MIGRATION INTENTIONS OF CIRCULAR MIGRANTS FROM JAVA TO SOUTH KUTA DISTRICT-BALI¹

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ABSTRACT – This study aims to reveal the characteristics of circular migrants from Java with focus on migration intentions in the future, predicted by variables such as wage, age, length of stay, and level of education. The analysis was done by using binary logistic regression models. The results showed that wage, age, length of stay, and level of education together have a significant effect on the migration intentions of circular migrants from Java. Variables such as wage and education level have a positive effect, while age and length of stay in the destination have a negative effect.

Keywords: migration intentions, circular migrants, Java, Bali, Indonesia

INTRODUCTION

Enactment of Bali as the centre of tourism development in Indonesia had an impact on rapid economic growth. Along with it, Bali became increasingly preoccupied with population problems especially those stemming from high population growth as a contribution of positive net migration. Population growth in Bali reached 2.15%, far exceeding the national average of only 1.49%. In fact, the population growth in Badung Regency reached 4.63% and, if broken per district, the highest population growth occurred in South Kuta District (9.11%) (BPS, 2010).

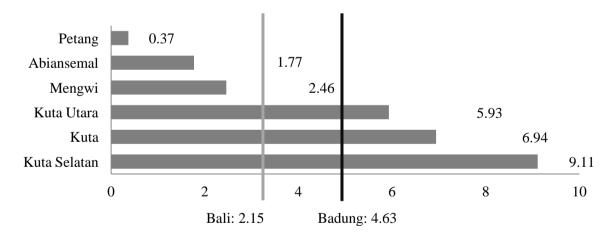


Figure 1. Population Growth Rate (%) in Badung Regency between 2000 and 2010 Source: Population Census, BPS 2010

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Population growth in South Kuta far exceeds the minimum limit (> 2.5% per year), which reflects that the population movement (in-migration) is to contribute to the population growth rate (Romdiati, 2007). And this is because in recent years the in-migration trend has been higher than out migration as seen in Table 1.

Table 1. Total population, in-migration and out-migration in South Kuta District (2007-2011)

No.	Year	Total	In-migration	Out-migration	Net-
		population			migration
1	2007	67,399	1,847	521	1,326
2	2008	69,473	2,624	779	1,845
3	2009	70,967	2,066	320	1,746
4	2010	71,716	1,049	690	359
5	2011	73,134	1,202	631	571

Source: BPS, 2012

Population problem, especially in South Kuta area, is now felt increasingly prominent. Like the saying goes "where there is a sugar, there must be an ant", sparkling of tourism not only attracts tourists to visit, but also stimulates the presence of migrants to earn a livelihood in this area. As result, the condition of the population in South Kuta, increasingly heterogeneous and in its progress, led to various social, economic, and environmental problems. Thus, to know the characteristics of migrants is one of the most pressing needs.

For migrants, the movement carried out is based on various motivations. Some move to the destination area as a first step; others move to the destination as the final stage after having moved several times to other areas, and there is a temporary movement. An effective way to understand the variation of the movement is to study the "migration intentions" of the migrants. The migration intentions of each individual are influenced by many variables, whether internal or external (Oberoi and Bilsborrow, 1984; Keban, 1994; Purnomo, 2004). In this case, internal variables will be studied further, namely wages received, age, length of residence in the destination and migrants' education level to see their effect on migration intentions in the future that have so far not been revealed.

This study is focused only on circular migration (seen from the reality of mobility in the last year), carried out by groups of migrants who come from the west of Indonesia, especially the circular migrants from Java. The chosen circular (non-permanent) migration, as the focus of research, considering this kind of mobility, is the most common. It implies higher engagement with the population of origin. With the increase in transportation and information means, circular migration can reach farther in a shorter time (Kasto, 2002). On the other hand, the determination of migrant's origin is based on several reasons: (a) circular migrants from Java are believed to be the most spread and most numerous among migrants in South Kuta, (b) because the process of Javanese migration to the island of Bali has a long history and the process is increasing as the relative distance between Java and Bali becomes smaller and is covered by quick and easy transport links.

LITERATURE REVIEW

Some previous research was conducted on the factors that influence circular migration intentions such as wages, age, length of stay, and migrant education. The influence of these factors will be presented briefly in the following.

a. Wages Effect on Circular Migration Intentions

According to the Todaro theory (1998), people usually decide to move if the net income in the destination city is higher than in the place of origin. If it turns out that if the actual income level in the destination city is equal to the actual income level in the place of origin, this will stop the flow of mobility. The higher the wages received, the greater the tendency to generate circular migration because higher wages can cover the cost of mobility for hometown return.

b. Age Effect on Circular Migration Intentions

Zhao (1999) put forward his theory that the older the age, the less likely to migrate because the psychological cost to make adjustments in order to face the new work environment and place is greater. This theory is supported by the findings of Noekman and Erwidodo (1992) which showed similar results.

c. Length of Stay Effect on Migration Intentions

Mantra (1985) asserts that after residing a while in the destination area, people tend to choose a place close to the area where they worked. Circular migrants that have long worked in the destination area generally begin to establish new kinship with the local community/environment and intend to settle permanently. In other words, it results that a long residence in the destination area has a negative effect on circular migration intentions.

d. Education level Effect on Migration Intentions

The findings of Speare and Harris (1986) showed that the level of participation to circular migration increases with the increase in education level. Higher education will affect the mindset of individuals to earn a better income and, therefore, to practice circular migration.

Based on previous findings, the study is focused on the same purpose, but with different subjects and different research area, namely the migrants from Java to South Kuta District-Bali. The purpose of this study was to determine how strong the influence of wages, age, length of stay at the destination, and education level of the circular migrants from Java to South Kuta is on their intention to continue practicing circular migration.

RESEARCH METHOD

The main method used in this study is the survey. Determination of sample includes: (1) sampling area determined by multistage area sampling technique based on some specific considerations, carried out gradually from the widest coverage of the region to a narrower region as a location for research; (2) subject sampling of circular migrants from Java determined by quota sampling amounted to 100 people. Quota sampling basis for the existence of circular migrants from Java is not available at the district and village office because their arrival is rarely reported. However, sampling a total of 100 people, considered realistic, supported in addition by the above-mentioned general data on the number of in-migrants and by initial observations reveal that migrants from Java are almost in every region in South Kuta, both working in the tourism sector and in the informal sector, such as traders, construction workers, and so on. But when it comes the fasting season of Eid, South Kuta becomes deserted.

The analysis technique used is binary logistic regression model, with the following steps:

- See whether the correlation between the variable "x" (wages, age, length of stay at the destination, and level of education) is free from multicollinearity problem.
- See whether the value of percentage of correct prediction on 2x2 classification table is free from homoscedasticity assumptions..
- Test the feasibility of the regression model by using the hypothesis:

Ho: there is no significant difference between the predicted and the observed classification;

 H_1 : there is a significant difference between the predicted and the observed classification.

Decision: If the probability > 0.05, Ho is acceptable and the binary regression model is fit for use. If the probability < 0.05, Ho is rejected and the binary regression model is not fit for use.

• Looking at the overall feasibility of this mode by comparing the log likelihood at the start and the log likelihood second rate. If there is a decrease, then the regression model is better.

• Test the regression coefficients, by using the hypothesis:

Ho: regression coefficient is inefficient

H₁: regression coefficient is efficient

Decision: Ho is accepted if the significance > 0.05, which means that the independent variable has no effect on the dependent variable. Ho is rejected if the significance < 0.05, which means that the independent variable has effect on the dependent variable.

- See the variability of the dependent variable that can be explained by the independent variables based on the value of Nagelkerke R Square. Nagelkerke R Square value can be interpreted as the value of R² in multiple regression.
- Modelling the variables X_1 , X_2 , X_3 , X_4 on Y by using the binary logistic regression method.
- Interpretation of the model to explain the factors that affect migration intentions.

RESULTS AND DISCUSSION

Migration Intentions of Circular Migrants from Java

Factors thought to be able to influence the migration intention of circular migrants from Java to the South Kuta District-Bali were tested by using the statistical logistic regression models. The binary logistic regression technique was used with the two categories (binomial) on the dependent variable (1 = continue to perform circular migration; 0 = will not perform circular migration or in the end they will settle down in the South Kuta District). This model seeks to explain the factors that affect the circular migrants' decision to migrate. SPSS program version 16.0 was used in data processing.

There were 100 respondents selected to represent the behaviour of circular migrants in the investigated area. Those selected were respondents from Java who migrated to South Kuta District-Bali, they have lived in South Kuta for at least one year and in the meantime have returned to their home areas in Java. The steps used in the analysis of binary logistic regression model are as following.

1. Multicollinearity test

A regression model is free of multicollinearity if the correlation coefficient between the independent variables is under 0.8 (Ghozali, 2006). Table 2 shows the correlations between the independent variables.

Constant Wage Length of Education Age level stay -.205 Step 1 Constant 1.000 -.625 -.202 -.489 Wage -.205 1.000 -.170 -.520 .225 -.625 -.170 1.000 .029 -.254 Age Length of stay -.202 -.520 .029 1.000 .071 Education level -.489 .225 -.254 .071 1.000

Table 2. Correlation Matrix

Sources: Primary data processing with SPSS V.16.0

According to the estimates shown in the table above, all numbers of correlation between the independent variables are below 0.8, which means free from multicollinearity.

2. Homoscedasticity Test

In a model, the presence or absence of homoscedasticity can be seen from the classification table, which tries to eliminate the predictive value of right and wrong. In case of a perfect model, there will be a diagonal with 100% prediction accuracy rate. Table 3 shows that the percentage was not the same for both lines, so it indicates that the binary logistic regression model is free of homoscedasticity.

Of the 100 respondents (circular migrants from Java) there were 31 people who did not intend to perform circular migration and other 69 wanted to keep doing circular migration. The classification

table shows that the dependent variable "migration intention" = 0 (Not intending to perform circular migration) was correctly predicted (Percentage Correct), 96.8% of the 31 people who did not intend to perform circular migration, as many as 30 persons were correctly predicted and 1 person was incorrectly predicted.

Table 3. Classification Table^a

	Ob	served			
			Circular Migra	Percentage	
			Do not intend to perform circular migration	Fixed intention to circular migration	Correct
Step 1	Circular Migration Intentions	Do not intend to perform circular migration	30	1	96.8
		Fixed intention to circular migration	2	67	97.1
	Overall Perce	ntage			97.0

The cut value is .500

Sources: Primary data processing with SPSS V.16.0

While for the dependent variable "migration intention" = 1 (Intend to continue performing circular migration), the correct prediction reaches 97.1%, that is of the 69 migrant observations, as many as 67 persons were correctly predicted and 2 persons were wrongly predicted. Overall, the correct prediction is of 97%. This fact is reinforced by the data in the field, obtained while doing the surveys that most of the migrants expressed a desire to not settle in the migration destination area.

3. Feasibility Test

Testing the feasibility of the regression model is based on the hypothesis and the decision criteria that have been outlined in the research methods. The appropriateness of the regression model can be seen in Table 4.

Table 4. Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.	
1	3.222	8	.920	

Sources: Primary data processing with SPSS V.16.0

Because the probability figure in column Sig. is 0.920 > 0.05, then Ho is accepted. These results indicate a binary regression model feasible to use for further analysis because there is no difference between the predicted classifications and those observed.

4. Overall Model Fit

Feasibility and non-feasibility of the overall model can be seen by comparing figures on Log likelihood at the beginning (block number: 0) and Log likelihood second figures (block number: 1). If there is a decrease, the model is a better fit. The advantage of using maximum likelihood in logistic regression is the ability to calculate large samples. Maximum likelihood values are consistent and unbiased, and the variance is minimal for large samples.

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Table 5. *Iteration History*^{a,b,c} (*Block 0*)

	Iteration	-2 Log likelihood	Coefficients Constant
Step 0	1	123.855	.076
	2	123.820	.800
	3	123.820	.800

Sources: Primary data processing with SPSS V.16.0

Table 6. *Iteration History*^{a,b,c,d} (*Block 1: Method Enter*)

Iteration		-2 Log	Coefficients				
		likelihood	Constant	Wage	Age	Long of	Education
						Stay	Level
Step 1	1	46.193	636	.256	033	073	.159
	2	30.356	716	.409	058	116	.248
	3	25.194	580	.553	084	154	.320
	4	23.804	394	.676	105	186	.371
	5	23.611	294	.744	116	204	.397
	6	23.605	276	.759	118	207	.402
	7	23.605	275	.760	118	208	.403

Sources: Primary data processing with SPSS V.16.0

Because at the beginning (block number 0) -2LogL is 123.820 and then (block number 1) it decreased to 23.605, it could mean that the regression model is better.

5. Regression Coefficient Test

To test whether the regression coefficients are feasible or not, we used the calculation of probabilities in sig. columns in Table 7.

Table 7. Variables in the Equation

		В	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Wage	.760	.254	8.954	1	.003	2.138
	Age	118	.058	4.177	1	.041	.889
	Length of stay	208	.084	6.067	1	.014	.813
	Education level	.403	.158	6.455	1	.011	1.496
	Constant	275	2.625	.011	1	.917	.759

Sources: Primary data processing with SPSS V.16.0

Probabilities in sig. column in table 7 are above all < 0.05. Therefore, the regression coefficients are efficient, feasible to use in predicting the migration intentions of circular migrants from Java to the South Kuta District. The most influential variables on migration intentions can be seen by analysing the figures contained in the Exp (B) column. Of the Exp (B) figures, we know that wage contributes most in determining the decision for circular migration (2.138), followed by variables such as the education level (1.496), age (0.889), and the length of stay (0.813).

Furthermore, in order to see how the variability of the dependent variable can be explained by the independent variables, we must analyse the value of Cox & Snell R Square and of Nagelkerke R Square, values listed in Table 8.

Table 8. *Model Summary*

Step -2 Log likelihood		Cox & Snell R Square	Nagelkerke R Square	
1	23.605 ^a	.633	.891	

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001. Sources: Primary data processing with SPSS V.16.0

The table shows that the value of Cox & Snell R Square is 0.633 and the Nagelkerke R Square value is 0.891. This could mean that the variability of the dependent variable can be explained by the independent variables in a share of 89.1%. The rest means that the migration intentions of circular migrants are influenced by other variables not included in this study. From the results of the binary logistic regression models delivered with SPSS version 16.0 software, we obtained the following value:

Migrations Intentions =
$$-0.275 + 0.760$$
 Wage -0.118 Age -0.208 Long of Stay $+0.403$ Education Level $+e...$

Based on the statistics criteria met in the use of Binary Logistic Regression model, the migration intentions of circular migrants from Java to the South Kuta District-Bali can be interpreted.

Migration Intentions Affected by Wage Variable

Table 7 shows the coefficient = 0.760 (positive), means that wage variable gives a positive and significant effect on $\alpha = 0.05$ (p-value 0.003). Exp (B) = 2.138 can be explained by the fact that the respondents who intend to continue circular migration have their wage 2.138 times higher than those who do not intend to continue performing circular migration. The higher the wages earned, the higher the possibility that migrants will opt to perform circular migration. A higher wage can cover the cost of mobility (Java-Bali) and the cost of living in South Kuta area without reducing remittances to their families in Java. Periodically, they return to their hometown with sufficient earnings as a sign of their success in destination area. Conversely, when the circular migrants have low wages, they will be reluctant to return to their place of origin because they are constrained by the cost of travel and remittances, as a sign of success, cannot be fully obtained in the destination area. This research reveals that wage gives the largest contribution compared to other independent variables in influencing the migration intentions of circular migrant from Java to South Kuta District because most of the respondents worked as private employees (hotels), businessman/self-employed and also merchants (PKL). They turned out to provide relatively high income or net wages per month, already more than enough to make ends meet in the destination area, cover the cost of mobility to the area of origin, and be put aside as a remittance to their family in Java.

Migration Intentions Affected by Age Variable

Age variable showed the coefficient rate = -0.118 (negative), p-value 0.041 < 0.05, which means that it has a negative and significant effect on circular migration intentions. Exp (B) = 0.889 can be explained by the fact that the respondents who intend to continue performing circular migration are 0.889 times younger than those who do not intend to perform it anymore. The older the age of circular migrants, the lower the intention to perform circular migration in the future. Weakened physical condition does not allow them to continue performing circular migration. On the contrary, when in good physical condition, correlated with a relatively young age, the tendency is to keep on performing it.

Migration Intentions Affected by Length of Stay Variable

Length of stay in South Kuta District-Bali as a destination area gives a negative and significant effect on circular migration intentions (coefficient = -0.208 (negative), p-value = 0.014 < 0.05). The negative sign of the coefficient indicates that the longer the stay of respondents in South

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Kuta, the lower the probability for them to perform circular migration. In other words, they will ultimately choose to settle down. A migrant who has long resided in the destination area has generally been able to establish new kinship with the community and the environment at the destination so that he will eventually settle in this area. On the contrary, it would be difficult for those who have recently arrived in the destination area to adapt to the new environment; therefore, they usually want to continue performing circular migration. Exp (B) = 0.813 indicates that in the case of respondents who intend to continue circular migration, the length of stay in South Kuta is 0.813 times lower than of those who do not intend to migrate anymore.

One of the respondents (Mr. Wagiyo), who works as a private employee and has lived in South Kuta for 15 years, said that the reason for not performing circular migration and for choosing to settle in South Kuta is his harmonious relationship established with his neighbours, most of them Balinese These reasons indicate fairly closely interwoven social interactions between the migrants who have lived long enough in South Kuta and the natives. Frequently, migrants mingle with the natives and contribute with funds and physical exertion when Hindu religious ceremonies are performed.

Migration Intentions Affected by Education Level Variable

From the analysis of variables in Table 7 it results that the higher the education level of the respondents, the greater their intention to keep on migrating. P-value = 0.011 < 0.05 and coefficient = 0.403 (positive) showed that education level variable has positive and significant effects on circular migration. Exp (B) = 1.496 indicates that the respondents who intend to continue their circular migration have a level of education of 1.496 times higher than respondents who do not intend to circularly migrate. In case of a higher education level, there is a more advanced mindset to achieve any desired wishes. The decision to circularly migrate is related to the desire to increase the quality of life.

From this study it can be seen that wage, age, length of stay in the destination area, and education level variables have a significant effect on migration intentions. The results of this study reinforce the theories of migration popularized by mobility experts. As regards the wage variable, results are in compliance with Todaro's findings (1998), namely the higher the wages, the greater the intention to continue the circulation. As regards the age variable, the results are consistent with the findings of Zhao (1999) and Noekman and Erwidodo (1992), who state that between age and migration intentions (circular) there is a negative correlation. Furthermore, as far as the length of stay variable is concerned, the results of this study are consistent with the Mantra's findings (1985): the longer a person (migrant) has lived in the destination area, the smaller his intention to continue performing circular migration, so that he will eventually settle in the destination area (become permanent migrant). The last variable is the level of education, in which case the results of our research are very similar to the findings of Speare and Harris (1986) who found that the level of participation to circular migration increases with the increase in the migrants' education level.

There is a possibility for the occurrence of a disproof of the theories and the above-mentioned results in case of a similar research conducted elsewhere, in different geographic, economic, social, and cultural conditions.

CONCLUSION

Wage, age, length of stay, and level of education variables, together have a significant effect on migration intentions of circular migrants from Java. Variables such as wages and education level have a positive and significant effect, while age and length of stay have a negative and significant effect on migration intentions. According to the results of this study, wages is the most influential variable influencing the migrants' decision. These results reinforce the theories of migration popularized by mobility experts.

RECOMMENDATIONS

The rapid development, especially in the field of tourism, makes South Kuta District able to attract migrants. The characteristics of migrants, in particular of the circular migrants from Java, are known through this research: the migrants expected to settle in the South Kuta District are the oldaged and those who have long resided in South Kuta. On the other hand, they have on average lower incomes and limited education. Therefore, our recommendation to local authorities, including traditional institutions, is to continue conducting monitoring and mapping of migrant-prone areas, so that they can be detected clearly. Then, the quality of their training must be improved and there should be a development towards a better policy, synergized with the population. These circular migrants become potential permanent residents in South Kuta, which means they are also potentially under the responsibility of local government.

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