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6. Assessment Method for Potential Educational Technology Competency Standard based on TPCK in Malaysian Higher Education Institutions
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Public healthcare in Malaysia is largely financed by the government subsidy. With the increased demand and utilisation of healthcare services, the current financing system is seen as no longer accommodating. To maintain an agenda of universal coverage and equitable healthcare system, the government is currently proposing the implementation of national health insurance (NHI) scheme. To determine public disposition towards NHI implementation, the current study was therefore embarked. A total of 471 questionnaire copies were conveniently distributed to selected adult respondents in Klang Valley, Malaysia. Data analysis performed indicated a strong positive correlation between respondents disposition, measured by subjective norms, and attitude supporting the implementation. Increase in knowledge was also associated with positive attitude towards NHI. Result of regression analysis identified both subjective norms and knowledge contributed to the prediction of the respondents attitude.

**Keywords**: national health insurance, health care financing, attitudes, knowledge
INTRODUCTION

Heavy dependence on healthcare services has caused the healthcare industry to grow sporadically especially in the public healthcare sector. The general lack of knowledge especially in the integrated national health insurance (NHI) to replace current subsidised healthcare services has been met with reluctance, to the extent of refusal to its proposed implementation (Jehu-Appiah et al., 2012). The attitude of both the masses and the politicians of the country that is responsible for the formation of the new healthcare policy is distressing. There is very little support from them (Almualm, Alkaff, Aljunid, & Alsagoff, 2013). The few promotional activities to educate the people of the importance to replace the current system were also noted as the cause for the slow pace of the reform itself. Existing literature shows that Among the factors that form an individual’s attitude are income level, financial resources, education status, gender, age as well as the household size (Adebayo et al., 2015), the purpose of this study is to investigate the effect of knowledge and perception on people’s attitude towards the proposed National Health Insurance implementation in Malaysia.

LITERATURE REVIEW

Several Asian countries have successfully implemented NHI schemes as the primary source of funding to finance health care services. In Taiwan, this scheme is implemented to provide a broader access for the population to health care services (Cheng, 2003). Taiwan’s NHI is a government run, single-payer national health insurance scheme, and financed through a mix of premiums and taxes. It is used as a financing mechanism for both public and private delivery systems that were traditionally financed on fee-for-service basis. Following the inception of NHI, the provision for health services was expended as evidenced by the increase number of outpatient visit and hospital admission that was almost doubled when compared to the year before the NHI was implemented. A similar scheme was also introduced in Korea. Unique to this scheme, it focuses on the benefit coverage for four major conditions, namely cancers, cardiovascular disorders and
cerebrovascular diseases, and rare diseases (Lim, 2013). NHI in Korea provides coverage for individuals with all employment types including those employed in large corporation, small companies and even for those who are self-employed. On the other hand, individuals in low-income groups who could not afford to pay for insurance contribution are also eligible to receive certain benefits through this NHI scheme (Choi et al., 2015).

The implementation of NHI is however not without challenge. The most significant challenge faced by many nations with the same agenda, is related to public acceptance and willingness to participate. Lack of knowledge and education about NHI among population were cited as a barrier in NHI implementation. Knowledge about NHI is important simply because individuals with good knowledge on NHI are expected to be more supportive when compared to those with limited knowledge. A study conducted in Ghana identified low participation rate of NHI was attributable to poor understanding and knowledge regarding the scheme (Manortey et al., 2014). It is thus important to ensure that information given can be understood by the target population. A study conducted by Almualm et al. (2013) found that people will seek the information in order to build consistency with their judgement and perception.

According to the theory of planned behaviour and theory of reasoned action (Ajzen, 1991), norms, beliefs and attitude affect a person’s behaviour. He defined subjective norm as the perceived social pressure to perform or not to perform a behaviour. Precisely, it is an individual’s perception or opinion about what important other’s believe the individual should do or perform in a specific situation. Normative belief constitutes the underlying determinants of subjective norms in the theory of planned behaviour (TPB). Normative belief is classified as an individual’s beliefs about the extent to which other people who are important to them think they should or should not perform particular behaviours (Ajzen, 1991). It is concerned with the likelihood that important referent individuals or groups approve or disapprove of performing a given behavior. Motivation to comply refers to the motivation to do what salient referents think an individual should do. It is an assessment of how important it is to have approval of important others (Ajzen, 1991). It contributes to subjective norms along with normative beliefs. Behavioural belief is determinant by individual attitude. Attitudes lead an individual to do and to belief something. Each individual has different thought and different
ways to solve problems. Behavioural belief can be described as an individual belief of the particular outcome or attribute of performing that behaviour (Glanz et al., 2008). Thus, if people have negative belief about the outcome of a particular action then the outcome of the action will be negative. Theory of planned behaviour indicates that attitudes contribute to the determinants of individual’s behavioural intention towards performing the behavior. Similar to that, previously described in behavioural belief, attitude is determined by the individual’s beliefs about outcomes or attributes of performing the behaviour coupled by evaluations of those outcomes or attributes. For that reason, public who has strong belief that the implementation of national health insurance (NHI) brings good impact on their life will create positive attitude towards the behavior (Glanz et al., 2008).

In regards to NHI implementation, individual’s attitude and acceptance could also hypothetically be influenced by the perceived social pressure. Although no study has been conducted to investigate this association when the literature regarding NHI was examined, a study in the past demonstrated an association between subjective norm and the attitude (Park, 2000).

**METHODOLOGY**

A cross-sectional study was conducted in the area of Klang Valley, Malaysia. The target population of this research study was adults aged 18 years and above. A survey questionnaire was used and adapted from established questionnaires. This questionnaire consists of four sections which include Section A, Section B, Section C and Section D. A 5-point Likert type scale format ranging from strongly disagree to strongly agree (1 to 5) was used to measure feedback from respondents. In Section A, there were six items designed to discover the demographic background of the respondents. In Section B, there were 27 items concerning subjective norms and attitudes. Section C consists of eight items pertaining to the knowledge of national health insurance. Finally, Section D is concerned on support towards national health insurance implementation. Overall, the survey question has four sections with 42 items. A total of 471 questionnaires were completed and valid for data analysis purposes. Both descriptive and inferential statistical
analyses were employed in this present research study. The descriptive statistics included means, frequency and standard deviations. Multivariate analysis was also used to investigate the correlation of the variables in this present research. Data obtained was analysed using the IBM Statistical Package for Social Science Software (SPSS) version 22.0.

RESULTS

Demographic background

A summary characteristics of the respondents’ demographic background are presented in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$n$</th>
<th>%</th>
<th>Variables</th>
<th>$n$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>161</td>
<td>34.2</td>
<td>Single</td>
<td>370</td>
<td>78.6</td>
</tr>
<tr>
<td>Female</td>
<td>310</td>
<td>65.8</td>
<td>Married</td>
<td>101</td>
<td>21.4</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>281</td>
<td>59.7</td>
<td>SPM/STPM</td>
<td>37</td>
<td>7.9</td>
</tr>
<tr>
<td>25-34</td>
<td>140</td>
<td>29.7</td>
<td>Undergraduate</td>
<td>386</td>
<td>82.0</td>
</tr>
<tr>
<td>45-54</td>
<td>28</td>
<td>5.9</td>
<td>Postgraduate</td>
<td>48</td>
<td>10.2</td>
</tr>
<tr>
<td>Above 55</td>
<td>22</td>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>427</td>
<td>90.7</td>
<td>Islam</td>
<td>436</td>
<td>92.6</td>
</tr>
<tr>
<td>Chinese</td>
<td>17</td>
<td>3.6</td>
<td>Christianity</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>Indian</td>
<td>13</td>
<td>2.8</td>
<td>Buddhism</td>
<td>18</td>
<td>3.8</td>
</tr>
<tr>
<td>Bumiputera</td>
<td>14</td>
<td>3.0</td>
<td>Hinduism</td>
<td>11</td>
<td>2.3</td>
</tr>
</tbody>
</table>

The demographic profile of the respondents includes gender, age, race, marital status, educational background and religion. The findings shows that more than half of the respondents were female (65.8%, $n=310$) and 34.2% ($n=161$) were male. Nearly 60% respondents ($n=281$) were aged between 18-24 years old and almost 30% ($n=140$) were aged 25–34 years old. Meanwhile, only 10% ($n=50$) of the respondents were above 45 years old. The majority of the respondents were single (78.6%, $n=370$), while,
21.4% \( (n=101) \) were married. Most of the respondents were Malay (90.7%, \( n=427 \)), followed by the Chinese community (3.6%, \( n=17 \)), Indian (2.8%, \( n=13 \)) and only 3% \( (n=14) \) were Bumiputera. A total of 436 respondents was Muslim (92.6%), 3.8% were Buddhist \( (n=18) \), 2.3% were Hindus \( (n=11) \) and only 1.1% were Christians \( (n=5) \).

In terms of academic background, 82% of respondents were bachelor’s degree holders \( (n=386) \). Ten percent \( (n=48) \) had a master degree qualification. Only eight percent \( (n=37) \) of the respondents obtained an SPM/STPM certificate.

**Knowledge and Perception**

Data results show that the majority of the respondents supported the government’s initiative for the proposed national health insurance to be implemented in Malaysia (Yes, \( n=450, 95.5\% \); No, \( n=21, 4.5\% \)).

Descriptive analysis revealed the highest mean was for the item “I believe that suitable mechanisms might be helpful for encouraging knowledge about National Health Insurance” \([M=3.75, SD=.767]\), indicating most respondents agreed to the statement. The lowest mean score on the other hand, was for the item “I have complete knowledge about national health insurance” \([M=2.78, SD=1.010]\), indicating respondents uncertainty to the statement. Overall, nearly all items of knowledge were rated as uncertain. It thus indicates that majority of respondents has insufficient knowledge concerning the national health insurance. Knowledge plays a positive influence on public support towards national health insurance. The government is now trying to promote the NHI scheme as well as to educate the public to achieve higher support for the proposed NHI. National Health Insurance when implemented in Malaysia can be used to raise funds for health care financing, increase access to health services and achieve the desired health status (Almualm, Alkaff, Aljunid & Alsagoff, 2013).
Knowledge and Perceptions towards the Proposed National Health Insurance Implementation

<table>
<thead>
<tr>
<th>Items</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have complete knowledge about national health insurance</td>
<td>2.78</td>
<td>1.01</td>
</tr>
<tr>
<td>I know that the management of national health insurance is determined by the government</td>
<td>3.37</td>
<td>.874</td>
</tr>
<tr>
<td>I share knowledge about national health insurance with my friends</td>
<td>3.01</td>
<td>.941</td>
</tr>
<tr>
<td>I share knowledge about national health insurance with my family</td>
<td>3.09</td>
<td>1.004</td>
</tr>
<tr>
<td>I believe that suitable mechanisms might be helpful for encouraging knowledge about national health insurance</td>
<td>3.75</td>
<td>.767</td>
</tr>
<tr>
<td>I communicate with individual that handle the national health insurance’s information if I have doubts</td>
<td>3.30</td>
<td>.943</td>
</tr>
<tr>
<td>I communicate with department that handle the national health insurance’s information if I have doubts</td>
<td>3.33</td>
<td>.965</td>
</tr>
<tr>
<td>I believe it is not easy to seek referral from the expert about national health insurance</td>
<td>3.51</td>
<td>.911</td>
</tr>
</tbody>
</table>

$M = \text{mean}, \ SD = \text{standard deviation}$

A bivariate analysis was performed to investigate the relationships between knowledge and subjective norms. As can be seen in the table 3, Pearson correlations of the variables were statistically significant. The data results indicated that there were significant positive correlations between level of knowledge and subjective norms elements of perceptions (NB: $r=.32, p<.01$, MC: $r=.38, p<.01$, BB: $r=.43, p<.01$ and EB: $r=.40, p<.01$). Increases in the level of knowledge were correlated with increases in the level of subjective norms elements; including normative belief, motivation to comply, behavioural belief and evaluation of behavioural, towards the proposed plan of national health insurance implementation.
Table 3: Intercorrelations, Means and Standard Deviations for Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Normative Belief</th>
<th>Motivation to Comply</th>
<th>Behavioral Belief</th>
<th>Evaluation of Behavioural</th>
<th>Knowledge seeking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normative Belief (NB)</td>
<td>3.75</td>
<td>.56</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Comply (MC)</td>
<td>3.57</td>
<td>.56</td>
<td>442**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural Belief (BB)</td>
<td>3.65</td>
<td>.49</td>
<td>.582**</td>
<td>434**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of Behavioural (EB)</td>
<td>3.79</td>
<td>.52</td>
<td>.635**</td>
<td>.421**</td>
<td>.652**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Knowledge seeking</td>
<td>3.27</td>
<td>.66</td>
<td>.316**</td>
<td>.384**</td>
<td>.435**</td>
<td>.401**</td>
<td>1</td>
</tr>
</tbody>
</table>

**p<.01

Based on the data results, relationship effects on normative belief can be an important factor in supporting NHI implementation in Malaysia since people are willing to support NHI scheme if other people believe that NHI could give benefit to their life as well. If a group believed that NHI could replace out-of-pocket payment for health services at the time of use by implementing prepayment health insurance, then they will approve the implementation of NHI (Almualm, Alkaff, Aljunid & Alsagoff, 2013). By embarking into prepaid health services funding system, it is believed that the population may be able to avoid any catastrophic rise of health care expenditure when needed. In implementing NHI in Malaysia, motivation to comply must be considered together with normative belief. For example, if certain referents perceived that NHI can contribute in replacing out-of-pocket fees in health financing policy that leads to burden reduction of household in paying for healthcare as well as in enrolling the NHI (Antwi, Zhao, Boadi & Koranteng, 2014). Conversely other people may refuse to support NHI implementation due to the lack of knowledge in supporting it. Thus, in this situation, people will think of the importance of NHI based on what they think others expect of them for example, if a person believes...
that his parents ask him to support NHI implementation since it gives many benefits to him, he might support the implementation of NHI with the desire and intention that NHI could give him the benefits. Behavioural belief also is one of the important things that must be considered in NHI implementation. Based on the study that has been done by Almualm et al. (2013) at specialist clinics in National University of Malaysia Medical Centre, most respondents have negative perception about the implementation of NHI. They found that 36% of respondents belief that premiums are high while 24% belief that referral is not easy. They also found that 43.4% of respondents have poor knowledge of the scheme and 10.1% of respondents belief that the benefit package of the scheme is limited. These researchers had suggested that the government take actions to make Malaysians aware of the benefits of NHI and to impart sufficient knowledge of NHI scheme to all citizens. These, according to them might change the citizens’ negative thoughts about NHI (Almualm et al., 2013).

A multiple regression was performed to examine if the level of knowledge and subjective norms predicted the level of attitude towards the implementation of the proposed national health insurance. Using the enter method, it was found that the model is significant (F=38.76, p<0.001). The R2 of 0.537 indicates that 53.7% of the variance in the attitude variable can be explained by the elements of knowledge, normative belief and motivation to comply towards the implementation of the proposed plan. Additionally, behavioural belief (Beta=0.37, t(470)=8.95, p<0.01) and knowledge (Beta=0.10, t(470)=2.81, p=0.005) significantly predict the implementation of national health insurance. Normative belief and motivation to comply however have statistically no significant relationship with knowledge (Beta=0.03, t(470)=0.58, p=0.57, Beta=0.36, t(470)=8.97, p=0.101, respectively).

CONCLUSION

The result of the current study highlights a strong correlation between knowledge and subjective norms of respondents towards the implementation of NHI. Similarly, positive subjective norms towards the implementation of NHI was also correlated with the level of knowledge regarding the NHI
itself. Subjective norms and the level of knowledge, when regressed together were statistically significant in predicting the attitude of the respondents towards the NHI implementation with 25% of the variance. Given the large sample size employed in the current study \((n=471)\), researchers have reason to believe the current study had enough statistical power to support the findings. Reviewing the existing literature, the results of the current study showed consistency with research conducted using a TPB framework (Park, 2000, Park et al., 2007); Zhao et al. (2006) and other studies assessing the impact of knowledge on the attitude of the respondents (Borsum & Gjermo, 2004; Reshmi et al., 2012; Birinci & Tumer, 2006). Therefore, more efforts are needed to educate the people about medical insurance and the benefits it contributes to the development of healthcare services. This will then pave the way to the implementation of an integrated national health insurance in Malaysia in the near future.

Limitation of the study was related to the issues regarding the study design. Only two dimensions (instead of three) were taken from TPB/TRA framework. Incomplete dimension have limited the predictive value of TPB/TRA. Psychometric property of the scales used in this study was also not statistically evaluated. Thus, it is recommended for future researchers interested in conducting similar study to perform relevant analysis to ensure the instruments used are psychometrically sound.

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