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Knowledge, Attitude, and Practice (KAP) In Indonesian Traveller Risk Groups: A Multicenter Study

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Abstract

Background: The risk of a traveller for contracting a travel-related disease is not only depending on one's destination of travel or planned activities, but also on the traveller's personal risk profile. The aim of this study is to determine the travellers' knowledge, attitudes and practices (KAP) on prevention of Travel-related diseases and to evaluate patterns of disease of travel-related disease in Indonesia. **Methods**: A cross-sectional, multicenter questionnaire-based study was conducted at 6 Indonesian International airports and other several cities all across Indonesia between January and April 2014. Questionnaires were randomly distributed at the departure gate of Indonesian airports while passengers were waiting to board. Data collected then statistically analyzed with univariate and bivariate analysis. **Results**: A total of 450 questionnaires were received, of which 423 fulfilled the entry criteria and were included in the final analysis. Main reasons for travels are tourism, business, study, religious reason, working abroad as labors. Most of respondents travel with no company, while others are in group, with friends, and others. Overall, 64.5% of respondents travelled to high risk destination and the rest are travelled to low risk destination. Overall knowledge, attitude, practice scores mean was 82.67, 80, and 72.25 out of 100, respectively. **Conclusion**: This research provides description about personal risk profile of Indonesian international travelers as a scientific basis to evaluate patterns of disease of travel-related disease in Indonesia. This report may be used to form recommendations for Indonesian travellers and health-care providers involved in travel medicine.

Introduction

Since the advent of modern commercial aviation in the 1950s, international civilian travel has increased steadily to record levels.[1] International travellers can experience travel-related morbidity during and after travel. Travel-related Disease can be obtained by many transmissions such as water, food, droplet, contact, and sex. Until 2014, Travel-related health problems are self-reported by 22%-64% of travellers to the developing world; most of these problems are mild, self-limited ilnesses such as diarrhea, respiratory infections, and skin disorders.[2] Of the approximately 50 million persons who travel from industrialized countries to developing countries each year, 8% report becoming ill enough to seek health care either during or after travel.[3] Prior to and during travel abroad, travellers often do not seek or follow appropriate travel health advice from travel health professionals.[4] As a result, many travellers undertake their journey unprepared and susceptible to potential infectious disease threats.[5] Forward planning and preventative measures before travelling can significantly reduce the risk of many vaccine preventable diseases such as measles and hepatitis A.[6] However, many travellers do not take advantage of available precautions which may be related to their knowledge, attitudes and practices towards travel-related diseases prevention.[7]

The risk of a traveller for contracting a travel-related disease is not only depending on the destination of travel and planned activities, but also on the traveller's personal risk profile. The main determinants of the traveller's personal risk profile are usually presented as the knowledge, attitude and practice (KAP) of a traveller towards prevention of travel-related disease.[4] Through this study, KAP description between traveller risk groups is expected to be the evaluation of patterns of disease in Indonesian travellers and their relative risk of Travel-related Diseases so government, health care providers, and other health care system can prioritize travel health care at risk group who has low KAP value/high relative risk of Travel-related Diseases and also we hope this might help prevent, treat and control disease among international travellers and help prevent the global spread of the pathogens. These study results also can be sources of information of Indonesian KAP or Asian KAP whereas Asian KAP data are still scarce especially in Indonesia.[4,5]

The aim of this study is to determine the travellers' knowledge, attitudes and practices (KAP) on prevention of Travel-related diseases and to evaluate patterns of disease of travel-related disease in Indonesia. In 2014, a cross-sectional, multicenter study using questionnaire was undertaken in 6 international airports all across in Indonesia and other several cities. In this contribution, we report the Indonesian KAP results as part of Asian KAP profile. Finally, we as the medical students can provide the first scientific basis of Indonesian traveller risk profile in travel-related disease to the government, policy makers and other health care providers where no other institutions had done this before. We believe that this could be the initiation of travel medicine

development in Asia especially in Indonesia.

Methods

Questionnaires and survey

The study was conducted at the departure lounges of six airports all across in Indonesia (Jakarta, Palembang, Yogyakarta, Makassar, Bandung, Surabaya) and other several cities. In brief, self-administered, anonymous questionnaires were randomly distributed at the departure gate of Indonesian airports while passengers were waiting to board. The questionnaire was developed through a literature review of previous survey-based research of international traveller behaviour and the adaption of questions from previously published research carried out by study authors.[8]

This study had been approved by the Ethical Committee of Medical Research in Indonesia. A pilot study was conducted on the first 30 travellers to assess accessibility, comprehension and relevance, validity and reliability with some necessary modifications identified. The survey was done in 4 months between January to April 2014. Travellers participated on a voluntary basis; no incentive was provided and participants were recruited from flights to international destinations. Trained interviewers were present to distribute the questionnaires, to answer questions if necessary and to check the completeness of the responses collected. Travellers were allowed to participate if they were 17 years of age or older and able to fully understand the language of the questionnaires. They also had to be Indonesian citizens; thus, travellers were asked to participate if they

were actually Indonesian citizens. These criteria were checked by the interviewers when distributing the forms. Afterwards, completed questionnaires from travellers who did not meet all the inclusion criteria were either excluded by the interviewers or rejected from the final analysis.We used standardized questionnaires which were developed using statistical validation. The questionnaires that were distributed among the participants contained several items about personal characteristics, on information regarding the travel and its preparation, traveller's knowledge, attitude and practices.

Definitions of risk groups

The risk groups were defined based on purpose of travelling. Tourism includes all travel for tourism or leisure, Business includes all travel for business or occupational purposes. Student includes all travel for study in a recognized educational institution or travel as part of a group trip under the sponsorship of a recognized educational institution, with the primary purpose of study or nonresearch educational activity. This category is not used for individuals travelling for other reasons who happen to be students. Medical tourism includes all travel when entry into a country other than the patient's country of residence was for the primary purpose of seeking either emergency or elective medical care for conditions that existed prior to travel. Visiting friends or relatives includes all travel for visiting friends or relatives (family, etc) in travellers destination country. Worship includes all travel for religioius worship purpose in travellers destination country. Volunteer includes all travel for volunteering purpose (health, disaster, others) in travellers

destination country. Research includes all travel for research purpose on travellers destination country. Immigration includes all travelers whose only relevant international travel is the primary immigration trip to the country of destination. Military includes all travel for formal military deployment by a member of the military under field conditions and using accommodations shared with other members of the military.

Determination of KAP profile on travel related diseases

Knowledge was determined by traveller's knowledge about definition and example about travel-related disease, vaccine function and comparison of the risk of travel-related disease, as perceived by the traveller with the actual answer of the questions. To that end, all destinations were rated as low or high-risk destination for travel disease based on maps and table published by the GeoSentinel Surveillance System. For each subject answer was expressed as 1 or 2, with 2 assigned to a subject if his/her answer compatible with the real answer of the question. The sum of the separate answer scores and transformed to a 0–100 scale with the maximal score set at 100.

To determine the attitude (intended risk taking or risk avoiding behaviour) of participants towards prevention of travel disease, travellers were asked several questions of their planned food habits and restrictions, travel planning that include source and timing of travel preparation and also source and timing of travel health advice, personal protective planning, and their perspective about travel related disease, vaccine use, and travel health

advice. Each answer that considered as risk-avoiding behavior was scored with 2 point whereas a risk-seeking was scored with 1 points. The final attitude score towards prevention of travel disease was obtained as the sum of the separate answer scores and transformed to a 0–100 scale with the maximal attitude set at 100.

To have an indication of their practice (protection rate) towards prevention of travel disease, travellers were asked about their vaccination status, malaria chemoprophylaxis, packed personal protective measures for this trip. Protection rate was expressed as a weighted sum of vaccination status, malaria chemoprophylaxis, and personal protective measures. The practice score summed and then transformed to a 0–100 scale with the maximal score set at 100.

Statistical analysis

All completed questionnaires were centralized per region, for data input and analysis by Research Paper Team of AMSA Indonesia. Basic descriptives and frequencies were used to describe the samples. Study subjects were grouped into several risk groups based on purpose of destination. We defined destinations of low- to-high risk of travel related diseases based on the latest Center of Disease Control (Geosentinel worldwide site) data and also geographic destinations were classified into regions according to the grouping of Center of Disease Control. The statistical analysis done with descriptive and bivariate analysis. We compared knowledge, attitude, and practice means of travel purposes in descriptive analysis. Statistical significance in bivariate analysis was assessed using Mann-Whitney Test for

knowledge and Unpaired T-Test for attitude and practice. We considered a p-value of <0.05 to be significant.

Results

A total of 450 questionnaires were received, of which 423 fulfilled the entry criteria and were included in the final analysis. The general characteristics of all respondents based on travel purpose, were shown in Table 1. The travel purpose risk groups included 165 tourism, 95 business, 37 worship, 2 volunteer, 3 research, 49 students, 14 medical tourism, 5 immigration, 16 visiting friends and relatives (VFRs) and 37 Indonesian labours. Overall, 273 (64,5%) of respondents travelled to high risk destination and 150 (35,5%) travelled to low risk destination. The top 3 professions of the respondents were others (31,7%), entrepreneur (18,2%), and private employee (17,7%). Up to 96,7% of them lived in Indonesia, and 3,3% of them lived abroad. Among them, 40,4% were travelling less than 7 days, 29,3% in 8-14 days, 7,1% in 15-28 days, and 23,2% more than 28 days. The travelled respondents were solo traveller (27,4%), in group (22,9%), with friends (17,3%), with spouse/child (17.0%), with other family (13,7%), and others (1,7%). Among them, 83,7% had travelled before and 16,3% had not.

The results obtained from the analysis showed that overall (n=423) knowledge mean was 82.67 out of 100, with a standard deviation of 13.08. Minimum and maximum values of knowledge respectively were 13 and 100, and the standard error of mean was 0.64. Among traveller risk groups, tourism's knowledge mean was 83.63 out of 100,

business risk group's mean was 83.04, worship risk group's mean was 78.27, volunteer risk group's mean was 81.50, research risk group's mean was 87.67, student risk group's mean was 89.80, medical tourism risk group's mean was 86.14, immigration risk group's mean was 82.80, VFRs risk group's mean was 84.69, and Indonesian labour risk group's mean was 69.86 (Table 2).

As for the attitude, the overall mean was 80.00 out of 100, with a standard deviation of 9.22. Minimum and maximum values of attitude respectively were 43 and 100, and the standard error of mean was 0.45. Among traveller risk groups, tourism's attitude mean was 79.17 out of 100, business risk group's mean was 77.92, worship risk group's mean was 84.38, volunteer risk group's mean was 77.00, research risk group's mean was 90.00, student risk group's mean was 84.20, medical tourism risk group's mean was 81.57, immigration risk group's mean was 75.20, VFRs risk group's mean was 79.06 and Indonesian labour risk group's mean was 78.86 (Table 3).

As for the practice, the overall mean was 72.26 out of 100, with a standard deviation of 8.91. Minimum and maximum values of practice respectively were 50 and 94, and the standard error of mean was 0.43. Among traveller risk groups, tourism's practice mean was 72.67 out of 100, business risk group's mean was 71.27, worship risk group's mean was 74.76, volunteer risk group's mean was 75.00, research risk group's mean was 83.33, student risk group's mean was 75.98, medical tourism risk group's mean was 68.79, immigration risk group's mean was 68.80, VFRs risk group's mean was 70.44,

and Indonesia labour risk group's mean was 67.08 (Table 4).

For bivariate analysis (Table 5), we found that in worship, student, and Indonesian labours risk group, there was a significant relationship between the travel purpose and knowledge ($p<0,05$). In business, worship, and student risk group, there was a significant relationship between the travel purpose with attitude ($p<0,05$). Whereas in research, student, and Indonesian labours risk group, there was a significant relationship between the travel purpose and practice ($p<0,05$).

Discussion

This was the first study on KAP with regard to travel related diseases in a large sample of Indonesian international travellers. By focusing on the collection of data from 6 international airports and other several cities all across in Indonesia, the collected data show the general characteristics among traveller risk groups that is divided based on their travel purpose. The data also show the difference of knowledge, attitude and practices among those risk groups.

Travel profile differences among traveller risk group

Our findings show that tourism tend to travel for shorter periods, while Indonesian labours tend to travel for longer periods. The most frequent traveller risk group from Indonesian travellers is tourism (39%) (table 1), and this travel characteristic would strongly influence the content of the travel health advice given. In addition, it is likely that Indonesian travelers dominantly travel to high risk destination which is about 64% of all travellers,as supported by our finding that on table 1, for the large

majority (83%), this was not the first trip to an international country. And also the most frequent travellers on our study based on their companion were solo traveller. As previous study already described that the solo traveller has personal risk profile which increased their relative risk of travel disease.[6,7] This would increase the accumulated risk of acquiring travel-related infectious and will need to be taken into account in pretravel advice. A substantial group of the travellers interviewed were older adults (>30 years). About two-third of respondents were over 30 years of age and the remaining were over 18-30 years of age. As the number of older travellers is increasing, travel health specialists must be particularly aware of the special travel health needs of this group.

Knowledge differences among traveller risk group

The knowledge of travellers about definition and example of travel related disease, and vaccine function was good. The main knowledge assesment in this survey-based research is to know whether the travellers had already known the travel disease risk of their destinations. However, based on table 2, only 18% of travellers has accurate perception of risk of their destinations. As a result, their protection rate (practices) and risk avoiding behaviour (attitude) were lower than their knowledge. This showed that eventhough their knowledge rate was good about definition, and example of travel disease and vaccine function but it didn't reflect a whole of good knowledge if the perceived risk of destination was low as shown by this survey. The results of this survey-based research demonstrated an important educational need among those travelling to

international destinations especially in risk perception of destination and it was suggested that travel health advice providers should continue their efforts to make travellers comply with the recommended travel health advice, especially risk groups that have low of knowledge. We also as the medical students can help by educating the travellers. Example by colabourating with transportation agencies such as International airport (Angkasa Pura), we can make flyers that are distributed at departure gate of International airports and in the aircraft, public education videos that are played at the TV aircraft, etc.

Attitude differences among traveller risk group

Although, high risk destination was the most frequent destination in this research, travel health advice was only sought by 43% (182) travellers. Several factors influenced the uptake of pretravel medical advice, mainly higher standard of education, longer duration of travel, perceived high risk of malaria, backpacking, and travel to rural areas.[8,9] Even if advice on travel-related diseases was sought, the proportion of those who went to see a doctor or other travel medicine practitioner was small, and many sought advice from the Internet, friends, and travel agencies, which are reported to give inadequate or even wrong advice.[3,4,10,12,13] The proportion of travellers seeking pretravel health advice from a doctor was disconcertingly low (3%). This may reflect very low awareness of this service, as well as a lack of availability of travel medicine clinics in Asia.[10] These findings underline the fact that there is an urgent need to improve awareness and availability of

travel medicine in Asia especially in Indonesia. This need is highlighted by the fact that general practitioners often lack training and knowledge in travel medicine.[10] This finding show that bussiness has significantly lower attitude than non bussiness travellers. The reason for this low percentage may be a result of low risk perception but also the increasing number of last minute travellers in bussiness risk group (30%) (table 1). It suggests that time and convenience are substantial factors.[10] By this, we suggest that the travellers had better to plan their travel over 1 month before their departures.

Practices differences among traveller risk group

The risk of travel-related diseases was not known or was underestimated. The main reason for rejection of vaccines was not related to cost, fear of needles, or an overall negative attitude towards vaccines, but rather to lack of knowledge of the risk of diseases.[10] Based on our pilot study of 20 respondents interviewed, none of them knew the risk of common infectious disease in their destination. In addition, only a small proportion reported previous vaccinations for common infectious diseases before travelling. There is therefore an urgent need to increase awareness of the need and availability of travel vaccinations in Indonesian travelers. Awareness of travel medicine was very low, as reflected by the low uptake of doctor advice. The findings underline that most travellers seek travel health advice in travel agent, internet and friends. Increased media attention, public health education and involvement of travel agencies in referring travellers to travel clinics/specialist doctor would be the best strategies to improve this situation.

Standardized airport questionnaire surveys in Indonesia even in Asia should be carried out at regular intervals to monitor the success of such interventions. As previously described, the western travellers have personal risk profile (KAP) well than Asian travellers especially Indonesian travellers.[10] Moreover, these results demonstrate a significant need for travel health professionals to develop better strategies for raising awareness about preventable travel health problems. In particular, there is a need for higher patient presentation to health care professionals, informed advice, and, as a result, a higher proportion of travelers with adequate immunizations for healthy travel.

Specific focus: Indonesian labour risk group (tenaga kerja Indonesia/TKI)

When focusing on Indonesian labour risk group which is one of the important risk group from Indonesia because compared to other risk groups, Indonesian labour risk group has relatively lower knowledge and practices than other risk groups (table 2 and table 4). It is interesting to note that significant correlations were found, based on our analysis (as shown in table 5), between travel purpose of Indonesian labour and their knowledge and practices. Based on our data that Indonesian labour risk group has relatively lower in knowledge and practices than other risk groups, we believe that the government should interfere focused on the knowledge and the practices in Indonesian labour risk group which are relatively lower than other risk groups. This is done in order to reduce the risk of contracting travel disease in this risk group. In addition, the likelihood of Indonesian labour risk group in increasing

their number in the future will become a threat to Indonesia if this risk group isn't interfered by the government seriously in their knowledge and practices.

Specific focus: tourism risk group

Another important group in the traveling community is the tourism. Tourism risk group comprises the largest respondents which is accounting for 39% (table 1) of respondents. The data also showed that there was no significant correlation between travel purpose to tourism and Knowledge, Attitude and Practices of tourism risk group (table 5).

To conclusion, this research provides description about personal risk profile of Indonesian international travelers as a scientific basis to evaluate patterns of disease of travel-related disease in Indonesia. Before the establishment of this report, no institution was in place to compile personal risk profile/behaviour on Indonesian international travellers population. This research shows the personal risk among Indonesian international travellers and this can detect certain risk groups that still has the low rate of KAP which could become a big threat to Indonesia of transmission or acquisition of travel diseases and participate in acceleration of the global spread of infectious disease to other country especially in Indonesia itself. This report can be used to inform recommendations for Indonesian travellers and for health-care providers involved in travel medicine to keep increase their awareness, preparation for travelling, and their protective rate in avoiding disease while travelling.

Acknowledgments

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Table. 1. General Characteristic of 423 respondents between Travel Purpose Risk Group

	Variables	Tourism (N=165)	Business (N=95)	Worship (N=37)	Volunteer (N=2)	Research (N=3)	Student (N=49)	Medical tourism (N=14)	Immigration (N=5)	VFRs (N=16)	Indonesian Labour (N=37)	Total
							Travel Purpose					
Destination	*High risk destination*	124	67	0	2	3	25	14	5	11	22	273 (64,5%)
	Low risk destination	41	28	37	0	0	24	0	0	5	15	150 (35,5%)
Age group	*18-30 years*	53	34	8	1	2	27	6	2	5	12	150 (35,5%)
	>30 years	112	61	29	1	1	22	8	3	11	25	273 (64,5%)
Gender	*Male*	56	69	21	0	1	16	4	4	7	23	201 (47,5%)
	Female	109	26	16	2	2	33	10	1	9	14	222 (52,5%)
Profession	*Civil Servant*	9	10	10	0	0	18	2	0	0	0	49 (11,6%)
	Private Employee	43	16	2	0	0	3	2	0	5	4	75 (17,7%)
	SOE Employee	5	5	0	0	0	0	0	0	1	0	11 (2,6%)
	Police/Military	0	3	1	0	0	0	0	0	1	0	5 (1,2%)
	Entrepreneur	36	21	9	0	0	2	4	1	1	3	77 (18,2%)
	Indonesian Labour	1	11	1	0	0	0	0	2	0	18	33 (7,8%)
	Unemployed	19	1	6	0	0	7	2	1	2	1	39 (9,2%)
	Others	52	28	8	2	3	19	4	1	6	11	134 (31,7%)
Residence	*Living in Indonesia*	159	91	37	2	2	48	14	4	16	36	409 (96,7%)
	Living Abroad	6	4	0	0	1	1	0	1	0	1	14 (3,3%)
Duration	*less than 7 days*	92	44	3	1	2	9	11	0	7	2	171 (40,4%)
	8-14 days	49	13	32	0	0	24	0	1	4	1	124 (29,3%)
	15-28 days	15	8	2	0	0	0	3	0	2	0	30 (7,1%)
	more than 28 days	9	30	0	1	1	16	0	4	3	34	98 (23,2%)
Travel Companion	*Solo traveller*	27	40	0	2	1	15	0	0	6	25	116 (27,4%)
	Spouse/Child	27	5	14	0	2	2	7	2	7	6	72 (17,0%)
	Other family	26	3	17	0	0	0	7	1	3	1	58 (13,7%)
	In group	54	14	5	0	0	21	0	2	0	1	97 (22,9%)
	Friends	26	31	1	0	0	11	0	0	0	4	73 (17,3%)
	Others	5	2	0	0	0	0	0	0	0	0	7 (1,7%)
Travel Experience	*Yes*	138	80	26	2	3	45	14	3	14	29	354 (83,7%)
	No	27	15	11	0	0	4	0	2	2	8	69 (16,3%)

Table. 2. Knowledge comparison between 10 Travel Purpose Risk Group

Purpose	N	Mean	Std. Deviation	Minimum	Maximum	Std. Error of Mean
Tourism	165	83.63	11.13	25.00	100.00	.87
Business	95	83.04	14.62	13.00	100.00	1.50
Worship	37	78.27	14.93	50.00	100.00	2.45
Volunteer	2	81.50	9.19	75.00	88.00	6.50
Research	3	87.67	12.50	75.00	100.00	7.22
Student	49	89.80	9.24	63.00	100.00	1.32
Medical tourism	14	86.14	4.72	75.00	88.00	1.26
Immigration	5	82.80	7.12	75.00	88.00	3.18
Visiting friends or relatives	16	84.69	9.71	63.00	100.00	2.43
Indonesian labour	37	69.86	14.63	38.00	100.00	2.41
Total	423	82.67	13.09	13.00	100.00	.64

Knowledge min-max: 1-100

Table. 3. Attitude comparison between 10 Travel Purpose Risk Group

Purpose	N	Mean	Std. Deviation	Minimum	Maximum	Std. Error of Mean
Tourism	165	79.17	7.80	59	100	.61
Business	95	77.92	9.47	43	100	.97
Worship	37	84.38	8.79	68	100	1.45
Volunteer	2	77.00	5.66	73	81	4.00
Research	3	90.00	8.19	81	97	4.73
Student	49	84.20	9.95	68	100	1.42
Medical tourism	14	81.57	12.46	62	95	3.33
Immigration	5	75.20	8.29	68	89	3.71
Visiting friends or relatives	16	79.06	9.84	65	95	2.46
Indonesian labour	37	78.86	9.75	62	97	1.60
Total	423	80.00	9.22	43	100	.45

Attitude min-max: 1-100

Table. 4. Practice comparison between 10 Travel Purpose Risk Group

Purpose	N	Mean	Std. Deviation	Minimum	Maximum	Std. Error of Mean
Tourism	165	72.67	8.59	56	94	.67
Business	95	71.27	8.81	50	94	.90
Worship	37	74.76	7.62	61	94	1.25
Volunteer	2	75.00	11.31	67	83	8.00
Research	3	83.33	14.36	67	94	8.29
Student	49	75.98	8.28	50	89	1.18
Medical tourism	14	68.79	7.98	56	78	2.13
Immigration	5	68.80	9.18	61	83	4.10
Visiting friends or relatives	16	70.44	10.62	50	89	2.66
Indonesian labour	37	67.08	8.59	50	94	1.41
Total	423	72.26	8.91	50	94	.43

Practice min-max: 1-100

For bivariate analysis (*Table 5*), we found that in worship, student, and Indonesian labours risk group, there was a significant relationship between the travel purpose and knowledge ($p<0,05$). In business, worship, and student risk group, there was a significant relationship between the travel purpose with attitude ($p<0,05$). Whereas in research, student, and Indonesian labours risk group, there was a significant relationship between the travel purpose and practice ($p<0,05$).

Table 5. Bivariate analysis: Association between travel purpose and knowledge, attitude, and practice (based on p-value)

	Knowledge*	Attitude**	Practice**
Tourism	0,5689	0,1205	0,4535
Business	0,4513	0,0124	0,2208
Worship	0,0432	0,0024	0,0743
Volunteer	0,7032	0,6458	0,6643
Research	0,5306	0,0593	0,0306
Student	0,0000	0,0006	0,0018
Medical tourism	0,3845	0,6355	0,1380
Immigration	0,7707	0,2427	0,3830
VFRs	0,6794	0,6806	0,4048
Indonesian labour	0,0000	0,4358	0,0002

*: *Mann-Whitney Test*
**: *Unpaired T-test*