ditunjukkan dalam jadual apabila nilai F (1,401) =0.67, p>0.05 bagi tingkah laku kompetensi; sementara, bagi tingkah laku kognitif nilai F(1,401) = 0.35, p>0.05; dan nilai F(1,401) =3.48, p>0.05 bagi tingkah laku afektif. Ini terbukti apabila min pencapaian tingkah laku kompetensi pelajar lelaki ialah 10.65 (s.p =0.38) dan min pelajar perempuan ialah 11.06 (s.p =0.32). Manakala, min pencapaian tingkah laku kognitif pelajar lelaki ialah 15.30 (s.p =0.43) dan min pelajar perempuan ialah 14.98 (s.p 0.36). Begitu juga dengan min tingkah laku afektif apabila pelajar lelaki menerima 3.77 (s.p = 0.03) dan pelajar perempuan pula ialah 3.84 (s.p = 0.02) (sila rujuk Jadual 6 di Lampiran A).

Data Jadual 5 juga menunjukkan bahawa tiada perbezaan yang signifikan antara pencapaian tingkah laku kompetensi, kognitif, afektif pelajar berdasarkan latar belakang pekerjaan penjaga mereka. Ini jelas apabila nilai F (4,401) =1.42, p>0.05 bagi tingkah laku kompetensi. Jadual 6 di Lampiran A menunjukkan min pencapaian tingkah laku kompetensi bagi pelajar yang mempunyai penjaga bekerja dengan kerajaan ialah 10.65 (s.p =0.27), swasta = 11.05 (s.p =0.39), peniaga = 9,.96 (s.p =0.39), petani = 10.93 (s.p =0.59) dan tidak bekerja = 11.69 (s.p =0.88).

Bagi pencapaian tingkah laku kognitif, Jadual 5 juga menunjukkan tiada terdapat perbezaan yang signifikan antara pencapaian pelajar

berdasarkan latar belakang pekerjaan penjaga mereka dengan nilai F(4,401) = 0.36, p>0.05. Penerangan secara terperinci ditunjukkan pada Jadual 5 (Lampiran A) iaitu min pencapaian tingkah laku kognitif pelajar yang mempunyai penjaga bekerja dengan kerajaan ialah 14.77 (s.p =0.30), swasta =15.21 (s.p =0.44), peniaga = 14.97 (s.p =0.44), petani = 14.92 (s.p =0.67) dan tidak bekerja =15.82 (s.p =0.99).

Seterusnya pencapaian tingkah laku afektif pelajar juga tidak menunjukkan perbezaan yang signifikan berdasarkan latar belakang pekerjaan penjaga. Nilai F (4,401) = 0.36, p >0.05. Secara terperinci, min pencapaian tingkah laku afektif pelajar yang mempunyai penjaga bekerja dengan kerajaan ialah 3.81 (s.p =0.02), swasta =3.84 (s.p =0.03), peniaga = 3.81 (s.p =0.04) dan tidak bekerja = 3.77 (s.p =0.07).

Sehubungan itu Jadual 4 juga menunjukkan tidak terdapat kesan interaksi yang signifikan antara jenis program dan jantina pelajar dengan pencapaian tingkah laku kompetensi, kognitif dan afektif. Ini jelas apabila nilai F(4,401)= 1.29, p>0.05 bagi tingkah laku kompetensi. Secara terperinci, min tingkah laku kompetensi pelajar lelaki PUM ialah 10.61 (s.p =0.39) dan pelajar lelaki PTB pula ialah 10.70 (s.p =0.64). Sementara, min tingkah laku kompetensi pelajar perempuan PUM ialah 10.46 (s.p =0.29) dan pelajar perempuan PTB pula ialah 11.65 (s.p =0.56) (sila rujuk jadual 7 di Lampiran B).

Nilai F pencapaian tingkah laku kognitif pula ialah F(4,401) =0.00, p>0.05. Secara terperinci, Jadual 7 di Lampiran B menunjukkan min pencapaian tingkah laku kognitif pelajar lelaki PUM ialah 16.40 (s.p =0.44) dan pelajar lelaki PTB pula ialah 14.21 (s.p =0.73). Sementara min tingkah laku kognitif pelajar perempuan PUM ialah 16.03 (s.p = 0.33) dan pelajar perempuan PTB ialah 13.92 (s.p =0.64).

Begitu juga dengan pencapaian tingkah laku afektif yang menunjukkan tiada perbezaan yang signifikan antara pencapaian tingkah laku afektif pelajar PUM dan pelajar PTB dengan nilai F(4,401) = 0.00, p>0.05. Secara terperinci, Jadual 7 menunjukkan min tingkah laku afektif pelajar lelaki PUM ialah 3.79 (s.p =0.03) dan pelajar lelaki PTB ialah 3.75 (s.p =0.05). Manakala, min tingkah laku afektif pelajar perempuan PUM ialah 3.86 (s.p =0.02) dan pelajar perempuan PTB ialah 3.82 (s.p =0.04) (sila rujuk Lampiran B).

Seterusnya, Jadual 5 juga menunjukkan bahawa tiada terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kompetensi, kognitif, afektif antara pelajar PUM dan PTB yang berlainan latar belakang pekerjaan penjaga. Ini jelas apabila nilai F yang ditunjukkan adalah tidak signifikan iaitu F(4,401) =1.51, p>0.05 bagi pencapaian tingkah laku kompetensi. Jadual 7 (Lampiran B) menunjukkan min tingkah laku kompetensi pelajar PUM yang mempunyai penjaga bekerja kerajaan ialah 10.62 (s.p = 030), swasta =10.99 (s.p = 0.44), peniaga = 10.51 (s.p =0.43), petani = 10.36 (s.p =0.49) dan tidak bekerja = 10.13 (s.p =0.87). Manakala, min tingkah laku kompetensi pelajar PTB yang mempunyai penjaga bekerja dengan kerajaan ialah 10.62 (s.p =0.44), swasta =11.10 (s.p =0.65), peniaga = 9.41 (s.p =0.66), petani = 11.50 (s.p =1.08) dan tidak bekerja = 13.25 (s.p =1.53).

Begitu juga dengan pencapaian tingkah laku kognitif apabila data menunjukkan tiada perbezaan antara pelajar PUM dan pelajar PTB yang mempunyai latar belakang penjaga yang berbeza. Nilai F yang diterima ialah F(4,401) =0.56, p>0.05. Maklumat jelas dapat dilihat pada Jadual 7 iaitu min tingkah laku kognitif pelajar PUM yang mempunyai penjaga bekerja kerajaan ialah 15.80 (s.p =0.34), swasta = 16.53 (s.p =0.49), peniaga =16.19 (s.p =0.49), petani =16.63 (s.p =0.55) dan tidak bekerja =15.90 (s.p =0.99). Manakala, min tingkah laku kognitif pelajar PTB yang mempunyai penjaga bekerja kerajaan pula ialah 13.74 (s.p = 0.49), swasta = 13.88 (s.p =0.73), peniaga =13.76 (s.p =0.74), petani = 13.17 (s.p =1.13) dan tidak bekerja = 15.75 (s.p =1.73) (sila rujuk Lampiran B).

Perbandingan antara pencapaian tingkah laku afektif antara pelajar PUM dan pelajar PTB yang mempunyai latar belakang pekerjaan penjaga berbeza juga menunjukkan dapatan yang tidak berbeza secara signifikan. Nilai F yang diterima ialah F(4,401) =0.51, p>0.05. Secara terperinci, data di Jadual 7 di Lampiran B menunjukkan bahawa min tingkah laku afektif pelajar PUM yang mempunyai penjaga bekerja kerajaan ialah 3.82 (s.p =0.02), swasta =3.83 (s.p =0.03), peniaga = 3.82 (s.p =0.03), petani =3.81 (s.p =0.4) dan tidak bekerja = 3.85 (s.p =0.07). Manakala, min tingkah laku afektif pelajar PTB yang mempunyai penjaga bekerja kerajaan ialah 3.79 (s.p =0.03), swasta = 3.84 (s.p =0.05), peniaga = 3.80 (s.p = 0.05), petani = 3.82 (s.p = 0.08) dan tidak bekerja =3.67 (s.p =0.11).

PERBINCANGAN DAN KESIMPULAN

Secara amnya, dapatan pengkaji melalui analisis ujian MANOVA menunjukkan bahawa tiada terdapat perbezaan yang signifikan dalam pencapaian tingkah laku kognitif, afektif dan kompetensi pelajar berdasarkan jantina dan latar belakang pekerjaan penjaga (sila rujuk Jadual 4, 5, 6 dan 7). Ini bermakna skor pencapaian tingkah laku kognitif, kompetensi dan afektif pelajar adalah sama atau hampir sama tanpa mengira mereka pelajar lelaki atau pelajar perempuan; pelajar yang mempunyai latar belakang penjaga peniaga atau pun tidak. Justeru, dapatan pengkaji ini selari dengan dapatan pengkaji-pengkaji terdahulu seperti Hatten (1993), Mohd Amir Sharifuddin Hashim *et al.* (1994) dan Sharifah Kamaliah Syed Sofian (1996).

Hatten (1993) dalam kajiannya terhadap 220 pelajar "Small Busines Industries" dengan kaedah kuasi-experimen mendapati bahawa tiada perbezaan yang signifikan antara tingkah laku afektif pelajar lelaki dan pelajar perempuan (nilai Pillai's Trace = 0.02; nilai F(4, 145) =0.78, $p>0.05$); dan antara pelajar yang mempunyai latar belakang usahawan atau pun tidak (nilai F= 0.79, $p>0.05$). Begitu juga dengan dapatan kajian secara tinjauan oleh Mohd. Amir Sharifuddin Hashim *et al.* (1994) terhadap 913 pelajar PUM apabila analisis datanya menunjukkan tiada perbezaan yang signifikan dalam pencapaian pelajar berdasarkan jantina.

Namun, kajian oleh Sharifah Kamaliah Syed Sofian (1996) terhadap 390 pelajar pula menunjukkan terdapat perbezaan yang signifikan antara ciri-ciri keusahawanan (tingkah laku afektif) pelajar lelaki dan pelajar perempuan (ujian-t = -2.49, $p<0.05$) tetapi kajian beliau juga menunjukkan bahawa tidak terdapat perbezaan yang signifikan antara pelajar yang mempunyai latar belakang pekerjaan penjaga peniaga atau pun tidak (ujian t =-0.59, $p > 0.05$).

Seterusnya, hasil kajian pengkaji didapati tidak selari dengan hasil beberapa kajian terdahulu seperti kajian Salleh (1994), Flemming (1996) dan Zaidatol Akmaliah Lope Pihie *et al.* (1998). Contohnya, kajian Salleh (1994) terhadap 25 ahli sukan dan 25 usahawan dengan kaedah retrospektif menunjukkan bahawa latar belakang keluarga mempunyai pengaruh terhadap pencapaian anak-anak. Begitu juga dengan kajian Flemming (1996) terhadap 419 peserta program keusahawanan. Hal yang demikian juga diperoleh dalam kajian Zaidatol Akmaliah Lope Pihie *et al.* (1998) apabila kajian beliau terhadap 1336 pelajar menunjukkan terdapat perbezaan yang signifikan antara pelajar lelaki dan pelajar perempuan (ujian-t = 5.09, $p<0.05$).

Sebagai kesimpulannya, kajian ini menunjukkan bahawa tidak terdapat perbezaan yang signifikan antara pelajar lelaki dan pelajar perempuan yang berlainan latar belakang keluarga sama ada dari segi pencapaian tingkah laku kognitif, afektif dan kompetensi keusahawanannya.

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LAMPIRAN A

JADUAL 6
Skor min dan sisihan piawai setiap pembolehubah bersandar berdasarkan program, jantina dan latar belakang pekerjaan penjaga

Pemboleh ubah bersandar	Pemboleh ubah tak bersandar	min	s.p
	Program		
	PUM	10.54	0.24
	PTB	11.18	0.43
	Jantina		
	Lelaki	10.65	0.38
Kompetensi	Perempuan	11.06	0.32
	Pekerjaan penjaga		
	Kerajaan	10.65	0.27
	Swasta	11.05	0.39
	Peniaga	9.96	0.39
	Petani	10.93	0.60
	Tidak bekerja	11.68	0.88
	Program		
	PUM	16.22	0.27
	PTB	14.06	0.48
	Jantina		
	Lelaki	15.03	0.03
Kognitif	Perempuan	14.97	0.02
	Pekerjaan penjaga		
	Kerajaan	14.77	0.29
	Swasta	15.21	0.44
	Peniaga	14.97	0.44
	Petani	14.91	0.67
	Tidak bekerja	15.83	0.99
	Program		
	PUM	3.83	0.02
	PTB	3.78	0.03
	Jantina		
	Lelaki	3.77	0.03
Afektif	Perempuan	3.84	0.02
	Pekerjaan penjaga		
	Kerajaan	3.81	0.02
	Swasta	3.84	0.03
	Peniaga	3.81	0.03
	Petani	3.81	0.04
	Tidak bekerja	3.76	0.07

LAMPIRAN B

JADUAL 7
Skor min dan sisihan piawai setiap pemboleh ubah bersandar berdasarkan jantina dan latar belakang pekerjaan penjaga bagi setiap program

Pemboleh ubah bersandar	Pemboleh ubah tak bersandar		min	s.p
Kompetensi	PUM	Lelaki	10.61	0.39
		Perempuan	10.46	0.29
	PTB	Lelaki	10.70	0.64
		Perempuan	11.66	0.56
Kognitif	PUM	Lelaki	16.40	0.44
		Perempuan	16.03	0.33
	PTB	Lelaki	14.21	0.73
		Perempuan	13.92	0.64
Afektif	PUM	Lelaki	3.79	0.03
		Perempuan	3.86	0.02
	PTB	Lelaki	3.75	0.05
		Perempuan	3.82	0.04
Kompetensi	PUM	Kerajaan	10.68	0.30
		Swasta	10.99	0.44
		Peniaga	10.51	0.43
		Petani	10.36	0.49
		Tidak bekerja	10.13	0.87
	PTB	Kerajaan	10.62	0.435
		Swasta	11.10	0.65
		Peniaga	9.41	0.66
		Petani	11.50	1.08
		Tidak bekerja	13.25	1.53
Kognitif	PUM	Kerajaan	15.80	0.34
		Swasta	16.53	0.49
		Peniaga	16.19	0.49
		Petani	16.66	0.55
		Tidak bekerja	15.90	0.99
	PTB	Kerajaan	13.75	0.49
		Swasta	13.88	0.73
		Peniaga	13.76	0.74
		Petani	13.17	1.23
		Tidak bekerja	15.75	1.73
Afektif	PUM	Kerajaan	3.82	0.02
		Swasta	3.83	0.03
		Peniaga	3.82	0.03
		Petani	3.81	0.04
		Tidak bekerja	3.85	0.07
	PTB	Kerajaan	3.79	0.03
		Swasta	3.84	0.05
		Peniaga	3.80	0.05
		Petani	3.82	0.80
		Tidak bekerja	3.67	0.11

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Status Program Pembelajaran di Kalangan Saudara Baru: Satu Kajian Kes di Negeri Melaka

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ABSTRAK

Kajian ini bertujuan mengenal pasti tahap persepsi responden terhadap status program pembelajaran yang mereka ikuti. Kajian melibatkan sejumlah 60 orang saudara baru dan tiga orang pegawai di sebuah di institusi dakwah Islam. Hasil kajian menunjukkan kebanyakan responden berbangsa Cina dan beragama asal Buddha, purata umur memeluk Islam ialah 25.8 tahun dan purata umur sekarang ialah 45.2 tahun. Sejumlah 76% responden adalah wanita. Kajian juga menunjukkan responden berpersepsi bahawa program pembelajaran secara keseluruhan adalah memuaskan. Aspek yang perlu diberi lebih perhatian ialah keselesaan kelas, kemampuan pengajar menggunakan pelbagai bahasa, dan beberapa aspek isi kandungan pelajaran. Tiga masalah pelaksanaan program pembelajaran yang dihadapi oleh Balai Islam ialah anggapan bahawa Balai Islam sebagai tempat mengadu masalah, status pekerjaan pegawai dan kurikulum yang kurang lengkap.

ABSTRACT

The study aimed to identify the perception of respondents on the status of learning program that they have undergone. The study involved 60 Muslim converts and three officers of an Islamic institution. Results showed that the majority of respondents were of Chinese with Buddhism as the original religion, converted to Islam at the average age of 25.8 years, and their present age was at an average of 45.2 years. A total of 76% of respondents were women. As a whole the respondents perceived that the learning program was satisfactory. However, some areas need to be looked into seriously such as the situations in the class, the capability of teachers in using multiple languages in teaching, and several aspects of learning contents. Three problems related to learning program for the converts were identified, namely, the perception of respondents that Balai Islam is the only place to refer to when problems arise, employment status of officers and the inadequacy of curriculum.

PENGENALAN

Islam adalah suatu agama yang dinamik. Keadaan dinamik ini antara lain dapat dilihat melalui pertambahan umat Islam bukan sahaja mereka yang lahir daripada keluarga Islam tetapi juga yang baru memeluk Islam atau 'convert' atau juga dikenali sebagai 'saudara baru'. Fenomena bertukar agama daripada agama lain ke agama Islam bukan satu perkara baru. Ia telah bermula di peringkat awal tamadun Islam di dunia Arab (Shatzmiller 1996) dan di negara-negara Asia Tenggara (Hefner and Horvatich 1997). Hingga kini fenomena ini berlaku di kebanyakan negara di dunia termasuk Malaysia, dan ini merupakan satu cara menyebabkan berlaku peningkatan jumlah umat Islam di sesebuah negara. Contohnya di negeri Jepun sekarang terdapat hampir 50,000 orang penduduk yang memeluk

Islam daripada agama lain dalam tempoh 20 tahun yang lalu (Anis 1998). Di Kanada terdapat sejumlah 200,000 orang Islam termasuk mereka sebagai imigran lama dan baru yang majoritinya dari Asia dan Afrika dan juga yang memeluk Islam daripada agama lain (Azmi 1997).

Kajian pertambahan saudara baru dalam era Malaysia moden adalah kecil, dan analisis menunjukkan ia seiringan dengan gerakan dakwah di negara ini (Shamsul 1997). Jumlah saudara baru sebenar di negara ini sukar diperolehi. Berdasarkan sumber-sumber yang terhad, jumlah mereka di Kuala Lumpur dalam lima tahun antara tahun 1995 hingga 2000 secara purata ialah lebih kurang 400 orang setahun (Temu bual dengan pegawai PERKIM, Kuala Lumpur 2001). Begitu juga menurut Mahfuz (1992) jumlah saudara baru di Kuala Lumpur daripada tahun 1986 hingga 1990 ialah seramai 1609 orang atau 0.15% daripada keseluruhan masyarakat bukan Islamnya.

Melihat perkembangan ini dan pertambahan populasi yang ingin memeluk Islam di Malaysia menyebabkan perlunya satu tugas khusus untuk menjaga hal-ehwal kebajikan termasuk program pembelajaran untuk meningkatkan pemahaman dan penghayatan Islam (Siddiq 1998). Institusi dakwah di Malaysia seperti YADIM, PERKIM, Balai Islam, MACMA, IOA, dan JIM[1] telah banyak membantu misi dakwah Islamiah yang sedia ada termasuk pembelajaran di kalangan saudara baru.

Balai Islam terdapat hampir di setiap negeri di Malaysia. Balai Islam Negeri Melaka khususnya telah ditubuhkan pada tahun 1987, dimandatkan untuk mengendalikan aktiviti pembelajaran di kalangan saudara baru. Setelah sekian lama dijalankan masih banyak tidak diketahui tentang keberkesanan program pembelajaran tersebut daripada pelbagai aspek. Oleh yang demikian fokus kajian ini ialah untuk melihat status program pembelajaran di kalangan saudara baru khususnya anjuran Balai Islam. Tambahan pula kajian lepas mengenai pembelajaran di kalangan saudara baru adalah terhad. Kajian yang ada hanyalah mengenai permasalahan yang mereka hadapi (Simon Peri 1990, Nor Patimah 1990; Maziah 1995; Mahfuz 1992; Wan Fauziah 1992; Yusoff 1988). Persoalan kajian ialah bagaimanakah pandangan saudara baru tentang pelaksanaan program pembelajaran daripada aspek kepentingan objektif program, isi kandungan pelajaran, suasana pembelajaran, penyampaian dan pengendalian program? Apakah masalah yang dihadapi oleh pihak pelaksana dalam mengendalikan aktiviti pembelajaran? Kajian ini akan cuba mencari jawapan kepada persoalan di atas.

Hasil kajian bukan sahaja dapat meningkatkan korpus pengetahuan mengenai pembelajaran di kalangan saudara baru, tetapi ia boleh digunakan oleh Balai Islam dan institusi dakwah lain dalam pelaksanaan programnya. Seterusnya hasil kajian diharapkan dapat membantu usaha untuk mengenal pasti di kalangan saudara baru yang berkebolehan untuk diketengahkan dalam membantu usaha pelaksanaan program pembelajaran dan sebagai pendakwah. Penumpuan sesuatu aktiviti pembelajaran keislaman yang disusuli dengan aktiviti penyelidikan akan cuba menonjolkan kepentingan fungsi Balai Islam Melaka sejajar dengan falsafah penubuhannya untuk memberi kebajikan kepada 'saudara baru' dengan mengoperasikan konsep pendidikan.

PENDIDIKAN DEWASA DARI PERSPEKTIF ISLAM

Pendidikan amat digalakkan dalam Islam tanpa mengira sama ada ilmu agama dan ilmu sains. Menurut Mohd Kamal (1988), isi kandungan teologi dan sains dalam Islam tidak bercanggah antara satu sama lain, malah ia saling melengkapi dan kedua-duanya lahir daripada pandangan yang satu iaitu Tauhid. Ini amat bertentangan dengan konsep dualisme yang diamalkan di Barat, di mana ilmu keagamaan dipisahkan daripada ilmu sains. Pendidikan tidak formal yang berkait rapat dengan pendidikan dewasa mempunyai kepentingan tinggi dalam Islam kerana tempoh seseorang individu mengikuti pendidikan formal adalah terbatas.

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[1] YADIM - Yayasan Dakwah Islam Malaysia
PERKIM - Pertubuhan Kebajikan Islam Malaysia
MACMA - Muslim Chinese Association of Malaysia
IOA - International Outreach of ABIM (Malaysian Muslim Youth Movement)
JIM - Jemaah Islam Malaysia

Menurut Al-Rawi (1993) beberapa ciri pendidikan dewasa menurut Islam ialah: Pertama, pendidikan dewasa merupakan satu proses pembelajaran sepanjang hayat iaitu dari "buaian hingga ke liang lahad". Hanya yang membataskan pendidikan seseorang ialah kebolehannya untuk belajar kerana individu yang berlainan mempunyai kemampuan yang berbeza untuk belajar. Kedua, pembelajaran yang berulang-ulang merupakan amalan umat Islam yang terdahulu. Ini kerana di awal tamadun Islam, sistem pendidikan formal tidak begitu kemas seperti masa kini, yang mana individu sering belajar dan bekerja secara tukar ganti mengikut kesesuaian masa. Ini kerana dalam pembelajaran terdapat kata-kata hikmat seperti "Seseorang tidak sempurna amalnya jika ia tidak belajar, dan tidak menjadi orang yang terdidik jika ia tidak melakukan sesuatu mengikut apa yang dipelajari."

Ketiga, ialah konsep masyarakat berpelajaran (learning society) merupakan satu tuntutan dalam Islam. Walaupun konsep ini sering dilaung-laungkan dewasa ini, tetapi mengikut sejarah Islam, dalam era pemerintahan Abbasiah seluruh masyarakat Arab ketika itu telah mengalami transformasi pendidikan iaitu masyarakat tersebut dianggap sebagai satu institusi pembelajaran yang besar. Bidang-bidang pendidikan yang telah bertapak ketika itu ialah undang-undang Islam, kenegaraan dan politik. Ulasan di atas menunjukkan bahawa Islam sangat mementingkan umatnya menuntut ilmu bagi menjamin kebahagiaan hidup dunia dan akhirat. Manusia keseluruhannya, termasuk mereka yang baru memeluk Islam ditugaskan untuk menjadi khalifah atau pengatur kepada alam semesta ini. Oleh itu perkara utama yang mereka mesti laksanakan ialah menuntut ilmu mengenai agama yang baru dianuti. Ini mencadangkan bahawa suatu program pembelajaran khususnya secara tidak formal dibentuk bagi memudahkan mereka menjalani tuntutan hakiki tersebut.

Menyentuh tentang teori pembelajaran, banyak pendapat menyatakan mengapa seseorang dewasa belajar. Seseorang dewasa dikatakan bersedia untuk belajar apabila mereka berhadapan dengan situasi yang rumit, yang menuntut agar mereka belajar bagi memperbaiki kualiti hasil kerja atau peringkat kehidupan seharian. Ini termasuk individu sama ada seorang pekerja, suami atau isteri, ibu atau bapa, seorang ketua sesebuah organisasi atau pekerja dalam organisasi (Knowles 1980; Brazziel 1989; Garelli 1996). Pelajar dewasa lebih suka pembelajaran yang berkaitan dengan pengalaman hidupnya dan ia akan menjadi lebih bermakna apabila pembelajaran itu boleh diaplikasikan dalam menyelesaikan sebarang masalah harian atau masalah-masalah di tempat kerja (Reizen 1996; Benshoff 1991).

Dari pandangan Knowles (1984) pula ia mengatakan bahawa pada suatu peringkat kehidupan seseorang dewasa, orientasi pembelajaran lebih tertumpu kepada keperluan diri, sama ada ia berorientasikan masalah, pekerjaan ataupun kehidupan. Sekiranya berkemampuan, ia mahu mengaplikasikan apa sahaja yang telah dipelajarinya secepat mungkin.

Aslanian dan Brickell (1980) seterusnya menambah bahawa faktor penyebab seseorang untuk belajar ialah akibat perubahan dalam hidup keluarga seperti perkahwinan, kelahiran, perceraian dan kematian serta faktor-faktor lain seperti penggunaan masa lapang dan mahu mencapai kepuasan tugas yang lebih tinggi. Manakala Robinson (1985) pula lebih cenderung kepada idea bahawa pembelajaran dewasa berlaku kerana ia adalah suatu keperluan penting pada suatu peringkat dalam kehidupan seseorang.

Dalam konteks kajian ini saudara baru sangat memerlukan pendidikan. Sebagai anggota baru dalam masyarakat Muslim sudah tentu mereka mempunyai pelbagai masalah yang perlu diatasi (Ibrahim 1995; Zainurin 1992). Antaranya ialah untuk mematuhi amalan agama yang baru dianuti dan untuk menyesuaikan diri dengan umat Islam yang lain, reaksi rakan, majikan dan keluarga. Masalah lain yang berkaitan ialah kerumitan untuk belajar kerana tempat tinggal yang jauh dari tempat belajar, dan jenis pekerjaan yang kurang sesuai setelah memeluk Islam (Ibrahim 1995; Ramli 1993). Justeru itu perancang program pembelajaran kepada saudara baru haruslah dirancang secara sistematik dengan melihat kepada aspek-aspek pendidikan dewasa.

Seperti yang dilaporkan oleh Mahfuz (1992) sungguhpun mereka dengan sepenuh hati menerima Islam sebagai satu cara hidup, tetapi mereka masih lagi tidak memahami apakah perkara yang tergolong dalam ibadah. Dengan demikian pembelajaran perlu bukan sahaja untuk meningkatkan tahap kognitif tentang Islam tetapi juga amalan yang dituntut. Mereka sedang

membina persepsi diri mengenai nilai, kepercayaan serta amalan hidup yang belum pernah mereka alami sebelum ini. Dengan demikian proses pembelajaran untuk saudara baru sangat penting dan perlu dirancang sebaik-baiknya.

Di antara konsep yang selalu disebut dalam pelaksanaan sesuatu program pembelajaran ialah pengetahuan pelaksana tentang ciri-ciri pembelajaran dewasa, faktor yang menggalakkan pembelajaran dewasa dan penggunaan pengalaman dalam pembelajaran dewasa. Ku Md. Ali (1997) melaporkan bahawa ahli psikologi berpendapat bimbingan adalah sebahagian daripada komponen dalam program pendidikan dewasa. Perkhidmatan bimbingan merupakan nadi terpenting dalam mempastikan saudara baru untuk terus kekal di atas dasar Tauhid, menghayati tuntutan agama dan memandu untuk menjalani kehidupan ke jalan yang diredhai serta dibenarkan oleh syariat.

Dalam konteks penghidupan saudara baru, selain pembimbing, 'role model' adalah juga penting. Mereka sangat memerlukan seseorang yang boleh menjadi contoh seperti fasilitator kelas agama, ustaz, imam masjid, pegawai organisasi dan pemimpin tempatan lain yang beragama Islam serta jiran dan rakan. Ini bertepatan dengan teori "Pembelajaran Sosial" (Bandura 1977) yang mana seseorang individu belajar melalui pemerhatian dan interaksi dengan anggota sosial lain dalam aktiviti seharian. Oleh itu saudara baru perlu didedahkan dengan pengetahuan dan amalan yang betul mengenai Islam. Ini mencadangkan betapa pentingnya diwujudkan program pembelajaran khusus untuk mereka.

KAJIAN LEPAS YANG BERKAITAN

Kajian-kajian lepas mendapati bahawa masih banyak ruang yang boleh dipenuhi oleh pelbagai pihak untuk memantapkan program pembelajaran di kalangan saudara baru. Mahfuz (1992) mencadangkan supaya sukatan pelajaran hendaklah bukan sekadar peringkat asas sahaja, tetapi perlu lebih mendalam. Selanjutnya beliau mencadangkan agar dilakukan pengasingan kelas antara mereka yang lama dan yang baru memeluk Islam. Menurut Wan Fauziah (1992) pula hampir 90% daripada saudara baru di Malaysia terdiri daripada golongan yang berpendapatan rendah dan tidak berpendidikan tinggi; dan dengan demikian penganjur program pembelajaran perlu sensitif dengan keadaan profil sosial mereka yang demikian. Cadangan yang dikemukakan oleh Nor Patimah (1990) amatlah dipersetujui supaya diwujudkan perpustakaan untuk saudara baru, adakan kelas lanjutan dan wujudkan "Islamic Information Centre" di tengah-tengah sesebuah bandar besar seperti Kuala Lumpur, Johor Bahru dan Melaka. Begitu juga dengan cadangan supaya proses pembelajaran menggunakan alat bantu mengajar seperti audio-video, kursus secara jarak jauh dan mengadakan penilaian yang sistematik tentang aktiviti pembelajaran yang diadakan di kalangan saudara baru.

Daripada segi teknik penyampaian oleh fasilitator, Maziah (1995) mencadangkan bahawa program dakwah perlu dimulakan dengan perkara-perkara yang menjadi kegemaran mereka dahulu, contohnya kemasyarakatan atau pergaulan sosial kemudian sedikit demi sedikit dikaitkan dengan agama. Fasilitator juga perlu menghalusi percakapan mereka kerana dengan demikian perkara yang dipelajari mudah meresap ke dalam jiwa seseorang. Fasilitator perlu sensitif terhadap sasaran yang dituju. Sebagai contoh, mereka boleh memulakan sesi pembelajaran dengan mengajak memikirkan tentang kejadian alam, kehebatan pencipta alam ini dan sebagainya. Kajian tersebut juga mencadangkan supaya fasilitator perlu menguasai beberapa bahasa lain seperti bahasa Inggeris, Cina, Tamil dan bahasa lain selain daripada Bahasa Melayu. Ini kerana saudara baru datang daripada pelbagai latar belakang etnik dan budaya.

Ulasan di atas menunjukkan bahawa program pembelajaran di kalangan saudara baru merupakan satu pembelajaran dewasa secara tidak formal,yang mempunyai kurikulum berdasarkan masalah kehidupan seharian. Objektif dan strategi pengendalian pembelajaran perlu dirancang dengan rapi, bersesuaian dengan profil sosial saudara baru yang mempunyai pelbagai masalah termasuk ekonomi, dan sedang berada pada tahap transisi daripada segi pengetahuan dan amalan agama, serta pembelajaran perlu menggunakan prinsip-prinsip pendidikan dewasa.

METODOLOGI KAJIAN

Kajian ini merupakan satu kajian penerokaan yang berbentuk deskriptif. Ia dinamakan penerokaan sebab kajian tempatan di kalangan

saudara baru sangat terhad dan lebih-lebih lagi berkaitan program pembelajaran yang mereka ikuti hampir tiada ditemui sebelum ini. Kajian ini bertujuan meninjau pandangan saudara baru terhadap pelaksanaan program pembelajaran yang telah mereka ikuti daripada aspek kepentingan objektif pembelajaran, suasana pembelajaran, isi kandungan pelajaran, penyampaian dan pengendalian program pembelajaran. Kajian juga bertujuan mengenalpasti masalah yang dihadapi dalam pelaksanaan program pembelajaran di kalangan saudara baru daripada perspektif penganjur. Aspek pelaksanaan ini perlu diketahui kerana ia mempengaruhi tumpuan dan kelancaran program pembelajaran yang dijalankan oleh pegawai Balai Islam.

Instrumentasi Kajian

Instrumen kajian ialah borang soal selidik yang diisi sendiri oleh responden. Pembentukan soalselidik ini berdasarkan teori-teori pembelajaran dewasa terkemuka yang dibentuk oleh Knowles (980), Brazziel (1989) dan Garelli (1996). Sebanyak empat komponen program pembelajaran yang dipilih dalam kajian ini iaitu kepentingan objektif pembelajaran, suasana pembelajaran, isi kandungan pelajaran, penyampaian dan pengendalian program pembelajaran.

Responden kajian terdiri daripada semua 60 orang saudara baru yang telah mengikuti program pembelajaran yang dianjurkan oleh Balai Islam dalam tahun 2001. Mereka terdiri daripada saudara baru yang berumur antara 18 hingga 60 tahun. Kategori umur ini dipilih kerana sesuai dengan hak memilih agama bagi individu seperti yang tercatat dalam perlembagaan Persekutuan perkara 11 (4). Pemilihan responden dibuat berdasarkan senarai nama yang telah diambil oleh penyelidik melalui semakan pelajar yang telah mengikuti program pembelajaran anjuran Balai Islam Melaka dalam tahun 2001.

Prauji telah dijalankan di kalangan 10 orang saudara baru lain yang pernah mengikuti program pembelajaran di Melaka yang dikendalikan oleh institusi Islamiah yang lain. Analisis reliabiliti dijalankan dan nilai Cronbach alpha yang diperoleh semasa pra-uji ialah 0.82. Dalam Kajian sebenar nilai Cronbach alpha ialah 0.78.

Pengumpulan data kajian telah dijalankan dengan mengedarkan sendiri borang soal selidik melalui individu, sewaktu selesai kelas dijalankan disepanjang bulan Oktober 2001. Semua borang soal selidik telah dapat dikumpulkan dengan bantuan pegawai di Balai Islam dan seterusnya dianalisis. Data tambahan telah diperolehi dengan menemubual tiga orang pegawai Balai Islam untuk memahami masalah yang dihadapi semasa pelaksanaan program pembelajaran. Mereka yang dipilih merupakan pegawai utama Balai Islam yang menjadi perancang, pelaksana dan pengendali program pembelajaran tersebut.

Kajian status ini menggunakan statistik mudah seperti peratusan, kekerapan dan min untuk menerangkan profil dan membuat interpretasi responden terhadap aspek-aspek yang dikaji. Pengukuran item yang menggunakan min adalah berasaskan ukuran Likert berskala – 5 dan interpretasi tentang tahap min adalah berasaskan tiga ketegori iaitu > 3.56 = tinggi, 1.33 hingga 3.66 = sederhana, dan < 1.32 = rendah.

HASIL KAJIAN DAN PERBINCANGAN

Purata umur responden ialah 45.2 tahun, 76.7% terdiri daripada wanita, 75% berbangsa Cina dan 70% berasal daripada agama Buddha. Daripada segi kelayakan akademik pula, 60% adalah hanya berpendidikan sehingga darjah enam dan sebanyak 11.7% memiliki ijazah pertama. Mereka memeluk agama Islam pada purata umur 25.8 tahun dan ini bermakna secara purata responden telah menganuti Islam selama hampir 20 tahun. Manakala 41.7% di kalangan mereka mempunyai pekerjaan di sektor awam atau swasta, dan 60% telah pun berkahwin. Profil demografi ini ditunjukkan dalam Jadual 1.

Bilangan kaum wanita di kalangan responden jauh melebihi bilangan lelaki. Ini disebabkan oleh beberapa faktor. Pertama, data menunjukkan jumlah sebenarnya saudara baru wanita di Malaysia jauh melebihi lelaki iaitu dengan kadar 70% : 30% (Rosey 1995). Kedua, sebanyak 27.0% daripada responden merupakan ibu tunggal yang mempunyai masa terluang untuk belajar di samping kehadiran mereka mendapat sedikit insentif kewangan daripada pihak penganjur program. Ketiga, melalui pemerhatian, wanita lebih terbuka untuk menuntut ilmu atas galakan keluarga atau suami untuk menghadiri kelas agama. Nisbah saudara baru wanita jauh lebih tinggi daripada saudara baru lelaki juga seperti yang dilaporkan di Jepun

JADUAL 1
Profil demografi responden (n = 60)

Ciri Demografi	Kekerapan	Peratus
Jantina		
Lelaki	14	23.3
Perempuan	46	76.7
Umur (tahun)		
56 ke atas	6	10.0
46 - 55	27	36.0
36 - 45	17	28.4
26 - 35	8	13.4
25 ke bawah	2	3.3
Min	45.2	
Sisihan piawai	9.8	
Status perkahwinan		
Berkahwin	36	60.0
Bujang	8	13.3
Janda/ibu tunggal	16	26.9
Agama Asal		
Buddha	42	70.0
Hindu	5	8.3
Kristian	7	11.7
Lain-lain	6	10.0

(wanita 69.7% dan lelaki 30.3%) disebabkan pertukaran ke agama Islam berlaku kerana wanita Jepun mengahwini kaum imigran Islam selepas mereka memeluk Islam (Anis 1998).

Jadual 2 menunjukkan profil sosial dan agama responden. Mereka memeluk Islam pada purata umur iaitu 25.8 tahun. Ini bersesuaian akta dalam Perlembagaan Persekutuan yang mana seseorang boleh memeluk agama lain pada umur minimum 18 tahun. Responden dalam kajian ini memberi sebab mereka memeluk Islam atas faktor hidayah Allah. Kajian-kajian lain (Nor Patimah 1990; Tusibah 1994; Maziah 1995; Rosmawati 1992) walau bagaimanapun mendapati bahawa sebab-sebab lain seperti berkahwin, pergaulan dengan kawan beragama Islam, tarikan kepada Islam juga merupakan sebab utama saudara baru memeluk Islam. Hidayah ialah petunjuk kepada jalan kebenaran dan terbuka hati untuk menerima Islam sebagai cara hidup. Menurut Teh (1990) majoriti yang terlibat dalam pengislaman akhir-akhir ini adalah di kalangan pekerja yang tahap pendapatan rendah disebabkan taraf pendidikan yang rendah, dan sebanyak sebanyak 60% responden dalam kajian ini mempunyai pendidikan sehingga Darjah 6 sahaja. Namun demikian terdapat mereka yang mempunyai tahap pendidikan yang tinggi iaitu ijazah pertama (11.7%) dan mempunyai pekerjaan yang tetap seperti guru dan kakitangan kerajaan (20%). Kebanyakan responden adalah berbangsa Cina dan 70% adalah berasal daripada agama Buddha. Kajian lepas (Rosey 1999) juga menunjukkan bahawa sebahagian besar saudara baru di Malaysia ialah berbangsa Cina yang beragama asal Buddha (Teh 1990). Lebih-lebih lagi di Negeri Melaka terdapat kelompok masyarakat Cina peranakan (Baba) yang telah berasimilasi dengan kebudayaan Melayu sejak sekian lama. Menurut Teh (1990) lagi melalui analisisnya di Asia Tenggara, dua perkara yang berharga yang jarang terdapat di kalangan imigran Cina pada waktu penghijrahan dahulu adalah wanita dan status sosial yang tinggi, dan untuk mendapatkannya orang Cina rela pindah ke agama Islam melalui perkahwinan dengan wanita Islam. Analisis Teh (1990) seterusnya menyatakan, salah satu keuntungan jangka pendek dari pengislaman adalah dengan adanya bantuan kewangan, membantu mencarikan pekerjaan kepada saudara baru yang diberikan oleh PERKIM dan Jabatan Agama di peringkat negeri.

Jadual 3 pula menunjukkan taburan responden berdasarkan kehadiran dalam aktiviti pembelajaran dalam tahun 2001. Data mendapati bahawa aktiviti kelas fardhu ain

JADUAL 2
Profil sosial dan agama (n = 60)

Ciri Sosial Dan Agama	Kekerapan	Peratus
Umur Memeluk Islam (tahun)		
10 Ke bawah	9	15.0
11 - 20	30	49.9
21 - 30	8	13.4
31 – 40	6	10.1
41 Ke atas	7	11.6
Min	25.8	
Sisihan piawai	12.6	
Bangsa		
Cina	45	75.0
India	5	8
Lain-lain	10	16.7
Sebab Masuk Islam		
Hidayah Allah	48	80.0
Berkahwin	7	11.7
Dorongan kawan	5	8.3
Kelulusan Akademik		
Darjah enam	36	60.0
SRP/PMR	6	10.0
SPM/ MCE	10	16.7
STPM/STU	1	1.7
Ijazah	7	11.7
Pekerjaan		
Kerajaan	12	20.0
Swasta	13	21.7
Surirumah	23	38.3
Lain-lain	12	20.0

JADUAL 3
Taburan responden mengikut aktiviti pembelajaran yang pernah dihadiri pada tahun 2001 (n = 60)

Aktiviti Pembelajaran	Kekerapan	Peratus	Kedudukan
Kelas fardhu ain	60	100	1
Majlis perayaan	60	100	2
Ceramah agama	56	93.3	3
Kuliah mingguan	54	90.0	4
Kursus	6	76.7	5
Diskusi bersama rakan	45	75.0	6
Forum agama	34	56.7	7
Simposium	26	43.3	8

merupakan aktiviti pembelajaran yang sangat tinggi kehadirannya. Ini diikuti pula dengan ceramah agama (93.3%), kuliah mingguan (90.0%), kursus (76.7%) seperti kursus jenazah dan perkahwinan. Majlis keraian seperti perayaan Maulidur Rasul dan Hari Raya adalah aktiviti yang sangat tinggi kehadiran responden (100%). Kelas fardhu ain yang dianjurkan oleh Balai Islam sangat mendapat sambutan. Kelas ini merupakan satu-satunya program yang boleh responden ikuti setiap minggu iaitu pada hari Sabtu dan Ahad. Manakala program ceramah agama dan majlis perayaan pula biasanya diadakan secara besar-besaran mengikut waktu tertentu. Menurut mereka di sinilah tempat mereka bersosialisasi dengan pemimpin dan saudara baru yang lain.

Jadual 4 menunjukkan persepsi responden terhadap kepentingan objektif program pembelajaran. Secara keseluruhan responden berpendapat bahawa kepentingan objektif pembelajaran yang mereka ikuti adalah tinggi (min = 4.47). Program pembelajaran yang telah mereka ikuti dikatakan telah dapat memberi panduan dalam mengurus kehidupan berlandaskan ajaran Islam (min = 4.57) meningkatkan kesungguhan belajar (min = 4.53) dan dapat meningkatkan lagi kemahiran serta pengetahuan tentang agama Islam (min = 4.53).

Responden sangat berminat untuk belajar mendalami ajaran Islam. Ini bertepatan dengan tujuan pembelajaran dewasa seperti yang dinyatakan oleh Knowles (1984) dan Robinson (1985) bahawa pada suatu peringkat kehidupan seseorang dewasa, orientasi pembelajaran lebih tertumpu kepada keperluan diri, sama ada ia berorientasikan masalah, pekerjaan ataupun kehidupan. Aslanian dan Brickell (1980) serta Garelli (1996) menambah lagi bahawa faktor penyebab seseorang untuk belajar ialah akibat perubahan dalam hidup. Data yang terhasil jelas menunjukkan bahawa saudara baru yang dikaji amat memerlukan program pembelajaran mengenai ilmu dan amalan Islam yang dianuti.

Data dalam Jadual 5, secara keseluruhan menunjukkan persepsi responden terhadap suasana pembelajaran dalam kelas adalah memuaskan (min = 4.09). Namun begitu responden beranggapan bahawa guru mereka perlu lebih berkemampuan untuk menguasai pelbagai bahasa (min = 3.51, iaitu sederhana) kerana responden terdiri daripada pelbagai kaum dan kebudayaan. Responden juga berpendapat supaya pengendalian sesi soal jawab dalam kelas diperkemaskan (min = 3.88) dan keselesaan kelas dalam keadaan kurang memuaskan (min = 3.90). Ini disebabkan kelas mereka sering diadakan pada hujung minggu iaitu pada hari Sabtu dan Ahad atau pada hari cuti umum, yang mana beberapa aktiviti lain seperti majlis keraian dan program kebudayaan dijalankan serentak berhampiran di mana pembelajaran diadakan.

JADUAL 4
Persepsi responden terhadap kepentingan objektif program pembelajaran saudara baru (n = 60)

Kenyataan	Min	Sisihan Piawai	Kedudukan
Mengurus kehidupan	4.57	.67	1
Kesungguhan belajar	4.53	.68	2
Meningkat kemahiran	4.53	.67	3
Meningkat pengetahuan	4.52	.67	4
Kekuatan diri	4.48	.71	5
Sikap positif	4.45	.77	6
Memudah kehidupan	4.42	.59	7
Tanggungjawab diri	4.27	.66	8

Min Keseluruhan : 4.47, Sisihan Piawai : 0.68

JADUAL 5
Persepsi responden terhadap suasana pembelajaran di dalam kelas (n = 60)

Kenyataan	Min	Sisihan Piawai	Kedudukan
Hubungan guru- pelajar baik	4.40	.76	1
Tunjuk ajar yang menarik	4.38	.58	2
Aktiviti pembelajaran yang berkesan	4.30	.81	3
Bahan rujukan sesuai	4.27	.63	4
Peluang memberi idea	4.05	.75	5
Kelas selesa dan sesuai	3.90	1.04	6
Soal jawab dalam kelas	3.88	.80	7
Kemampuan guru dalam pelbagai bahasa	3.51	.89	8

Min Keseluruhan : 4.09, Sisihan Piawai : 0.7

Satu lagi aspek yang menjadi persoalan dalam kajian ialah mengenai isi kandungan pelajaran seperti ditunjukkan dalam Jadual 6. Secara keseluruhan responden mengatakan bahawa isi kandungan pelajaran berada pada tahap sederhana (min = 3.22). Secara khusus, responden mengatakan isi kandungan pelajaran telah mencapai tujuan belajar mereka (min = 4.00) kerana pelajaran tersebut adalah mempunyai aspek teori dan amali (min = 4.00). Walau bagaimanapun ada kalanya isi kandungan pelajaran tidak dapat menepati kehendak responden (min = 2.62), isi pelajaran tidak menentu (min = 2.65) dan pelajar tidak tahu isi kandungan untuk kelas berikutnya (min = 2.60).

Persepsi responden yang kurang memuaskan ini terhadap beberapa aspek isi kandungan pelajaran adalah berkemungkinan disebabkan kurangnya penelitian dijalankan oleh penganjur tentang keperluan isi kandungan pembelajaran untuk saudara baru. Begitu juga tahap penerimaan pelajar yang berbeza memandangkan latar belakang pendidikan mereka yang sebahagiannya berada ditahap yang rendah dan tempoh mereka selepas memeluk Islam yang tidak sama. Ini kerana menurut Wan Fauziah (1992), hampir 90% daripada saudara baru di Malaysia terdiri daripada golongan yang berpendapatan rendah dan tidak mempunyai kelulusan yang tinggi. Responden juga menyatakan bahawa mereka tidak dapat memahami sesuatu pelajaran dengan baik kerana terlalu banyak perkara yang dipelajari pada setiap sesi kelas. Ada kalanya responden masih kurang faham tujuan mereka belajar untuk sesuatu sesi, apa yang seharusnya dipelajari lebih dahulu dan daripada mana hendak bermula mengikuti pembelajaran. Kajian Wan Fauziah juga menunjukkan kurikulum pembelajaran saudara baru ada kalanya dijalankan secara ad hoc tanpa menetapkan profil pelajar yang menghadiri sesuatu sesi pembelajaran. Seperti kajian Maziah (1995) mencadangkan supaya program dakwah perlu dimulakan dengan perkara-perkara yang menjadi kegemaran mereka dahulu, contohnya hal kemasyarakatan dan sosial kemudian sedikit demi sedikit dikaitkan dengan agama. Di kalangan responden juga terdapat mereka yang kurang memahami bahasa Malaysia dengan baik. Faktor ini juga menjadi penghalang untuk mereka memahami dengan baik isi pelajaran yang disampaikan.

Jadual 7 menunjukkan data yang diperoleh dari aspek penyampaian dan pengendalian yang keseluruhan memuaskan (min = 3.79). Walau bagaimanapun data menunjukkan tahap persepsi yang berbeza mengikut pelbagai aspek pengendalian. Mereka beranggapan bahawa penyampaian guru adalah baik (min = 4.33), begitu juga pengajar memberi peluang berinteraksi (min = 4.17), peruntukan masa yang cukup (min = 4.16), penjelasan jawapan kepada pelajar (min = 4.10). Namun demikian ada aspek pengendalian pembelajaran yang dianggap masih sederhana oleh responden seperti pembelajaran yang hanya menggunakan bahasa Melayu sahaja (min = 2.78).

Fasilitator yang mengajar di kalangan responden dapat menyampaikan ilmu dan berinteraksi dengan baik. Ini kerana guru yang membimbing mereka mempunyai pengalaman lebih 10 tahun dalam memberi pendidikan kepada saudara baru. Demikian juga hubungan antara guru dan murid adalah memuaskan bukan hanya di dalam kelas sahaja, tetapi juga di luar kelas. Responden bersetuju tentang masa yang diperuntukkan bagi sesuatu sesi kelas iaitu 2

JADUAL 6
Persepsi responden terhadap isi kandungan pelajaran dalam program pembelajaran (n = 60)

Kenyataan	Min	Sisihan Piawai	Kedudukan
Mencapai tujuan belajar	4.00	.88	1
Mempunyai teori dan amali	4.00	.97	2
Diajar berulang-ulang	3.48	1.03	3
Isi kandungannya umum	3.47	1.05	4
Isi kandungan tidak menentu	2.65	1.04	6
Tidak menepati kehendak saya	2.62	1.07	7
Tidak tahu jadual hari berikut	2.60	1.12	8

Min Keseluruhan : 3.22, Sisihan Piawai : 1.03

JADUAL 7
Persepsi responden terhadap penyampaian dan pengendalian program pembelajaran (n = 60)

Kenyataan	Min	Sisihan Piawai	Kedudukan
Penyampaian guru	4.33	47	1
Peluang berinteraksi	4.17	.61	2
Peruntukan masa	4.16	.78	3
Penjelasan jawapan	4.10	.71	4
Perbincangan melalui bengkel	3.77	.81	5
Penggunaan ABM	3.65	1.09	6
Kaedah kuliah sahaja	3.40	.98	7
Bahasa selain bahasa Melayu	2.78	1.12	8

Min Keseluruhan : 3.79 , Sisihan Piawai : 0.82

jam. Penyampaian pelajaran yang hanya menggunakan bahasa Melayu sahaja merupakan satu kelemahan program kerana jumlah guru yang bertugas adalah terhad dan mereka tidak berkemampuan berbahasa lain seperti bahasa Cina dan Tamil kecuali Inggeris. Responden terdiri daripada pelbagai bangsa seperti Cina, India, Portugis, Iban, dan Orang Asli. Mereka dikumpulkan di dalam kelas yang sama. Kajian Maziah (1995) menyokong kebenaran perlunya fasilitator untuk menguasai beberapa bahasa lain seperti bahasa Inggeris, Cina, Tamil dan sebagainya. Data kajian ini juga menunjukkan bahawa responden bersetuju supaya guru menggunakan pelbagai alat bantuan mengajar seperti slaid, video dan sebagainya. Mereka juga menghendaki guru menggunakan kaedah mengajar yang pelbagai, tidak hanya menggunakan teknik ceramah sahaja di dalam kelas.

TANGGAPAN PEGAWAI TENTANG MASALAH PELAKSANAAN PROGRAM PEMBELAJARAN

Transkripsi data daripada temu bual dengan tiga pegawai Balai Islam dianalisis dengan menggunakan teknik 'constant-comparative'. Hasil analisis menunjukkan bahawa program pembelajaran menghadapi tiga masalah utama iaitu pertama, Balai Islam dianggap sebagai tempat mengadu masalah; kedua, status pekerjaan pegawai di Balai Islam; ketiga, kurikulum yang kurang lengkap. Setiap satu masalah ini diterangkan dan disokong dengan kenyataan verbatim daripada responden. Nama responden yang digunakan dalam setiap kenyataan verbatim bukanlah nama sebenar atas tujuan kerahsiaan.

Balai Islam Dianggap sebagai Tempat Mengadu Masalah

Ketiga-tiga pegawai hampir sebulat suara mengatakan bahawa ramai saudara baru yang mereka temui di Balai Islam sering meluahkan pelbagai permasalahan kehidupan yang mereka hadapi selepas memeluk Islam. Seperti kata Ustaz Ahmad:

> Kami di sini seolah-olah dianggap sebagai tempat mengadu hal. Mereka datang pada bila-bila masa dan bercakap tentang apa sahaja terutamanya masalah yang mereka hadapi. Ada kalanya mereka mengadu tentang buku sekolah anak-anak, anggota keluarga sakit, masalah tempat tinggal dan pelbagai bayaran bil.

Masalah saudara baru yang lebih ketara adalah berkaitan kemiskinan. Secara keseluruhannya saudara baru di negara ini merupakan golongan miskin (Teh 1990) dan kemiskinan telah mereka hadapi sebelum memeluk Islam lagi. Ada yang beranggapan bahawa cara mudah mengatasi kemiskinan ialah dengan memeluk Islam kerana saudara baru diberi perhatian oleh pelbagai pihak termasuk Balai Islam. Seiring dengan keadaan ini responden lain yang ditemu bual mengatakan:

> Saudara baru faham yang dalam Islam kita ada memberi zakat kepada orang miskin saudara baru di sepanjang masa. Ada daripada mereka yang datang ke sini (Balai Islam) meminta hak mereka.... Bantuan zakat bermacam-macam antaranya makanan seperti beras, pakaian dan alat untuk bekerja seperti mesin jahit, mesin tebu dan lain-lain (Ustaz Amin).

> Ada yang datang hanya untuk mendapatkan wang insentif kehadiran mengikuti kursus sebanyak RM5 sahaja. Dulu mereka dapat RM10, sejak masalah

ekonomi melanda negara wang tersebut dikurangkan kepada RM5 dan itu pun mereka sanggup datang untuk mendapatkannya. Jikalau sepuluh kali sudah berjumlah RM50 (Ustazah Afifah).

Selain itu, hampir semua saudara baru menghadapi masalah dengan keluarga asal mereka selepas memeluk Islam. Situasi pelajar yang terganggu aspek psikologi ini mempengaruhi keberkesanan pembelajaran mereka. Ada di kalangan mereka yang diancam dan diusir keluarga menyebabkan timbul masalah tempat tinggal, malah ada yang terpaksa tinggal dengan orang yang bersimpati atau terpaksa menyewa sendiri. Keadaan ini semakin buruk kerana faktor kemiskinan seperti yang dilaporkan oleh Ustaz Amin:

Pihak kami di Balai Islam ada menyediakan kedai panel untuk saudara baru yang miskin supaya mereka mengambil barang keperluan harian di situ dan memang ditetapkan had jumlah harga barang yang dibenarkan diambil pada setiap bulan. Tetapi masalahnya ialah kadang-kadang mereka pergi ke kedai untuk mendapatkan wang dari tuan kedai, bukannya barang keperluan harian.

Masalah saudara baru yang lebih sukar mereka atasi ialah pandangan serong orang Melayu terhadap pengislaman mereka. Ini berkaitan dengan anggapan orang Melayu bahawa saudara baru mempunyai niat 'ada udang di sebalik batu' dan tidak ikhlas memeluk Islam. Malah ada orang Melayu yang mengatakan masuk Islam bermakna menjadi orang Melayu, yang situasi ini dinafikan oleh saudara baru kerana mereka tidak semestinya mengikuti kebudayaan dan cara hidup orang Melayu selepas memeluk Islam seperti apabila bersembahyang mesti memakai baju Melayu dan kain pelikat seperti dinyatakan dalam kata-kata berikut:

Orang Melayu khususnya di kampung sering menganggap saudara baru mesti ikut adat orang Melayu seperti berbaju Melayu dan berkain pelikat bila bersembahyang ke masjid. Perkara ini bukan senang hendak diubah dalam masa sehari dua selepas memeluk Islam. Bayangkan berapa lama dia sudah terbiasa dengan cara hidupnya, tiba-tiba disuruh tukar dalam sekelip mata (Ustaz Ahmad).

Terdapat kes kononnya saudara baru telah murtad. Seorang lelaki Melayu telah membuat laporan melalui telefon ke Pejabat ini, bahawa saudara baru telah murtad. Perkara ini berlaku apabila mereka melihat saudara baru balik ke rumah asal mereka untuk menziarahi keluarga mereka. Tanpa usul periksa terlebih dahulu masyarakat menganggap mereka telah murtad. Dari situ timbullah persoalan ikhlas atau tidak mereka memeluk Islam. Mereka juga sering ditakutkan dengan pertanyaan seperti sanggupkah nanti berpuasa sebulan, solat lima waktu, bersunat dan sebagainya. Malahan ada yang bertanya pada bakal isteri (saudara baru) sanggupkah berpoligami nanti? (Ustazah Afifah).

Status Pekerjaan Pegawai di Balai Islam

Analisis transkripsi mendapati permasalahan program pembelajaran yang dihadapi oleh saudara baru mempunyai kaitan dengan permasalahan yang dihadapi oleh pegawai Balai Islam dalam pelaksanaan program pembelajaran. Masalah ini dapat diterangkan daripada tiga aspek iaitu jumlah pegawai, status jawatan dan kepakaran yang dimiliki.

Jumlah pegawai yang bertugas di Balai Islam ialah seramai enam orang. Jumlah ini dikatakan adalah kecil berbanding jumlah pelanggan atau saudara baru yang mereka layani hampir 20 orang sehari, yang setiap seorang mengemukakan pelbagai jenis masalah yang sukar untuk diselesaikan dengan segera. Tambahan pula pegawai mengakui kepakaran yang mereka miliki adalah terbatas, khususnya dalam aspek kaunseling, memberi kefahaman tentang Islam kepada saudara baru yang terdiri daripada pelbagai bangsa dan budaya. Di kalangan pegawai yang ditemu bual mengatakan jawatan mereka mempunyai status kontrak, sementara atau sukarela. Hanya seorang daripada mereka mempunyai kelulusan peringkat ijazah, seorang lagi merupakan bekas tentera dan yang ketiga mempunyai kelulusan Sijil Pelajaran Malaysia (SPM). Manakala dua daripada mereka adalah juga merupakan saudara baru yang telah memeluk Islam setiap seorangnya pada 27 tahun dan 13 tahun yang lalu. Status jawatan sedemikian disebabkan Jabatan Agama Negeri tidak melihat keperluan meningkatkan jumlah pegawai di Balai Islam. Fakta di atas disokong melalui kenyataan verbatim berikut :

Pegawai di sini sebenarnya diambil daripada pelbagai bangsa seperti Cina, India, Sikh dan Orang Asli. Diharapkan dengan adanya mereka di sini dapat membantu memberi kefahaman kepada saudara baru yang sama bahasa dan latar belakang budaya. Tetapi sekarang yang tinggal hanyalah pegawai Cina dan India sahaja dan seorang Melayu. Tambahan pula mereka tidak

kekal di sini sebab status jawatan bersifat kontrak. Saya sendiri juga berjawatan kontrak. Selepas dua tahun sekali kita memperbaharui kontrak. Jadi keberkesanan kerja terpulang pada usaha kita sendiri (Ustaz Ahmad).

Pegawai kita perlu diberi kursus atau latihan mengikut perubahan sesuai dengan perkembangan terkini. Balai Islam sendiri ada menghantar pelajar yang berpotensi di kalangan saudara kita untuk menyambung pelajaran di luar negara supaya menjadi pendakwah dan dapat membantu Balai Islam pada masa akan datang. Itu pun buat masa sekarang cuma ada seorang sahaja. Atau pihak Jabatan Agama boleh memberi cuti bergaji kepada pegawai untuk menghadiri kursus ini. Memang kita akui kita kurang terlatih dan mempunyai kelemahan untuk mengendalikan pembelajaran di kalangan saudara baru (Ustaz Amin).

Kurikulum yang Kurang Lengkap

Analisis daripada transkripsi data juga menunjukkan bahawa kurikulum pembelajaran saudara baru telah disediakan oleh pihak JAKIM (Jabatan Kemajuan Islam Malaysia). Namun pegawai mendapati modul yang ada terlalu umum dan tidak mengambil kira profil terperinci pelajar yang dikatakan mempunyai latar belakang dan masalah yang berbeza dan rumit. Oleh itu guru terpaksa menggunakan buku yang diperoleh di pasaran yang memerlukan tahap kebolehan pemahaman yang tinggi. Buku tersebut sering digunakan oleh guru-guru agama yang lain di masjid-masjid. Buku tersebut selalunya menggunakan tulisan jawi yang sudah tentu sukar difahami oleh saudara baru. Masalah ini dapat dikesan melalui kenyataan-kenyataan berikut:

Sebenarnya ada kurikulum yang disediakan oleh JAKIM, tetapi ada beberapa perkara yang kurang sesuai bila hendak dilaksanakan kepada mualaf di sini. Di kalangan mereka ada yang buta huruf, tidak faham bahasa Melayu dan sebagainya, maka kami (Balai Islam) terpaksa mencari sumber lain di pasaran dan berbincang dengan guru yang mengajar mengikut kesesuaian penerimaan pelajar (Ustaz Ahmad).

Buku panduan ini saya dapat daripada kawan saya di Singapura. Sungguhpun buku ini ditulis dalam bahasa Inggeris, nampaknya susunan isi kandungan pelajarannya lebih mudah untuk difahami dan sesuai kepada semua peringkat termasuk kita yang telah lama memeluk Islam sekalipun. Jadi saya gunakan buku ini untuk mengajar (Ustaz Amin).

Pelajar suka bertanya di dalam kelas bila ada perkara yang tidak difahami. Selalunya mereka banyak bertanya tidak mengira topik dan tujuan sesuatu jadual belajar. Apabila ditambah dengan penerangan yang diberikan oleh ustaz terhadap sesuatu pertanyaan pelajar, ini menyebabkan isi pelajaran kadang-kadang nampak terlalu banyak untuk difahami pada sesuatu masa (Ustazah Afifah).

KESIMPULAN DAN CADANGAN

Perubahan yang terjadi dalam hidup sebagai saudara baru tidak semudah seperti yang dilihat. Sungguhpun mereka menerima Islam dengan sepenuh hati sebagai satu cara hidup, tetapi mereka masih kurang memahami apakah perkara yang tergolong sebagai ibadah. Ini memberi implikasi kepada pembentukan program pembelajaran di kalangan saudara baru.

Purata umur responden iaitu 45.2 tahun menunjukkan bahawa mereka terdiri daripada golongan yang dewasa. Secara umum individu dewasa mempunyai keunikan tersendiri daripada segi pembelajaran yang perlu diikuti secara tidak formal. Tambahan pula mereka merupakan saudara baru yang mempunyai pelbagai latar belakang bahasa, bangsa dan budaya.

Di kalangan saudara baru yang dikaji, golongan wanita merupakan kumpulan yang lebih aktif dalam mengikuti program pembelajaran berbanding lelaki. Ini disebabkan mereka terdiri daripada ibu tunggal atau janda dan mempunyai masa terluang dan jumlah saudara baru wanita memang jauh melebihi jumlah lelaki. Berdasarkan pengalaman penyelidik, didapati bahawa secara keseluruhan kaum wanita pada masa kini lebih berminat mendalami ilmu agama secara tidak formal berbanding lelaki.

Faktor kemiskinan merupakan masalah utama yang dihadapi oleh saudara baru dan mereka sentiasa mengharapkan bantuan dari Balai Islam. Lebih separuh daripada responden mempunyai tahap pendidikan yang rendah. Hal ini menyebabkan mereka sukar mendapat pekerjaan tetap bagi menjamin masa depan mereka. Pihak Balai Islam amat mengambil berat perkara ini dengan menghulurkan apa sahaja bantuan yang termampu kepada saudara baru. Faktor ini merupakan antara sebab melambatkan pencapaian matlamat program pembelajaran yang dilaksanakan. Tambahan pula di kalangan mereka mempunyai pelbagai masalah peribadi yang lain.

Agama Islam bersifat terbuka untuk menerima sesiapa sahaja menjadi penganutnya. Bangsa Cina yang berasal daripada agama

Buddha merupakan golongan yang paling ramai memeluk Islam. Oleh itu gerakan dakwah kepada masyarakat Cina perlu diperluas memandangkan mereka merupakan golongan terbesar yang memeluk Islam di Malaysia berbanding bangsa lain. Pandangan negatif segelintir masyarakat Melayu terhadap saudara baru perlu dikikis kerana ia memberi implikasi besar kepada imej umat Islam di negara ini.

Kehadiran pelajar amat memuaskan sewaktu diadakan kelas fardu ain dan ceramah agama. Wang insentif kehadiran sebanyak RM5 mungkin turut mempengaruhi kedatangan mereka ke kelas. Pelajar menunjukkan minat yang mendalam untuk mempelajari ilmu dan menerima Islam sebagai cara hidup. Namun Balai Islam masih belum mendapat bahan pelajaran yang dianggap sesuai untuk dijadikan modul kepada pelajar bagi memudahkan pelaksanaan program pembelajaran. Guru-guru serta pegawai di Balai Islam kurang didedahkan dengan latihan atau kursus yang bersesuaian ke arah mencapai keberkesanan program pembelajaran.

Daripada empat komponen yang dikaji dalam pelaksanaan program pembelajaran di kalangan saudara baru menurut persepsi mereka, satu daripadanya menunjukkan purata skor yang sederhana. Walau bagaimanapun terdapat beberapa ciri yang masih dianggap lemah termasuk, suasana persekitaran kelas, isi kandungan, dan teknik penyampaian yang perlu diberi penekanan oleh Balai Islam dalam melaksanakan sesuatu program pembelajaran.

Daripada persepsi pegawai yang ditemu bual, kajian mendapati mereka menghadapi beberapa masalah dalam pelaksanaan program pembelajaran tersebut. Ini merangkumi tiga masalah utama. Pertama, Balai Islam sebagai tempat mengadu segala hal; kedua, masalah status pekerjaan pegawai di Balai Islam dan ketiga, kurikulum yang kurang mantap. Jumlah pegawai di Balai Islam tidak mencukupi berbanding khidmat yang diperlukan untuk semua saudara baru. Tambahan pula pegawai kurang mempunyai kepakaran dalam kaedah penyelesaian masalah, kaunseling dan memberi kefahaman kepada saudara baru yang terdiri daripada pelbagai bahasa, bangsa dan budaya. Status jawatan kontrak, sementara dan sukarela pegawai dan guru yang bertugas di Balai Islam menunjukkan kurang kepekaan pihak Jabatan Agama terhadap kepentingan dan keperluan dakwah secara bersungguh-sungguh kepada saudara baru.

Kesimpulan terakhir ialah kajian mendapati pelaksanaan program pembelajaran di Balai Islam amat penting diberi perhatian yang bersungguh-sungguh bagi memberi kefahaman ke arah pengamalan yang lebih baik kepada saudara baru. Hal ini melibatkan semua pihak di Balai Islam, Jabatan Agama Islam dan Majlis Agama Islam Negeri. Berdasarkan kesimpulan di atas, beberapa cadangan bagi mempertingkatkan pelaksanaan program pembelajaran di kalangan saudara baru berdasarkan konteks kajian ini ialah seperti berikut:

i) Pihak yang merangka kurikulum program pembelajaran saudara baru perlu mengkaji secara terperinci mengenai latar belakang pelajar terlebih dahulu. Keadaan ini akan mewujudkan suasana pembelajaran yang lebih baik sesuai dengan sifat pelajar dewasa yang sedang melalui proses transisi. Isi pelajaran yang baik termasuk teknik mengajar, menggunakan alat bantuan mengajar yang terkini dan sesuai dengan kemampuan pelajar menerima pembelajaran.

ii) Mengadakan 'Islamic Information Centre', perpustakaan di tempat-tempat strategik seperti di tengah bandar untuk mendidik orang ramai terutama mereka yang baru memeluk Islam dan mereka yang berminat dengan Islam supaya dapat memahami agama tersebut dengan lebih mudah. Ini juga akan dapat mendidik masyarakat Melayu dengan moral yang tinggi supaya menerima saudara baru sebagai saudara seaqidah tanpa mempersoal keikhlasan mereka.

iii) Pegawai-pegawai syarak seperti imam, bilal, ustaz dan ahli Jawatankuasa Keselamatan Kampung (JKKK) boleh memainkan peranan penting dengan mengambil saudara baru sebagai keluarga angkat supaya mereka mudah membuat rujukan terdekat untuk menyelesaikan masalah yang dihadapi.

iv) Jabatan Agama Islam Melaka (JAIM) perlu mewujudkan rangkaian kerjasama dengan syarikat-syarikat swasta bagi mencari pekerjaan yang sesuai untuk saudara baru atau menjalinkan kerjasama dengan bank bagi mendapatkan kemudahan pinjaman kewangan untuk memulakan perniagaan kecil dan lain-lain yang berkaitan. Ini berdasarkan fakta bahawa kebanyakan

saudara baru mempunyai kedudukan ekonomi yang rendah.

v) Kajian akan datang dicadangkan supaya menumpukan kepada kaedah pembelajaran yang berkesan di kalangan saudara baru yang bertaraf profesional seperti doktor, peguam, jurutera, saintis dan sebagainya. Kajian akan datang juga boleh ditumpukan kepada peranan saudara baru sebagai pemangkin dalam gerakan Islamiah di Malaysia.

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Impact of Credit Risk on Farm Planning in Chiang Mai Valley, Thailand

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ABSTRAK

Unsur risiko yang dihadapi di dalam usaha perladangan bukan sahaja mempengaruhi strategi pengeluaran tetapi juga melibatkan pembuatan keputusan oleh peminjam untuk melabur dan kesanggupan pemberi pinjaman memberikan kredit. Risiko yang dikaitkan dengan kos dan kemudahan kredit merupakan unsur tambahan di dalam portfolio risiko petani yang akan mempengaruhi penggunaan pinjaman dan struktur pengagihan kapital. Teori portfolio mencadangkan bahawa model risiko-cekap penyelesaian optimum tanpa risiko kredit mempunyai aktiviti pertanian campuran yang padat. Mengambil kira risiko akan menyebabkan anjakan yang tak selari akan gugusan yang cekap kepada satu tahap varians yang tinggi bagi setiap jangkaan nilai fungsi objektif. Kajian ini adalah bertujuan untuk mengukur keperluan kredit dalam keadaan berisiko di dalam operasi ladang dan kesannya terhadap petani pengelak risiko dengan mengguna model pemprograman risiko berbilang masa. Model ini menekankan kaitan di antara risiko kredit dan pendapatan perladangan dan digunakan untuk mengenal pasti perancangan perladangan yang cekap di Chiang Mai Valley. Keputusan pemprograman risiko mendapati ianya bertetapan dengan tindak balas yang dijangkakan. Memasukkan risiko kredit mecerminkan keseluruhan keadaan risiko petani. Apabila tahap pengelak risiko ditingkatkan mengikut peratusan jumlah pinjaman kapital dan operasi, tiada pinjaman kapital dibuat di tahap pengelakan-risiko yang tinggi, dan ini menyebabkan kesemua rizab kredit tidak digunakan. Satu gugusan yang merangkumi 13 portfolio yang cekap di atas bahagian pertengahan sempadan E-V juga diwujudkan daripada model pemprograman risiko.

ABSTRACT

The risk elements inherent in farming not only influence production strategies but also borrowers decision to invest capital and the willingness of lenders to supply capital. Risk associated with costs and availability of credit is an added element of farmers' portfolio risk, which can influence debt use and the resulting capital structure. Portfolio theory suggests that the model farm's risk-efficient optimal solutions, derived without credit risk, have a concentrated mix of activities. Incorporation of risk will cause a nonparallel shift of the efficient set towards higher variances for each expected value of the objective function. This study was undertaken to measure credit availability in response to risk in farm operations and its impact on risk-averse farmers by utilising a multiperiod risk-programming model. The model emphasises the relationships between credit risks and farm income risk and is used to generate risk-efficient farm plans for representative farms in Chiang Mai Valley. The risk-programming results obtained are consistent with anticipated responses. The inclusion of credit risk takes a fuller account of the overall risk positions of farmers. As risk-aversion increases as a percentage of total for both capital and operating loans, no capital loans occur at the highest risk-aversion level, leaving intact the entire reserve of capital credit. A set of 13 efficient portfolios in the intermediate portion of the E-V frontier was also generated from the risk-programming model.

INTRODUCTION

Thailand, being a developing country, has 63% of its population engaged in the agricultural sector. Agriculture not only serves as the major source of food and fibres, but is also the main source of foreign exchange earnings. Thus, in consideration of the strategic importance and strong contribution of agriculture to the well being of the country, the Royal Thai Government has given serious attention to agricultural development and production.

Like any other developing country, agricultural production in Thailand faces uncertainties in output namely yield and price risks. As such, risk-averse farmers have preferred to adopt less risky crop production strategies rather than optimise for a profit maximisation strategy.

The risk elements inherent in farming not only influence the production strategies but also influence the decision of borrowers to invest capital and the willingness of lenders to supply capital. Other things being equal, the greater the degree of risk and uncertainty involved in a given investment, the greater the degree of risk and uncertainty to the person who advances credit.

A study by Barry *et. al* (1981) concluded that risks associated with costs and availability of credit are an added element of farmers' portfolio risk that influence debt use and the capital structure for risk- averse farmers. Hence, it is appropriate to include the effects of credit risk in farm firm analysis in order to evaluate its effects on farmers' portfolios.

Portfolio theory led us to anticipate that the model farm's risk-efficient set, derived without credit risk, should have a concentrated mix of activities at the peak of the frontier. This results in maximum resource utilization and farm growth. The risk will also be the highest among the risk-efficient solutions. Movements to lower risk on the efficient set should show slower growth, less use of production capacity, greater diversification, lower leverage, larger credit reserves and other risk response factors.

Including credit risk will cause a non-parallel shift of the risk-efficient set toward higher variance for each expected value of the objective function. The effects on an optimal portfolio will depend on how the decision maker's risk aversion (t) remains constant and the optimal portfolio will have a lower expected value and variance (Robison and Barry 1977). Still lower risk and returns would occur for decreasing absolute risk aversion. Solution should have some combination of slower growth of net wealth, less use of production capacity, greater diversification, or greater reserves compared to the absence of credit risks. Most of the differences should occur in rates of investment and firm growth and in holding of credit reserves.

Thus, the objectives of this paper are twofold: first to develop a procedure to measure credit availability in response to risk in farm operations, and second to analyse the results and draw implications of behaviour for risk averse farmers by utilizing a multiperiod risk-programming model which emphasises the relationships between credit risks and farm income risk, to come up with risk efficient farm plans for a representative farm in the Chiang Mai Valley. In general, farmers in Chiang Mai Valley are conservative due not only to the losses, which they may have to incur if losses occur, but also by the higher price, which they have to pay for the loans. In view of the above, problems faced by both farmers and lenders in financing are closely associated with the risks and uncertainties in agriculture.

THE THEORETICAL FRAMEWORK AND METHODOLOGY

The mean-variance approach or portfolio theory is well known and much debated, especially about the limited generality of its assumptions. However, its widespread use (Robison and Brake 1979), its explicit measures of risk, and rigorous demonstration of its usefulness as an approximate method for portfolio selection help make it an acceptable model for showing the portfolio effects of credit risk (Tsiang 1972; Levy and Markowitz 1979). Portfolio theory defines a risk-efficient set as the combinations of risky assets that minimize variance for expected returns. In empirical analysis, the risk coefficient set is subject to other specific resource constraints and business requirements.

Barry *et al.* (1983) consider a risk-averse farmer as those who must choose a level of debt (D) with which to leverage equity (E) in financing risky production with total farm assets (A). Expected returns before interest and consumption and variance from investment in risky farm assets are designated r and σ_r^2 respectively. When credit is specified only in deterministic terms, cost of

using credit in borrowing is expressed as rate $i = i_b + i_r$, with both components having zero variance. Component i_b is the interest rate paid to the lender, and liquidity premium i_r is the farmer's value of credit reserve. When credit is treated as a random variable, the cost of using credit in borrowing is expressed as expected rate i, with variance σ_i^2, and covariance σ_{ri} with return from risky farm assets. Hence, risk is treated in probabilistic terms with variance used to measure likelihood of events occurring that produce less than expected results.

To show a closed-form solution, let the farmer's utility function be approximated by the negative exponential,

$$U(\pi) = 1 - e^{2\tau\pi}, \tag{1}$$

where π is the degree of risk aversion ($\tau > 0$), and t is the level of income. Freund (1956) has shown that maximizing the expected value of a negative exponential integrated over a normal density function, as is assumed for r and i, is equivalent to maximizing

$$E[U(\pi)] = E(\pi) - \tau\sigma_\pi^2. \tag{2}$$

Notation $E(\pi)$ and σ^2_π now represent the expected profits and variance, respectively, of the farmer's portfolio. Expected profits are defined as the returns to assets (rA) less the cost of borrowing (iD)

$$\pi = r\bar{A} - i\bar{D}. \tag{3}$$

Portfolio variance is

$$\sigma_\pi^2 = \sigma_r^2 A^2 \tag{4a}$$

where cost of borrowing is deterministic and a random variable

$$\sigma_\pi^2 = \sigma_r^2 A^2 + \sigma_i^2 D^2 - 2AD\sigma_{ri}, \tag{4b}$$

Thus, expression (4b) is variance of the difference between two random variables. Hence, the covariance term has a negative sign preceding it, indicating that the lower (higher) is the correlation between r and i, the greater is the increase (reduction) in total portfolio variance (Fama 1976).

For the deterministic credit case, substituting the expressions in equation (3) and (4a) into equation (2) yields

$$E(U(\pi)) = E(r\bar{A} - i\bar{D}) - (\sigma_r^2 A^2) \tag{5}$$

Substituting $D + E = A$ and considering the level of debt (D) as a decision variable, the first-order condition for an expected utility-maximizing level D^* is

$$dU(\pi)/dD = \bar{r} - \bar{i} - 2\tau\sigma_r^2 D - 2\tau\sigma_r^2 E = 0, \tag{6}$$

which gives optimal debt of

$$D^* = (\bar{r} - \bar{i} - 2\tau\sigma_r^2 E)/(2\sigma_r^2) \tag{7}$$

Differentiating (7) with respect to r, i, τ, σ_r^2, and E shows the following comparative statistic properties;

$$dD^*/dr = 1/(2\tau\sigma_r^2) > 0, \tag{8a}$$
$$dD^*/di = -1/(2\tau\sigma_r^2) < 0, \tag{8b}$$
$$dD^*/dE = -1 < 0, \tag{8c}$$
$$dD^*/d\tau = (-\bar{r} - \bar{i}) / (2\tau^2\sigma_r^2) < 0, \tag{8d}$$
$$dD^*/d\sigma_r^2 = (-r + i) / (2\tau\sigma_r^4) < 0. \tag{8e}$$

Optimum debt is positively related to changes in expected returns on farm assets and inversely related to changes in costs of borrowing, equity, variance of returns, and risk aversion. In the latter two cases, the inverse relationships hold as long as expected return on farm assets is greater than the cost of borrowing.

When credit risks are introduced, the expression for the expected utility maximization becomes

$$E(U(\pi)) = E(r\bar{A} - i\bar{D}) - \tau(\sigma_r^2 A^2 + \sigma_i^2 D^2 - 2AD\sigma_{ri}). \tag{9}$$

Again, substituting $D + E = A$ and considering the level of credit as the decision variable, the first-order condition for an expected utility-maximizing level D^* is

$$dU(\pi)/dD = r - i - 2\tau\sigma_r^2 D - 2\tau\sigma_r^2 E - 2\tau\sigma_i^2 D + 4\tau D\sigma_{ri} + 2\tau E\sigma_{ri} = 0, \tag{10}$$

which gives optimal debt D^{**} of

$$D^{**} = \frac{\left(\bar{r} - \bar{i} - 2\tau E\left(\sigma_r^2 - \sigma_{ri}\right)\right)}{2\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)} \tag{11}$$

Comparison of expressions for optimal debt in equations (7) and (11) indicates that the addition of risk measures for credit will mostly warrant lower use of debt, although the result depends strongly on the level of covariance σ_{ri}. If, for example, the covariance is zero, then the optimal debt is clearly less in expression (11). However, if covariance is strongly positive, then optimal debt could be higher in expression (11). This is shown by setting equations (7) and (11) equal to each other and solving for σ_{ri}. The result is

$$\sigma_{ri} = \frac{\sigma_i^2\left(2\tau\sigma_r^2 E - r + i\right)}{2\left(\tau\sigma_r^2 E - \bar{r} + \bar{i}\right)} \tag{12}$$

As long as the actual σ_{ri} is less than σ_r^2, optimal debt in equation (11) will be less than optimal debt in equation (7). Comparative statistic properties for equation (11) are:-

$$dD^*/d\bar{r} = \frac{1}{2\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)} > 0, \tag{13a}$$

$$dD^*/di = \frac{-1}{2\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)} < 0, \tag{13b}$$

$$dD^*/d\tau = \frac{\left(-\bar{r} + \bar{i}\right)}{2\tau^2\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)} < 0, \tag{13c}$$

$$dD^*/d\sigma_r^2 = \frac{-\bar{r} + \bar{i} - 2\tau E\left(\sigma_i^2 - 2\sigma_{ri}\right)}{2\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)^2}, \tag{13d}$$

$$dD^*/dE = \frac{-\left(\sigma_r^2 - \sigma_{ri}\right)}{\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)}, \tag{13e}$$

$$dD^*/d\sigma_i^2 = \frac{-\bar{r} + \bar{i} + 2\tau E\left(\sigma_i^2 - 2\sigma_{ri}\right)}{2\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)^2}, \tag{13f}$$

$$dD^*/d\sigma_{ri} = \frac{\bar{r} + \bar{i} + \tau E\left(\sigma_i^2 - \sigma_r^2\right)}{\tau\left(\sigma_r^2 + \sigma_i^2 - 2\sigma_{ri}\right)^2}, \tag{13g}$$

These results are more ambiguous than in expression (8a) through (8e). In all cases, the denominator values are nonnegative. However, only (13a) and (13b) have definitive numerator value. Debt use is positively related to changes in farm asset returns and inversely related to borrowing costs. The relationship between debt and risk aversion is also inverse if expected farm asset returns exceed borrowing costs. Debt responses to changes in other parameters cannot be fully evaluated without knowing their values.

It is important to recall that although the results obtained in the comparative statistic analysis appear consistent with intuitive judgement about financial structure and credit use, they depend on the assumption of expected utility maximization, normality about r and i, and the choice of utility function. However, these assumptions will be kept throughout the analysis. These are maximization of expected utility with an exponential utility function, a linear profit function, and normally distributed profits. This is equivalent to minimizing the exponent of the expected utility function, which is a quadratic expression (Freund 1956). The exponential utility function has the advantage over the quadratic utility function of not implying increasing absolute risk aversion (Buccolar and French 1978).

A better understanding of the effect of stochastic credit on expected utility maximizing level of debt is needed for effective liquidity management. The importance of credit is clear in the growth process, but the existence of stochastic environmental variables causes credit to be a random variable. Hence an additional element of risk enters the decision process that may further influence farmers' production, marketing and financial decisions.

However, the task of measuring credit risk is hampered by the lack of explicit risk pricing on loans by lenders to reflect their judgements about farmer's credit worthiness and availability of credit funds. Lenders' risk responses are reflected in non-price results that include differing loan limits among borrowers, and differences in security requirements, loan maturities, loan supervision and documentation, and other means of credit administration (Robison and Barry 1977).

In order to measure credit risk, estimates are needed on how the lender's non-price responses are related to farm income risks and

farm loan demands. Those estimators must then relate to the farmer's cost of borrowing. Some approaches that account for the liquidity premium on a credit reserve (Barry *et al.* 1981) show the relationship between the farmer's cost of borrowing and lender's non-price credit responses to risk. The liquidity premium on maintaining the credit reserve signifies the liquidity risk component of the farmer's total portfolio risk and is determined by the level of risk aversion. Variations in lenders' non-price responses in the form of variations of credit limits, for example, are directly related to a farmer's cost of credit.

MATERIALS AND METHODS

Risk Programming Analysis

The effects of credit risk are evaluated with a multi-period quadratic-programming model, which derives risk-efficient growth plans for various levels of risk aversion. Risk-efficient plans are first derived without including credit risk. Then credit risks, based on the lender survey, are introduced to evaluate their effects on selected risk-efficient plans. The decision criterion reflects the farmer's preferences as a negative exponential function with normal probability distributions and a linear profit function.

The model used here is a general decision model based on the Markowitz E-V or mean-variance efficiency criterion. It is a modified version of the model employed earlier by Baker *et al.* (1983). Crop diversification is added to the original version. It is a multiperiod (four-year), quadratic (QP) model of portfolio selection. The optimization procedure uses the algorithm "GINO (General Interative Optimizer)" software, developed by Liebman *et al.* (1986).

The conventional notation for the QP model can be writtten as follows:

$$Max: r' x - 1/2\ \tau\ X'\ Q\ X \qquad (14)$$

subject to

$$A\ X \leq b \qquad (15)$$

$$X,\ \tau \leq 0 \qquad (16)$$

where $X' = (X_1,.....,X_n)$; $b' = (b_1,.....,b_n)$;
$r' = (r_1,.....,r_n)$;

$$\begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{m1} & \cdots & a_{mn} \end{bmatrix} \text{ and } Q = \begin{bmatrix} \sigma_{11} & \cdots & \sigma_{1n} \\ \vdots & \ddots & \vdots \\ \sigma_{n1} & \cdots & \sigma_{nn} \end{bmatrix}$$

where r is a n x 1 vector of net income assigned to the n x 1 vector of activities X, to evaluate final net wealth, which is presented by the linear portion of the objective function. Q, variance-covariance matrix, provides an estimate of the potential variation of outcomes around the expected value of the portfolio. The matrix A is an (m x n) matrix of technical coefficients equivalent to the input of a linear programming model. There are m linear constraints (AX) which may be equalities or inequalities, and which are restricted by m right-hand side vector b.

The linear portion of the objective function measures the farm's terminal net worth plus the sum of annual consumption expenditures. The objective function entries are equally weighted and expressed in end of horizon baths. The opportunity cost of money is modelled as a non-farm investment having a risk-free annual yield. This formulation is a future value model with the opportunity rate of reinvestment on earnings represented by the yield on the non-farm investment.

The quadratic entries in the objective function are the annual variance of gross margin on the production activities and, the variance and covariance of operating and capital credit when credit risk is included. The expected gross margins and variance-covariance matrix were estimated from time-series data of yields, prices and production costs.

Table 1 summarizes the relationships among borrowing activities, credit constraints, risk measures, and other model components. The measures of credit availability and risk came from Thani's (1988) results. They are briefly reviewed here. The historical data series of farmer's income and supply of credit were elicited from individual borrower record keeping and approved loan request forms. Farmers were classified into the following six groups: severe loss, moderate loss, average conditions, moderate gain, and favourable gain, based on their farm income experienced by the farmer in the preceding year. The percentage of loan requests actually granted was then correlated with the corresponding levels of farm income. Results indicated that the supply of available credit is

TABLE 1
Summary of production and financial components for year one of the programming model

Constraint	Produce and sell	Borrow operating	Borrow capital	Lease land	Purchase machines	Hired labour	Non-farm investment	Consume and tax	Transfer cash		Relation-ship	Level
									1	2		
Objective			$-C_n$		C_n			C_n			=	Max
Beginning cash	A	-1	A_{dp}				1	A_c	1		<=	B
Ending cash	-A	$1+i_0$	A_{ic}	A			-(1+I)	A_{ct}	-1	1	=	0
Finance requirement			A		-A						=	0
Operating credit	-A	A									<=	B
Capital credit		A		-A							<=	B
Land	1			-1							<=	B
Lease limit				1							<=	B
Family labour	A					-1					<=	B
Hired labour						1					<=	B
Machinery	A			A	-1						<=	B
Accounting equality	-A	I_0	i_c	A	A_{dep}		-i	1			=	0
Variance-covariance												
Produce and sell	r^2_r											
Operating credit	r_{rio}	r^2_{rio}										
Capital credit	r_{ric}	r^2_{ric}										

positively correlated with changes in farm income. The correlation was stronger for capital credit than operating credit. A positive correlation between supply of credit and farm income implies negative correlation between borrowing cost and farm income. This adds to the model farm's total risk.

Data, Farm Resources and Constraint

The model and data needs are based on a farm representative in the Chiang Mai Valley (Thani 1988). The data used in this study were obtained from both primary and secondary sources. The historical data series of farmers' income and supply of credit were elicited from lender's record keeping.

The design of the model is similar to other risk analysis models (Barry and Willmann 1976), except that it is modified to include credit risk. Financial components are emphasised, with production and post-harvest sales combined into a single annual activity over the model's horizon. Product diversification and marketing responses to risk are also considered.

The beginning farm has 10 rais (1 rai = 0.16 hectare) of cropland. A land leasing activity allows expansion beyond 10rai. The model summary in Table 1 shows that leasing land requires additional machinery purchase with cash or credit financing. Borrowing activities for machinery have four and five year maturities. Short-term borrowing to supplement the annual cash flow is for one year. Average propensities to consume, tax, and save from net income are 0.50, 0.25, and 0.25, respectively. Each year has two cash sub-periods. Maximums are set for leasing in any year, credit for operating and capital loans, and machinery capacity. Accounting equalities assure that depreciation charges, cash transfers between periods, and tax and consumption requirement are met.

The model used in this study requires estimates of the variances and covariance's of gross margins of production activities and borrowing cost of credit activities. This part is the quadratic portion of the objective function of the model.

The measures of covariance of production activities and borrowing cost are derived from from the method of Baker *et al.* (1983). They hypothesised that farmers' credit is positively correlated with farm income. The use of average loan granted as percentages of original loan requested is preferred over the use of absolute value of loan granted. According to Thani(1993), analysis of variance (ANOVA) is conducted to find out how the amounts of credit granted by a particular lender vary with changes in farm income. The variation in credit responses attributable to the block variable "lenders" is subtracted from the total sum of squares. The proportion of the remaining total variance that is due to income treatments is then the partial coefficient of determination, and the square root of that coefficient is a proxy for the partial correlation of credit on past income. We are unable to reject the hypothesis tested at the five percent level. The results of the ANOVA test imply that credit availability is a source of risk in farm plans, and that it is related to past farm income. In other words, credit risk contributes to the total portfolio risk in a significant manner. Table 2 shows the variance-covariance matrix of gross returns for crop activities, while Table 3 shows the covariance of gross margins of production activities.

TABLE 2
Variance-govariance matrix of gross returns for crop activities

	Rice (X1)	Soybean (X2)	Mung Bean (X3)	Peanut (X4)	Garlic (X5)	Second Rice (X6)
Rice (X1)	8.638E04*	7.84E04	1.509E04	5.49E04	4.68E05	7.82E04
Soybean (X2)		1.30E03	1.85E04	3.34E04	1.41E05	5.16E04
Mungbean (X3)			5.200E03	1.23E04	6.205E04	4.70E04
Peanut (X4)				5.70E04	2.67E05	4.70E04
Garlic (X5)					5.73E06	6.32E05
Second Rice (X6)						1.81E05

*E04 – Indicates 4 decimal points to the right similarly, E03,E05 and E06 are 3,5 and 6 decimal points to the right respectively.

TABLE 3
Covariance of gross margins of production activities and borrowing cost of credit activities

	Year 1			Year 2			Year3			Year4		
	STB	IB4	IB5	STB	IB4	IB5	STB	IB4	IB5	STB	IB4	IB5
X1	2.44	6.37	6.37	2.56	6.69	6.69	2.68	7.01	7.01	2.81	7.33	7.33
X2	0.94	2.47	2.47	0.99	2.59	2.59	1.04	2.71	2.71	1.08	2.84	2.84
X3	.059	1.56	1.56	0.62	1.64	1.64	0.65	1.71	1.71	0.68	1.79	1.79
X4	1.98	5.17	5.17	2.08	5.43	5.43	2.18	5.69	5.69	2.28	5.95	5.95
X5	9.91	51.92	51.92	20.9	54.51	54.51	21.89	57.1	57.1	22.89	59.7	59.7
X6	2.85	7.45	7.45	3	7.82	7.82	3.14	8.19	8.19	3.28	8.56	8.56
STB	0.12			0.12			0.12			0.12		
IB4		.363			.363			.363			.363	
IB5			.363			.363			.363			.363

STB = short term borrowing activity
IB4 = Intermediate term borrowing, at 4th year
IB5 = Intermediate term borrowing, at 5th year

RESULTS AND DISCUSSION

Portfolio theory leads us to anticipate that the model farm's risk-efficient set, derived without credit risk, should have a concentrated mix of activities at the peak of the frontier. This results in maximum resource utilization and farm growth. The risk will also be the highest among the risk- efficient solutions. Movements to lower risk on the efficient set should show slower growth, less use of production capacity, greater diversification, lower leverage, larger credit reserves, and more use of other risk responses.

The risk-programming results obtained are consistent with those anticipated responses. A thirteen risk-aversion level for risk-efficient set was derived with and without credit risks. Model results with and without credit risk are contrasted. Including credit, risk takes fuller account of the overall risk position of farmers. As risk aversion increases, the principal responses involve greater liquid reserves and slower growth. Credit reserves generally increase as a percentage of total credit for both capital and operating loans. No capital loans occur at the highest risk-aversion level, leaving intact the entire reserve of capital credit. Land leasing declines with increasing risk aversion until no more acerage is leased and part of the original land is idled. Taxable income, objective function values, and standard deviations also increase as risk aversion increases.

A set of 13 efficient portfolios in the intermediate portion of the E-V frontier was generated from the QP model for the case of with credit risk. These portfolios are expected utility maximizing solutions for risk aversion coefficient within the range of $0.20 > \tau > 0.0001$. When the risk coefficient is higher than 0.20, the initial point of the E-V frontier maximizes utility. When τ is equal or lower then 0.0001, the linear programming solution is the expected utility maximizing solution (see Table 4).

The results show that for risk coefficients in the range $0.20 > \tau > 0.0001$, including credit risk to the analysis is likely to imply a more conservative strategy in order to maximize expected utility than the one adopted when credit risk is ignored.

Including credit risk in the multi-period QP model produces a shift of the E-V frontier and possible changes in the composition of the risk efficient portfolios. *Fig. 1* shows the E-V frontiers corresponding to each one of the two cases. That shift may imply changes in the optimal plans for risk adverse decision-makers.

Similarly, a set of 13 efficient portfolios in the intermediate portion of the E-V frontier that was provided by the model contain optimal solution for values of risk aversion coefficient that range from $0.4 > \tau > 0.001$ generated from the QP model for the case of without credit risk. Values of risk aversion above 0.40 imply that a decision maker would maximize expected utility at the lowest feasible point of the E-V frontier (the one with lowest E and lowest V). Values of the risk aversion coefficients under 0.001 imply that wealth maximizing (or linear programming) solution maxamizes expected utility. This solution is also the optimal one for a risk neutral investor.

TABLE 4
Composition of the objective function for expected utility maximizing plans on the E-V frontier under selected risk aversion coefficients

Risk Aversion	Without Credit Risk		With Credit Risk	
	Standard Deviation	Final Wealth	Standard Deviation	Final Wealth
0.0001	79769	118869*	98637	118869*
0.0005	79769	118869*	87428	114754
0.001	79769	118869*	71505	110453
0.01	68986	114927	63829	104219
0.015	57625	113763	55473	100467
0.02	48297	112764	45513	98497
0.04	42128	104367	39614	90246
0.045	30472	92328	31573	81235
0.05	26136	83748	26695	77245
0.10	20581	64436	19927	61886
0.15	15883	52789	16134	51221
0.2	10155	34426	10022	33226**
0.4	9668	33226**	11235	33226**

*LP solution
** Initial Solution

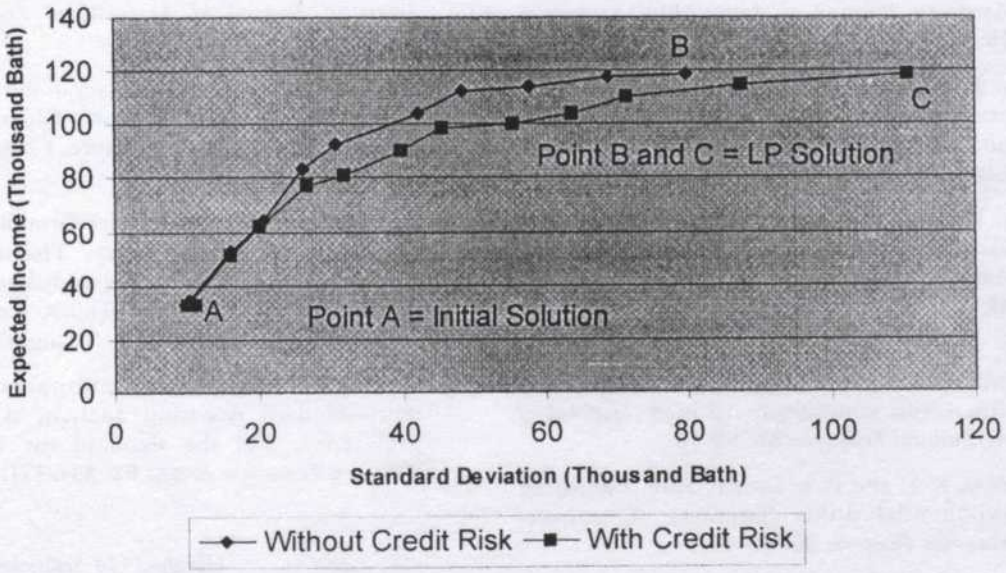

Fig. 1: Efficient mean variance frontier for a farmer operator without and with credit risk

CONCLUSION

When credit risks are included in the model and the solution compared at the same levels of risk aversion, the growth measures and performance decline and credit reserves increase. Solution with high-risk aversion shows little growth in farms size and partial idling of production capacity. Moreover, the effects of greater reliability for capital credit relative to operating credit are evident as risk aversion increases; the solutions show a stronger tendency to conserve riskier capital credit by restricting investment and firm growth, at least until capital loans no longer occur. Then, further building of credit resolve requires fewer operating loans, which can cause idle production capacity.

The stronger portfolio responses by farmers with increasing absolute risk aversion are

illustrated by comparing solutions obtained without credit risks to solutions with credit risks for higher risk aversion coefficients.

To conclude, when credit risk is included in the analysis: (i) the average level of the credit reserve increases faster, and the use of capital credit and expansion and expansion of farm growth are more rapidly eliminated from optimal plans as the risk aversion coefficient increases, and (ii) for a given level of risk aversion, the average level of the credit reserves for both credit lines are generally much higher. Hence, these results are consistent with the hypothesis that more credit risk brings slower growth, greater credit reserves, and some idling of resources. These results support that credit risk should be taken into account in farm management decisions.

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The title of the paper, name of author and full address of the institution where the work was carried out should appear on this page. A short title not exceeding 60 characters should be provided for the running headlines.

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Tables should be typed on separate pages and numbered using Arabic numerals. Each table should be referred to in the text, has a brief title and include explanatory notes, if necessary, below it. Vertical rules should not be used. Footnotes in tables should be designated by symbols or superscript small italic letters. Tables should conform to page size.

Equations
These must be clearly typed, triple-spaced. They should be identified by numbers in square brackets placed flush with the right margin.

Illustrations & Photographs
Illustrations including diagrams and graphs are to be referred to in the text as 'figures' and photographs as 'plates' and numbered consecutively in Arabic numerals. All photographs (glossy black and white prints) should be supplied with appropriate scales.

Illustrations should be of print quality; output from dotmatrix printers is not acceptable, Illustrations should be on separate sheets, about twice the size in print. All letters, numbers and legends must be included on the illustration with the author's name, short title of the paper, and figure number written on the verso. A list of captions should be provided on a separate sheet.

Spelling & Measurements
The Oxford English Dictionary should be consulted for spelling. Metric units must be used for empirical measurements.

Citations and References
Citations to the literature in the text should to be indicated by the author's name and year of publication in parentheses, e.g. (Barnett and Lewis 1982). If an author is quoted in the text, the year of publication should immediately follow in parentheses. e.g. Barnett and Lewis (1982) state that "....." Citation of a particular page follows the date and is preceded by a comma, e.g. Humphrey 1990, p. 26-27.

For works with multiple authors, the first author's surname is used followed by *et al.* The full form of citation is used for two authors.

If two or more works by the same author are cited together, the author's name is followed by the various years of publication arranged in chronological order e.g. (Sulaiman 1979, 1980, 1981). In case of citing an author with several works published in the same year, the works should be distinguished by the addition of a small letter e.g. Choa (1979a); Choa (1979b).

When several authors are cited, they are to be arranged in chronological order and separated by semicolons, e.g. Zaharah 1960; Yong 1980; Lewis 1990.

Serials are to be abbreviated as in the *World List of Scientific Periodicals.* The abbreviation for Pertanika Journal of Social Science and Humanities is *Pertanika J. Soc. Sci. Hum.*

The following reference style is to be observed:

Book
Shamsher Mohamed, Shamsuddin Ismail & Annuar Mohd. Nassir. 1989. *Asas Belanjawan Modal.* 197p. Serdang: Universiti Pertanian Malaysia Press.

Chapter in Edited Book
Zahid Emby. 1990. The Orang Asli Regrouping Scheme-converting swiddeners to commerical farmers. In *Margins and Minorities - The Peripheral Areas and Peoples of Malaysia*, ed. V. T King & M.J.G. Parnwell, p. 94-109. Hull: Hull University Press.

Unpublished Materials (e.g. theses, reports, documents)
Shahwahid, H.O. 1989. Price competitiveness and demand behaviour of Malaysia Meranti lumber and hardwood plywood in the United States' import market. Ph.D. Dissertation, State University of New York. Syracuse.

Ministry of National Unity. 1973. A socio-economic survey on the new villages in Perak and Melaka. 67p. Malaysia.

Serials
Noran Fauziah Yaakub. 1990. A multivariate analysis of attitude towards teaching. *Pertanika* **13(2)**: 267-273.

Conference Proceedings
Amir Awang. 1992. Counselling, human resorces development and counseling services. In *Proceeding of Asia Pacific Conference on Human Resource Development*, ed. Sulaiman M. Yassin, Yahya Mat Hassan Kamariah Abu Bakar, Esah Munji anda Sabariah Mohd Rashid, p. 243-246. Serdang: Universiti Pertanian Malaysia.

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