THE RELATIONSHIP BETWEEN SOCIO-DEMOGRAPHIC FACTORS AND CORRUPTION KNOWLEDGE AMONG MALAYSIAN PUBLIC SERVANTS: AN EXPLORATORY STUDY

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ABSTRACT

It is significant to note a lack of studies and literature that address the idea of knowledge about corruption, particularly concerning Malaysia. Hence, this exploratory study has been designed to address several factors in this regard; (1) to develop a construct that will enable some form of measurement of corruption knowledge, and which is based on the interpretation of the Malaysian Anti-Corruption Act 2009 (MACC Act 2009), (2) to measure the level of corruption knowledge, and (3) to examine the effects of socio-demographic factors on the level of corruption knowledge. A ten-item construct intended to enable the level of corruption knowledge to be measured has been developed. 1,579 public servants participated in the resulting survey. Descriptive and statistical tests were performed using IBM-SPSS Statistics 21 software. The results indicated that Malaysian public servants exhibit deficiencies in their knowledge of corruption. The study also revealed that the amount of knowledge of corruption an individual might have was influenced by gender, age, education level, income, and tenure.

Keywords: Corruption knowledge, MACC Act 2009, public servant, Malaysia
INTRODUCTION

Corruption is a global phenomenon, and more than two-thirds of the countries surveyed on this issue have scored below 50 in the Transparency International’s (TI) Corruption Perceptions Index (CPI) (Corruption Perception Index 2017, n.d.), including Malaysia. Despite all the efforts made by the government to eradicate the issue of corruption within Malaysia, it is still far from being corruption-free (Siddiquee, 2006; 2010). Malaysia’s CPI score is 47/100, and the country is ranked 62nd among 180 nations surveyed for corruption (Corruption Perception Index 2017, n.d.).

There is a negative correlation between CPI, economic development and growth (Tanzi & Davoodi, 2000). Corruption causes losses to a country where this is present. According to the Malaysian Anti-Corruption Commission (MACC), Malaysia has sustained losses of around RM10 billion a year as a result of corruption (David, 2018). The figure mentioned above represents between one and two percent of the Gross Domestic Product of Malaysia (GDP). The former Auditor-General of Malaysia also revealed that the country sustained losses of around 20 to 30 percent of the value of projects involved in infrastructure construction due to corruption (“Ambrin: losses” 2017, para 3). Corruption has tended to increase the total costs of development and cost of capital for the firms involved. Internationally, corruption has been estimated to cost approximately five percent of global GDP (Graycar & Sidebottom, 2012). Corruption is also found to have hampered domestic and foreign short-term and long-term investments (“Corruption and development,” 1998).

The issue of corruption knowledge has been overlooked by researchers in the past. The authors of this study are not aware of any other studies, which have examined the topic of corruption knowledge, apart from research by Bowman and Gilligan (2007). However, the issue of knowledge has been regarded as important to other fields and has been extensively studied (Ajzen, Joyce, Sheikh, & Cote, 2011; Fabrigar, Petty, Smith, & Crites, 2006). Previous studies have also found that knowledge can moderate the relationship between attitude and behaviour (Fabrigar et al., 2006).

The authors are not aware of any studies, except Bowman and Gilligan (2007), that had examined corruption knowledge, particularly with reference to Malaysia. Literature in the field of corruption also lacks studies that have examined the effects of socio-demographic factors on corruption knowledge. This study aims to address the gaps in knowledge mentioned above.

It is assumed that at least two parties will always be involved in a corruption-related offence. The two parties would be givers and receivers.
In a large number of instances, the receivers are most likely to be public servants, although there are some exceptions. One study has reported that 40.0 percent of the offenders arrested for corruption by MACC during the period of 2011 to 2015 were public servants (Hashim, 2017). It is important to note that public servants are tasked with making policies and decisions. They also implement, monitor, and evaluate projects (Hashim, 2017). Given the crucial roles played by public servants, it was determined as being imperative to focus this study on public servants. Hence, this study was designed to develop a corruption knowledge instrument and examine the demographic factors affecting corruption knowledge among Malaysian public servants.

Definition

It is observed that there exists a wide range of definitions of corruption. However, with regards to corruption in the public sector, Agatiello (2010) defines it as” …an action, omission, vice or abuse that diverts the ethical or legal obligations of a public function towards private objectives of economic, social or political benefit” (p.457). In relation to corruption in Malaysia, MACC defines corruption as “…the act of giving or receiving of any gratification or reward in the form of cash or in-kind of high value for performing a task in relation to his/her job description.” (“What is corruption?”, n.d.).

In Malaysia, the issue of corruption falls under the jurisdiction of the Malaysian Anti-Corruption Act 2009 (MACC Act 2009). Hence, in this paper, corruption is defined consistent with the interpretation of the Malaysian Anti-Corruption Commission Act 2009 (MACC Act 2009). In addition to offences described in MACC Act 2009, MACC is also empowered to investigate under the provisions of certain sections of The Penal Code, Customs Act 1954, and Electoral Offences Act 1954. In this study, corruption could take up the forms of bribery, fraud, embezzlement, and kickbacks (Sohail & Cavill, 2008) as long as the offences fall under the ambit of one of the four Acts mentioned above.

LITERATURE REVIEW

Construct of corruption knowledge

A review of recent literature from the year of 2007 onwards has revealed a limited number of studies related to knowledge on corruption. Nevertheless, knowledge-related studies have been well established in other fields such as food safety (Wilcock, Pun, Khanona, & Aung, 2004), environment (Wahab & Abdo, 2009; Tilikidou, 2007), psychology (Ajzen

However, Bowman and Gilligan (2007) did attempt to develop a 12-item construct to measure corruption knowledge in Australia. Some of the items were generic enough to be replicated in other cultural settings. Examples of such generic items would be “government officials accepting gift” and “appointing your friends into senior jobs in government and institutions”. However, some of the items in Bowman’s study were more specific to an Australian context and less applicable to Malaysia. Examples of inapplicable items would be “biased media reporting of politics and political parties” and “individuals or organisation making large donations to political parties”. Though biased media reporting is morally wrong, it is not a corruption offence under Malaysian law. It is essential to note that a corrupt practice in one country may not be perceived as corruption in a different country (Sullivan, 2006). With regards to political donations, the Malaysian Political Funding Act was still under development and yet to be tabled and approved by the parliament at the time this paper was written.

Graycar (2014) identified two suspected corruption activities that were observed in the public service of Australia in his study. The two activities were “Hiring friends or family for public service jobs” and “Hiring one’s own company or the company belonging to close associates or relatives to provide public services”. However, Graycar (2014) did not specifically develop a construct to measure corruption knowledge.

Other than the two studies mentioned above, the authors were not aware of any recently published study that had developed a construct and items to measure corruption knowledge especially in the context of Malaysian law. It was therefore seen as imperative to develop a construct and items to measure corruption knowledge for Malaysia.

Socio-demographic factors affecting knowledge.

Previous studies have produced mixed results regarding the effects of socio-demographic variables on knowledge levels. The authors suspected that the variation in findings of effects of socio-demographic variables on knowledge levels has been due to the nature of the issues investigated. Furthermore, those studies were performed in different countries. Tilikidou (2007) argued that “a scale excellent for a certain place and time
might not be sufficient for other environments or populations” (Tilikidou, 2007, p. 122).

The results of the review on past studies with regards to the effect of socio-demographic factors on knowledge are summarised in Table 1. It must be noted that the review was based on related studies in other fields due to a lack of studies that specifically examined the effects of socio-demographic factors on corruption knowledge.

It is evident from the results presenting in Table 1 that previous studies were consistent in their findings on the effects of education, income, tenure, and ethnicity on the knowledge levels. Education was found to have a positive effect on knowledge levels (al-Waeli & Al-Junaidi, 2005; Tilikidou, 2007; Abdul Wahab & Abdo, 2009; Winterich et al., 2011; Amin et al., 2012; Karytsas & Theodoropoulou, 2014). Income (Tilikidou, 2007; Koffmann et al., 2007; Amin et al., 2012). Tenure was also found to have a positive relationship with knowledge levels (Schönherr, Halfens, & Lohrmann, 2015). It was also found that levels of knowledge may be different between people of different ethnicities (Pearson et al., 2012; Koffmann et al., 2011).

Table 1 The results of past studies on the relationship between socio-demographic factors and knowledge

<table>
<thead>
<tr>
<th>No</th>
<th>Socio-demographic factors</th>
<th>Relationship</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gender</td>
<td>Males</td>
<td>Wahab and Abdo (2009); Pearson et al. (2010); Mostafa (2017)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>Gerend and Magliore (2008); Winterich et al. (2010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No effect</td>
<td>Tilikidou (2007); Aktamis (2011)</td>
</tr>
<tr>
<td>2</td>
<td>Age</td>
<td>Positive</td>
<td>Tilikidou (2007); Pearson et al. (2010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>Wahab and Abdo (2009); Karytsas and Theodopolou (2014); Amin et al. (2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No effect</td>
<td>Aktamis (2011)</td>
</tr>
</tbody>
</table>
Table 1 The results of past studies on the relationship between socio-demographic factors and knowledge (continued)

<table>
<thead>
<tr>
<th>No</th>
<th>Socio-demographic factors</th>
<th>Relationship</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Education</td>
<td>Positive</td>
<td>al-Waeli and Al-Junaidi (2005); Tilikidou (2007); Abdul Wahab and Abdo (2009); Winterich et al. (2011); Amin et al. (2012); Karytsas and Theodopoulou (2014)</td>
</tr>
<tr>
<td>4</td>
<td>Income</td>
<td>Positive</td>
<td>Tilikidou (2007); Koffmann et al. (2007); Amin et al. (2012);</td>
</tr>
<tr>
<td>5</td>
<td>Tenure</td>
<td>Positive</td>
<td>Schönherr et al. (2015)</td>
</tr>
<tr>
<td>6</td>
<td>Ethnicity</td>
<td>Significant</td>
<td>Pearson et al. (2010); Koffmann et al. (2011)</td>
</tr>
</tbody>
</table>

On the other hand, some studies also indicated that there were mixed results with regards to the effects of gender on level of knowledge. Past research found that level of knowledge was either dominated by males (Wahab & Abdo, 2009; Pearson et al., 2010) or females (Gerend & Magliore, 2008; Winterich et al., 2010). It was also found that gender had no effect on level of knowledge (Tilikidou, 2007; Aktamis, 2011).

Contradictory results were also reported by previous studies on the effect of age on level of knowledge. While Tilikidou (2007) and Pearson et al. (2010) reported positive relationship between age and level of knowledge, negative effects were indicated by studies by Abdul Wahab and Abdo (2009), Karytsas and Theodopoulou (2014) and Amin et al. (2014).

**Hypotheses Development**

In the absence of similar previous studies, the hypotheses were developed based on syntheses of the findings of knowledge-related studies as elaborated above. Hence, the hypotheses of this study are:

H1: The male and female public servants differ in their levels of corruption knowledge.

H2: Ages of the public servants positively correlate with the level of corruption knowledge.
H3: Public servants of different education background differ in their levels of corruption knowledge.

H4: Income of the public servants positively correlates with their level of corruption knowledge.

H5: Tenure of the public servants positively correlates with corruption knowledge.

H6: Public servants of different ethnics differ in their levels of corruption knowledge.

Significance of the Study

This study is a novelty as it is the first to propose a construct with items that measure corruption knowledge based on the definition of corruption applicable in Malaysia. Issue-related knowledge is difficult to measure (Tilikidou 2007). Previous studies had adopted different constructs to measure the level of knowledge involving a variety of subject matters (Tilikidou, 2007; Bowman & Gilligan, 2007). Hence this study offers a valid and reliable construct to assess corruption knowledge in the Malaysian setting. This study enriches the literature on the development of knowledge construct, especially on corruption.

Development of a corruption knowledge instrument specifically for Malaysia is essential. In this study, corruption is defined from the legal perspective, instead of from a moral viewpoint. In Malaysia, corruption is defined under the Malaysian Anti-Corruption Act 2009 (MACC Act 2009), Customs Acts, Political Offences Act, and the Penal Code. Hence the way corruption is interpreted in Malaysia may differ from how it is interpreted in other countries due to differences in local values and beliefs (Hashim, 2017). This study will also enrich the existing literature on the socio-demographic factors that affect corruption knowledge.

METHODOLOGY

Instrument

A questionnaire was developed based on the operational definition adopted in this study to solicit data from the public servants. It was divided into two sections. Section A focuses on demographic information of the respondents. This section includes questions on gender, age, educational level, income, tenure, ethnicity and religion. Section B contains ten statements which were related to corrupt practices. The statements represent corrupt offences as stipulated by the MACC Act 2009 and other relevant Acts.
It is worth noting that in the development of a construct, which represents a latent variable, the responses are normally captured via a Likert-type scale (e.g. Bowman & Gilligan, 2007). However, in certain circumstances, similar to this study, items with a nominal scale (yes/no) are more appropriate (e.g. Amin et al., 2012). The items were developed by a group of experts representing the academic fraternity, statisticians, and senior public servants. The latter was represented by among others, senior officials of MACC, Malaysian Institute of Integrity (INTEGRITI), Malaysian Administrative Modernisation Planning Unit (MAMPU), Department of Statistics (DOS), and Public Service Department (PSD).

Initially, the researchers had developed a list of four items (i.e. B1, B4, B5, and B9) which were adapted from Bowman and Gilligan (2007) and Graycar (2014) (see Table 2). Then the experts were gathered in a round-table discussion. They added six more items (i.e. B2, B3, B6, B7, B8, and B10) representing the offences that fall under the purview of MACC Act 2009. The final construct contains ten items as shown in Table 2.

The questionnaire had undergone translation and back-translation process (McGorr, 2000). For the purpose of data collection, the questionnaire was first developed in Malay language. It was later translated into English by a bilingual expert. Then the English version questionnaire was back-translated to Malay by another bilingual expert. Extra caution was undertaken to minimise discrepancies between the Malay and English versions of the questionnaire. The English version of the questionnaire is used for the purpose of this publication.

**Measurement of corruption knowledge**

The responses on corruption knowledge items were captured in a dichotomous scale (1=Yes/0=No) (Amin et al., 2012). While “Yes” represents the correct answer, the opposite can be said for a “No” answer. The level of corruption knowledge of a respondent is measured as the total sum of the “Yes” (correct) answers (Tilikidou, 2007; Schönherr et al., 2015). The corruption knowledge will take up theoretical values of 0 to 10. For the purpose of further analyses, the scores were then transformed into a 5-ordinal scale (i.e. 1=≤2; 2=3-4; 3=5-6; 4=7-8; 5=9-10). Higher scales reflect higher corruption knowledge.
Table 2 Construct and items of corruption knowledge

<table>
<thead>
<tr>
<th>ITEMS NO.</th>
<th>ITEMS</th>
<th>SOURCES</th>
<th>CORRESPONDING ACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Accepting or receiving gifts in the form of cash, goods or services in return of a favour or service provided.</td>
<td>Bowman &amp; Gilligan (2007)</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B2</td>
<td>Using the office money for personal use (or self-interests).</td>
<td>New</td>
<td>Penal Code</td>
</tr>
<tr>
<td>B3</td>
<td>Receiving money or reward from customers by coercion or force.</td>
<td>New</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B4</td>
<td>Directly involved in the process of awarding contracts to family members.</td>
<td>Graycar (2014)</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B5</td>
<td>Directly involved in the process of appointing a family member into filling up a vacant position in the department.</td>
<td>Bowman &amp; Gilligan (2007); Graycar (2014)</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B6</td>
<td>Submit claims for lodging while on duty away from the office even though lodging was provided by the organiser.</td>
<td>New</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B7</td>
<td>Taking office properties (for example, thumb drive, toner, paper and others) for personal use.</td>
<td>New</td>
<td>Penal Code</td>
</tr>
<tr>
<td>B8</td>
<td>Actions of enforcement officers that are threatening and intimidating towards customers for the purpose of extorting money from them.</td>
<td>New</td>
<td>MACC Act 2009</td>
</tr>
<tr>
<td>B10</td>
<td>Money politics (example: giving bribe to buy or garner votes).</td>
<td>New</td>
<td>Electoral Offence Act 1954</td>
</tr>
</tbody>
</table>
Population and sample
The population of this study were the public servants of Malaysia which total is 1.6 million (Annuar, 2017). Hence, Krejcie and Morgan’s table was referred to in determining the sample size (Krejcie & Morgan, 1970). At the confidence level of 95 percent and a margin of error of 2.5 percent, the minimum sample size was determined at 1,536. The stratified random sampling was used in this study. The first stage involved random sampling of the agencies. Then, the heads of agencies randomly selected their employees to participate in the survey.

Data collection procedure
Survey Monkey, an online survey tool, was employed to solicit data from the respondents. The respondents were gathered in the computer laboratories of their respective agencies. Their responses were keyed into the computers which were linked to the database. This technique saved key-in time and minimised key-in error. Data were collected during the month of January to March, 2017. After a period of three months, a total of 1,863 public servants had responded to this survey. However, upon cleaning the data for missing values, the usable questionnaires are 1,579. This represents a usable response rate of 84.76 percent.

Data analyses
The data were analysed using the statistical software named IBM-SPSS Statistics version 21. Both descriptive and statistical analyses were applied in this study. The hypotheses were tested using the Mann-Whitney U test, Kruskal-Wallis H test, and Spearman correlation test.

Validity and Reliability
Prior to data analyses, it is imperative to carry-out the validity and reliability tests of the questionnaire. This is especially so as this study developed a new construct and items to measure level of corruption knowledge.

Validity
The questionnaire was developed by a team of experts including academics and practitioners. Upon its completion, the Malay-version questionnaire was pre-tested with a group of ten public servants to determine the ability of the respondents to understand the questions and statements. The questionnaire was amended and refined based on the comments received. Later the questionnaire was pilot-tested on 50 public
servants. No further refinement was required. In addition, the questionnaire was also examined for item difficulty (ID) in order to check for validity (Labeau, Vandijck, Claes, Van Aken, and Blot, 2007; Schönherr et al., 2015). ID was measured as percentage of respondents giving the right answers to total respondents. The acceptable ID is between 10.0 percent and 90.0 percent. If an item has an ID of less than 10.0 percent, the item is considered as too difficult. On the other hand, if the ID is greater than 90.0 percent, the item is considered as too easy. In this study, the IDs ranged between 50.5% to 65.8%. Hence it can be concluded that the items were at the moderate level of difficulty and were acceptable. Therefore, all the ten items were retained. It can be concluded at this juncture that the questionnaire is valid.

**Reliability**

In this study, the responses to the items were provided in a nominal scale (0=No, 1=Yes). Hence, the Kuder-Richardson 20 (KR 20) was employed to test for reliability (Kuder and Richardson, 1937; Schönherr et al., 2015). The values of KR-20 have a range of zero to one, with higher values indicate higher reliability. The threshold for KR-20 is similar to Cronbach-\(\alpha\), which is 0.70 onward (Nunally, 1978).

The KR 20 for the construct of corruption knowledge was 0.97, which was outside the normally-accepted upper limit of 0.95 (Tavakol & Dennick, 2011) even though some studies had reported alphas as high as 0.99 (Peterson, 1994). There were two possibilities of high KR 20, which were too many items and/or redundancy of items (Peterson, 1994). With regards to the number of items, the researchers opined that ten items were acceptable. There are evidences that previous studies measuring knowledge had included more than ten items. For examples, Schönherr et al. (2015) and Tilikidou (2007) employed 20 and 27 items respectively.

In order to verify for items redundancy, Exploratory Factor Analysis (EFA) could not be performed on nominal scales (Floyd & Widaman, 1995). The researchers did consider the application of tetra choric correlation to check the correlation among nominal and dichotomous scales (Bonnet & Price, 2005). However, tetra choric correlation procedure is not available in IBM-SPSS Statistics 21. Manual computation of the tetra choric correlation coefficient was not considered in this study. Thus, the researchers relied on theoretical support underlying each item to address the issue of item redundancy.

Every item possessed strong and valid underlying theoretical support and can be differentiated from each other. Even though some items seem to ask the same question, but theoretically they are different. For example, items number two and seven, seem to be asking the same
questions. However, theoretically they are different. During the round-table discussion with the experts it was argued that people might interpret taking money and taking non-monetary assets (e.g. utensils) differently. As one might interpret taking money from office as an offence, he/she may see taking papers from the office as a common practice. Hence, it was finally decided that the ten items were retained in this study for further analyses.

RESULTS

Description of The Data

The majority of the respondents were males (5.9 percent). Their average age was 38.14 years with a standard deviation of 8.60 years. The majority of the Malaysian public servants were Malays which represent 85.3 percent of sample. This is expected since the Malaysian public service is dominated by the Malays (Ilhaamie, 2010). The pattern of distribution of the sample according to religions is almost similar to their distribution according to races.

The majority of the respondents possessed tertiary education (71.0 percent). This means that some of the support staffs had acquired tertiary education. The majority of the respondents earned less than RM4,000 per month (54.7 percent). On the other hand, 43.8 percent of them had monthly incomes of RM4,000 – RM10,000. Only 1.5 percent of them earned more than RM10,000 per month.

The majority of the respondents were support staffs (Grade 40 and below). The management and professional staffs (Grade 41-54) represent 39.6 percent of sample. Only 0.4 percent of the respondents were in the Premier Grade (JUSA). On average, they had a tenure of 14 years with a standard deviation of 9.37 years.

Corruption knowledge

It is evident in Figure 1 that the Malaysian public servants were deficient of corruption knowledge. Examination of the correct answers for every item indicated that the highest score was 65.8 percent (POLITICS) while the lowest was 50.5 percent (GOODS).

With regards to offences related to the Section 16 of the MACC Act 2009, the scores for items PRESENT and FORCE were 65.2 percent and 60.90 percent respectively. In addition, the scores for items related to offences under the Section 23 of the MACC Act 2009 were also low. The scores for items AWARD, APPOINT, THREATS and POWER were 61.80 percent, 60.10 percent, 61.70 percent and 63.80 percent.
respectively. The respondents also scored relatively low on items related to the offences under the Section 409 of The Penal Code. The scores for items MONEY and GOODS were 53.80 percent and 50.50 percent respectively. Lastly, the respondents also scored lowly on item related to the Electoral Offence Act 1954. The score for item POLITICS was 65.80 percent.

![Figure 1: Percentages of correct answers according to items of the questionnaire](image)

With regards to the level of corruption knowledge, the majority of the public servants fall into either extreme of very low (34.1 per cent) or very high (48.6 per cent) (see Table 3). The percentages of them fall into the low, moderate and high categories of corruption knowledge were 2.6 per cent, 5.4 per cent, and 9.3 per cent respectively.

<table>
<thead>
<tr>
<th>Original scores (0-10)</th>
<th>New scale</th>
<th>Level of corruption knowledge</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 2</td>
<td>1</td>
<td>Very low</td>
<td>537</td>
<td>34.1%</td>
</tr>
<tr>
<td>3-4</td>
<td>2</td>
<td>Low</td>
<td>44</td>
<td>2.6%</td>
</tr>
<tr>
<td>5-6</td>
<td>3</td>
<td>Moderate</td>
<td>85</td>
<td>5.4%</td>
</tr>
<tr>
<td>7-8</td>
<td>4</td>
<td>High</td>
<td>147</td>
<td>9.3%</td>
</tr>
<tr>
<td>9-10</td>
<td>5</td>
<td>Very high</td>
<td>768</td>
<td>48.6%</td>
</tr>
</tbody>
</table>

The effects of socio-demographic factors on corruption knowledge

The results of the hypothesis tests are summarised in Table 4. Mann-Whitney U test was employed to test the difference in corruption
knowledge between males and females. The results indicated that the mean ranks for males and females are 820.45 and 755.74 respectively. Hence it can be concluded that the level of corruption knowledge of males was significantly and statistically higher than females ($U=285,117.00$, $p<0.01$). Thus, H1 was supported.

Spearman correlation procedure was employed to test the relationship between age and corruption knowledge. The results indicated that there was a strong positive correlation between age and corruption knowledge, which was statistically significant ($r_s=0.171$, $p<0.01$). Therefore, H2 was supported.

With regards to education levels, the scale was collapsed into two categories, which were with and without tertiary education. Mann-Whitney U test was employed to test the difference in corruption knowledge between these two groups of respondents. The results indicated that the mean rank for respondents with tertiary education (838.24) was higher than those without tertiary education (671.92). The difference in corruption knowledge between the two groups was significant ($U=202,627.00$, $p<0.01$). Hence, H3 was supported.

<table>
<thead>
<tr>
<th>No.</th>
<th>Hypotheses</th>
<th>Factors</th>
<th>Statistical tests</th>
<th>$p$</th>
<th>Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>H1</td>
<td>Gender</td>
<td>Mann-Whitney U</td>
<td>&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>2</td>
<td>H2</td>
<td>Age</td>
<td>Spearman correlation</td>
<td>&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>3</td>
<td>H3</td>
<td>Education</td>
<td>Mann-Whitney U</td>
<td>&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>4</td>
<td>H4</td>
<td>Income</td>
<td>Mann-Whitney U</td>
<td>&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>5</td>
<td>H5</td>
<td>Tenure</td>
<td>Spearman correlation</td>
<td>&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>6</td>
<td>H6</td>
<td>Ethnicity</td>
<td>Kruskal-Wallis H</td>
<td>0.260</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

Similarly, Spearman correlation was used to examine the relationship between income and corruption knowledge. The results indicated that there was a strong positive correlation between income and corruption knowledge. The relationship was statistically significant ($r_s=0.169$, $p<0.01$). Consequently, H4 was supported.

Spearman correlation was also employed to analyse the relationship between tenure and corruption knowledge. The results
indicated that there was a strong positive correlation between tenure and corruption knowledge, which was statistically significant \((r_s=0.119, p<0.01)\). For that reason, H5 was supported.

Finally, Kruskal-Wallis H-test was employed to investigate the differences in corruption knowledge among respondents of different ethnicities. The results showed that the differences in corruption knowledge among the races were not statistically significant \((\chi^2(4) =5.281, p=0.260)\). Thus, H6 was not supported.

This study also examined the effect of religion on level of corruption knowledge. However, the result of Kruskal-Wallis H test indicated that there was no significant difference in level of corruption knowledge among public servants of different religions \((\chi^2(4) =8.821, p=0.07)\). This result was expected because, in Malaysia, ethnicity is associated with religion (Haque, 2003).

It can be concluded at this juncture that corruption knowledge was related to gender, age, income, tenure, and education level. However, the level of corruption knowledge was not influenced by ethnicity.

DISCUSSION

With regards to the individual item performances, the findings of this study were less encouraging. Only 50.50 per cent to 65.80 per cent of the public servants could identify the corruption offences correctly. However, these findings were consistent with the findings of Bowman and Gilligan (2007). It is evident that even people from a more developed country such as Australia had difficulties in determining what is corrupt and not corrupt activities (Bowman & Gilligan, 2007).

The results indicated that the highest percentage of correct answers was evidence on item “Money politics (example: giving bribe to buy or garner votes)”. This is not surprising because at the time of data collection, the country was just about a year away from the general election. It is reasonable to posit that this result was also influenced by the extensive discussions on issues related to political corruption in the social media. The next item that had received relatively high percentage of correct answers was “Accepting or receiving gifts in the form of cash, goods or services in return of a favour or service provided.” This reflects that the majority of the public servants were aware that accepting gifts is a corruption offence.

It is worth highlighting that a substantial percentage of the public servants were not aware that “Using the office money for personal use (or self-interests)” and “Taking office properties (for example, thumb drive, toner, paper and others) for personal use” were corrupt activities. These
items were considered corrupt practices under the Penal Code. We suspected that maybe the respondents were aware that these activities were wrong but not tantamount to corruption.

Another item that had received low correct responses was “Submission of accommodation claim for an out-station duty in which accommodation had been provided by the organiser”. It is not unreasonable to envisage that the respondents did believe that it was an offence but not tantamount to corruption.

The relevant authority should be alarmed with the findings of this study. It is impossible to have effective anti-corruption measures if the public servants are not equipped with adequate knowledge on corruption. Regarding the level of corruption knowledge, the findings of this study indicated that the public servants were deficit in this aspect. Only 57.9 percent of them were in the high and very high categories. The researchers were of the opinion that the deficiency in corruption knowledge among Malaysian public servants can be attributed to at least two factors, which were culture and lack of in-depth understanding of the religion.

With regards to culture, Hofstede (1980; 1991) had studied the profiles of people in different countries. He categorised individuals into four cultural dimensions which are power distance, uncertainty avoidance, individualism/collectivism, and masculinity/feminity. People of different cultures tend to behave differently (Liu, Olivier, & Sundarshan, 2001). Previous studies found that Malaysians, regardless of ethnicity, were high on power distance (Quester, Karunaratna, & Goh, 2000; Ahmed, Mouratidis, & Preston, 2008) and collectivism cultures (Lim, 2001). Corruption tends to be higher in collectivism and high power distance cultures (Getz & Vokeme, 2001). It is alarming that public officials in a high power distance society feel that it is right for them to benefit from their positions. They perceive that it is their privilege to obtain personal gain from the positions and power they are in (Othman, Shafie, & Abdul Hamid, 2014). On the other hand, public officials in a collectivism society tend to engage in corrupt practices and abuses of power in order to favour their own social group (Getz & Vokeme, 2001). Those with power will look after their close associates, friends, and relatives (Othman et al, 2014). Furthermore, gift-giving is perceived as indispensable in maintaining business relationships in the Asian culture (Chi-Chen, 2012). It is worth noting that corrupt behaviour benefits both the briber and the bribed. The reciprocity between the giver and the receiver goes along with the old maxim that says “there is no such thing as a free lunch”.

It must be noted that the above-mentioned studies proved the relationship between cultural dimensions and corruption behaviour. However, this study measured the level of corruption knowledge. If
culture affects behaviour (Get & Vokeme, 2001) and knowledge influences behaviour (Ajzen et al., 2011), it is reasonable to postulate that corruption knowledge is also influenced by culture.

With regards to religion, it had been argued that religion is one of the pillars of culture (Paldam, 2001). All religions oppose to corruption (Beets, 2007). However, since the majority of the respondents were Muslims (89.9 per cent), only corruption from the perspective of Islam is discussed here. Islam forbids corruption (‘Arafa, 2012). However, if corruption is prohibited in Islam why the Muslim public servants were deficient of corruption knowledge? The authors suspected that the deficiency in corruption knowledge is attributed to their lack of in-depth understanding of the religion, similar to how ISIS fighters misinterpreted the word *jihad*. Lebovich (2016) argued that the misinterpretation of the word *jihad* by the ISIS fighters was due to their low understanding of Islam. Thus, it is reasonable to expect the same reason in the case of deficiency of corruption knowledge.

Concerning the effects of socio-demographic factors on the level of corruption knowledge, the findings of this study supported the hypotheses H1, H2, H3, H4, and H5. This indicated that the level of corruption knowledge was associated with gender, age, education, income, and tenure. However, H5 was not supported by the findings. Thus, level of corruption knowledge was not influenced by ethnicity.

In the absence of similar previous studies, the authors made comparisons to studies on knowledge in other fields. The significant effect of education level on level of corruption knowledge was expected. This finding was consistent with the findings of previous studies (e.g. Tilikidou, 2007; Winterich et al., 2011; Amin et al., 2012; Karytsas & Theodopolou, 2014). It is reasonable to posit that better educated people tend to read more compared to the less educated. However, a more logical explanation is needed to rationalise the significant effects of age, income and ethnicity on the level of corruption knowledge. A Spearman correlation test indicated that age, income and tenure were correlated to each other ($r_s<0.01$). This suggests that the older the individual is, the longer is his tenure, and the higher is his income. Hence it can be concluded that public servants with longer working experience (high tenure) will have higher knowledge on corruption, vice-versa. It so happened that experienced public servants were also older and in the higher income categories.

With regards to the effect of gender on level of corruption knowledge, further analysis pointed out that gender was associated with tenure. The result of Mann-Whitney U test revealed male public servants had longer services than their female counterparts ($U=270968.50, p<0.01$).
Thus, it can be construed that male public servants had higher level of corruption knowledge because they had been longer in the service.

Implications

Policy implications

If the country aspires to move towards a corruption-free country, the ability of the citizen to differentiate what is corrupt and not corrupt is essential. This is the basic component of potentially effective corruption mitigation measures. Hence, corruption knowledge should be introduced from the young age. The Government could introduce that knowledge through the education system. However, to create a new subject is not an option. The elements of corruption knowledge could be inserted as examples in the existing subjects such as Bahasa Melayu, English, Moral Studies, and Islamic Studies.

Managerial Implications

The information on the level of corruption knowledge of the Malaysian public servants is important to the decision-makers in the country. They should work closely with MACC and INTEGRITI to review the existing training programmes and modules. In addition to instilling corruption knowledge, future training programmes and modules should emphasise on cultural behavioural change and enhancement of self- and inner-control of the public servants. They avoid corruption not only because of fear of punishment but more importantly is fear of Allah SWT. In addition to the National Institute of Public Administration (INTAN), the training programmes can be conducted in-house to expedite the coverage.

LIMITATION AND FUTURE RESEARCH

The findings of this study should be interpreted with cautions in view of its limitations. Firstly, this is a preliminary study in an attempt to understand the corruption knowledge and the effects of socio-demographic factors on corruption knowledge especially in the Malaysian context. This study needs to be replicated in order to further re-confirm its validity and reliability.

Secondly, the population and sample of this study were the Malaysian public servants. Hence, the findings cannot be generalised to people of another sector. Future studies should examine the corruption knowledge among employees of the private sector. It is reasonable to expect that employees of the private sector to have different perceptions
about corruption. As givers they may not have the same level of guilt feelings compared to their counterparts in the public sector. Future studies should also be conducted among students. If their corruption knowledge will determine their corrupt behaviour, it is important for them to be equipped with sufficient corruption knowledge before they enter the job market.

Thirdly, this study used dichotomous nominal scale to capture the knowledge on corruption. Hence factor analysis could not be used and the dimensionality of the items could not be ascertained. Future studies should use a Likert-type scale such as 1=definitely correct to 5=definitely incorrect (Gendall et al., 1995) or 1=definitely corrupt to 3==definitely not corrupt (Bowman & Gilligan, 2007) to measure corruption knowledge. This will allow future research to carry-out factor analysis to determine the dimensionality of the items.

CONCLUSION

This study offers a new focus in combating corruption in Malaysia. While previous studies had their foci on the sources of corruption (e.g. Bowman & Gilligan, 2007; Othman, Shafie, & Abdul Hamid, 2014) and mitigation of corruption (Prabowo & Cooper, 2016), corruption knowledge as an antecedent of corrupt behaviour has been neglected. Nevertheless, the effect of knowledge on attitude and behaviour had been extensively examined in other fields such as environment (e.g. Tilikidou, 2007), breast cancer (Amin et al., 2012) and palliative care (Koffman et al, 2007). Hence, borrowing the findings of those studies, it is reasonable to posit that one possible approach in addressing corruption in the Malaysian public service is to enhance the level of corruption knowledge among its employees. Their knowledge on corruption will alter their attitude towards corrupt activities and later their behaviour (Ajzen et al., 2011). This is consistent with the proposition of the Theory of Planned Behaviour (Ajzen, 1991). One will abhor corruption if he knows such a corrupt activity violates the law of the land and the religion. Hence, the Government has to review their current approach in order to reduce the corruption knowledge deficit among its employees. It is also imperative for the Government to take into consideration the socio-demographic factors in enhancing corruption knowledge among the public servants.
ACKNOWLEDGEMENTS

The authors would like to thank the Economic Planning Unit (EPU) of Malaysia for its financial assistance. This survey research was part of the larger Study on the National Integrity Plan funded by the EPU. We are also indebted to Datuk Dr. Anis Yusal Yussuff, the then President and Chief Executive Officer of the Malaysian Institute of Integrity, for his continuous and tireless supports in ensuring the success of the research. We would also like to express our deepest appreciation to the group of experts who had involved in the development of the questionnaire. Our appreciation also goes to Ms. Rajasegari Krishnan for her translation works. A sincere gratitude also goes to Dato’ Hjh Sutinah Sutan, former Director of MACC, for her invaluable insights and constructive comments. Furthermore, this study would have not been possible without the assistance from Ms. Zarina Mohd. Amin and her team during the data collection process. Last but not least, many thanks go to all who had contributed to the research.
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