

**Efficacy of the Theory of Planned Behavior in the Context of Hiring Malaysians with Disabilities: An Empirical Investigation**

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**ABSTRACT**

Employers’ negative attitudes and unfounded concerns about hiring workers with disabilities are some contributing factors to high unemployment rates of the disabled population. Within a modified theory of planned behavior (TPB) framework, this paper is aimed at validating the claim that employer attitudes towards PWDs are significantly relevant as they can either positively or negatively influence intention to hire Malaysians with disabilities. Data were obtained using a survey which garnered the participation of 200 employers in East Malaysia. The modified TPB model was examined using partial least squares (PLS) method and was found to fit the data well. Notably, attitudes mediate the relationships between the independent variables (i.e., subjective norm and perceived behavioral control) and the dependent variable (i.e., intention to hire). The results provide valuable insights which may help increase PWDs’ employment by perhaps addressing negative managerial attitudes towards PWDs. Limitations and suggestions for future research are also discussed.

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**INTRODUCTION**

Employment is important to everyone, and people with disabilities (PWDs) are no exception. Paid work provides us the opportunity to earn an income, forge social relationships, and establish social status (Jameson, 2005). On the contrary, unemployment or poor wages can result in poverty that may in turn restrict social and leisure pursuits (Jongbloed & Crichton, 1990). The phenomena of disability and poverty are said to be dynamic, complex, and intricately linked (Mitra, Posarac, & Vick, 2011); a claim supported by a number of studies. For example, Kaye (1998) found that 38.7% of PWDs who do not work live in poverty compared to 15.1 per cent of those who work at least some of the time. It follows that employment can be an effective long-run measure to empower PWDs to be economically independent and to eventually overcome poverty (Mehta, 2013).

Despite the importance of work to PWDs, a large body of empirical evidence (e.g., Capella, 2003; Hasazi, Johnson, Hasazi, Gordon, & Hull, 1989) shows that the employment rates and advancements of this population leave much to be desired. The existent literature also suggests that PWDs face various employment problems. One major reason lies with non-disabled people’s negative attitudes towards PWDs often rooted in misinformation and a lack of understanding of disability (Copeland, 2007; Easter Seals, 2014; Siperstein, Sugumaran, Bardon, & Parker, 2004) which could subsequently result in discriminatory hiring decisions for PWDs. As posited by Bell and Klein (2001) and Ghai (2001), PWDs are generally viewed as weak, dependent, and incompetent when compared to non-disabled people, and are as such less likely to be hired. Similarly, Siperstein et al. (2004) reported that PWDs are generally excluded from employment because managers tend to see PWDs as incompetent and unproductive, thus forming negative attitudes toward hiring them. The implications are significant when PWDs are denied jobs which they are capable of doing and are qualified for. When managers do not have pro-hiring attitudes toward applicants with disabilities, the rights of this group of workers as well as their quality of life are impeded. Exclusion from employment means PWDs will have minimal or no opportunity at all to be economically independent. As a result, they have little choice but to rely on charity. Malaysians with disabilities are indeed a significant yet untapped pool of labour (Ang, 2012). It has been reported that their unemployment could spell a loss of between USD1.68 to USD2.38 billion to the global gross domestic product for Malaysia (Perry, 2002). Given that, more attention should be given to the factors influencing hiring decisions for PWDs since discriminatory HR practices can be covert, fluid, ambiguous, and subtle like those reported in age-based discrimination studies (Duncan, 2003).

Against this backdrop and on the premise of a modified theory of planned behavior (TPB) framework, this paper has a three-fold objective i.e., to investigate: (1) the influence of subjective norm and perceived behavioral control on attitudes toward hiring Malaysians with disabilities; (2) the influence of attitudes on managerial intention to hire Malaysians with disabilities; and (3) the mediating effect of attitudes on the subjective norm-perceived behavioral control-intention to hire relationships. While not claiming to be comprehensive, this paper is relevant for several reasons. First, the findings will provide useful insights into potential attitudinal barriers to managerial intention to hire PWDs. The knowledge gained can be useful for organization’s managers.
and leaders to execute plans and actions in order to increase PWDs’ participation in the workforce. For instance, by knowing whether or not attitudes impact intention to hire this group of employees organizations can effectively develop plans and take actions to positively influence managerial attitudes towards hiring PWDs.

Second, the themes derived from this study can also be used to help occupational rehabilitation professionals develop educational and marketing interventions to improve managers’ hiring and retaining of PWDs. Third, the paper also hopes to contribute to a growing body of empirical research on Malaysians with disabilities in relation to hiring decisions and employment for PWDs. Disability data on this area are much needed to aid the formulation and implementation of effective public and organizational policies that can better promote and manage the careers of Malaysians with disabilities. Fourth, no known studies in Malaysia have tested the appropriateness of the TPB in understanding managerial intentions to hire Malaysians with disabilities. Finally, the use of partial least squares (PLS) technique offers a more rigorous examination of the proposed model.

The paper is structured in the following manner. The next section presents the literature on employment of PWDs in relation to the research context. This is followed by a discussion on the TPB and the research context. The discussion then delves into the research method and an assessment of goodness of measures (i.e., validity and reliability of the constructs). Subsequent sections are concerned with the data analysis, path analysis, and hypothesis testing, respectively. The final section deals with the implications of the findings and suggestions for future research.

**PWDs AND EMPLOYMENT**

There are over 650 million people in the world who live with a disability (UNESCAP, 2013). Of this figure, about 400 million of them reside in the Asian and Pacific region (UNESCAP, 2013). On the Malaysian front, the registration of PWDs has always been done on a voluntary basis (Jayasooria, 2000). The government has no immediate plans to make it compulsory on the contention that Malaysians with disabilities should be given informed choice (Ng, 2009). As of 2012, a total of 445,006 Malaysians with disabilities were registered with the Social Welfare Department of Malaysia (UNICEF, 2013). Indeed the records show that over the years, there has been a significant rise in the number of Malaysians with disabilities who have come forward to register themselves. The number of registered PWDs is but a conservative estimate and it as such may not reflect the exact size of the disabled population in Malaysia (Ang, 2012).

Wherever they are, PWDs are believed to be among the poorest of the poor in all societies. According to UNESCAP (2013), PWDs in the Asian region in fact constitute some 20% of the poorest people. In a similar vein, a report by British Trades Union Congress (cited in Bagshaw, 2006) stated that PWDs are twice as likely as others to live below the breadline. The report further stated that the appalling incidence of poverty among PWDs is closely linked to their exclusion from education, employment, and other economic and social opportunities. The large discrepancy in labor force participation between the disabled and non-disabled population is empirically supported. At least twice as many PWDs as compared to non-PWDs are found to be unemployed (Bagshaw, 2006; Disability Homepage, 2007; Neufeldt & Albright, 1998; Perry, 2002). However, the recent Labor Force Survey conducted in the U.K. revealed that PWDs are now more likely to be employed than they were in previous years (Marangozov, Glover, Williams, Culliney, Montalt, Jacobsen, & Cassey, 2013). The survey report also indicates that 46.3% of working-age PWDs was employed compared to 76.4% of working-age non-PWDs in 2012 (Marangozov et al., 2013). There is therefore a 30.1% point gap between PWDs and non-disabled people, representing over 2 million people (Marangozov et al., 2013). But the employment levels of PWDs still remain significantly below those of non-disabled people (Kruse & Schur, 2003; RRTC, 2007; Stapleton, Burkhauser, & Houltenville, 2004; Yelin & Trupin, 2003). These low employment rates will contribute to high rates of poverty among PWDs (Ball, Monaco, Schmeling, Schartz, & Blanck, 2006; Hartnette & Blanck, 2003).

Previous research has also disclosed that the unemployment rate for non-disabled population in industrial nations is 10% in comparison with between 40% and 60% for PWDs (Neufeldt & Albright, 1998). In Singapore, for instance, the unemployment rate for PWDs is reported to be as high as 53.3% (Lim & Ng, 2001). The unemployment figures for PWDs in less developed and developing countries could be more alarming. A local daily newspaper in Malaysia reported that hiring of PWDs does not seem to catch on, even with government departments (New Striat Times, 2010). It is thus unsurprising to note that the unemployment rate for Malaysians with disabilities is reported to stand at a staggering 95% (Ministry of Human Resources, 2010). This could be attributed to a multiple of complex factors that are beyond disability alone. One reason could be that PWDs may be in reality lack the education, qualifications, and skills to be considered for employment. Indeed, these are risk factors for PWDs slipping into unemployment or under-employment, and these factors have been substantially researched in past research. Yet, there is another set of factors which has not been explored particularly in the Malaysian context. These factors include attitudinal barriers such as negative expectations of PWDs’ ability to perform, stereotyping, and general negative attitudes towards PWDs held by employers who make hiring decisions in the organizations. These negative attitudes could be due to misinformation and/or a lack of...
understanding of disability among employers that in turn breeds unfounded concerns about hiring PWDs and thus the desire to avoid ‘risky hires’ (Gilbridge, Stensrud, Ehlers, Evan, & Peterson, 2000). A large proportion of Malaysians with disabilities has expressed that they are able and willing to work if given the opportunity (Ministry of Human Resources, 2010; Tuin and Khoo, 2013). Unfortunately, their ability, capability, and enthusiasm to work do not seem to help much in landing the jobs they want (Ang, 2014). Seemingly, a more disconcerting obstacle to the inclusion of Malaysians with disabilities could be in the form of managerial attitudes towards hiring workers with disabilities.

In view of the aforementioned, this paper applied a modified TPB model to conceptualize the relationships between three factors that might influence hiring intentions for Malaysians with disabilities. The factors are—attitudes, subjective norm, and perceived behavioral control.

**THEORY OF PLANNED BEHAVIOR**

In a review of numerous studies examining the relationships between attitude and behavior, Wicker (1969) concluded that attitude may not predict behavior. Since then, social psychologists have attempted to improve the predictive power of attitude. As a result, integrated models of behavior, including additional determinants of behavior such as social norms or intentions (Olson & Zanna, 1993) have been developed. Arguably, the most widely researched of these models are the Theories of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and Planned Behavior (TPB) (Ajzen, 1991).

The theory of Planned Behavior (TPB) is essentially an extension of the TRA that includes measures of control belief and perceived behavioral control. The latter was found to be inadequate in explaining behavior that appeared to be not under complete volitional control (Ajzen, 1991); in other words, not completely voluntary and under control. This resulted in the addition of the new variable known as perceived behavioral control. Hence, the TPB operates on the basis that behavior can be deliberative and planned. This new model thus offers “a comprehensive yet parsimonious theory that identifies a causal structure for explaining a wide range of human behavior” (Morris, Venkatesh, & Ackerman, p. 70, 2005).

According to this theory, the best way to predict behavior is to measure behavioral intention. Behavioral intention is in turn viewed as a function of three conceptually independent variables or belief-based measures (i.e., attitude, subjective norm, and perceived behavioral control). As a general rule, the more favorable the attitude and subjective norm, and the greater the behavioral control over a certain behavior, the stronger would be a person’s intention to perform the behavior in question.

Attitude reflects a person’s evaluation of and beliefs about the significant consequences of performing a behavior. As posited by Cheng, Lam, and Hsu (2006), before deciding to engage in a certain behavior, a person tends to assess the benefits and costs resulting from the behavior. In other words, when a person has positive attitude toward a specific behavior, she is likely to perform the behavior (Ajzen, 1991; Cheng et al., 2006; Han, Hsu, & Sheu, 2010).

The second determinant of behavioral intention is subjective norm which represents the beliefs about the normative norm of significant others (e.g., relatives, close friends, co-workers, or business partners) (Ajzen, 2002). The theory has it that a person’s motivation to engage in a specific behavior will be largely determined by the perceived preferences of her significant referents.

The third independent variable of intention is perceived behavioral control. It is seen as the perceived ease or difficulty in performing a behavior (Ajzen, 1991). Specifically, perceived behavioral control assesses “the perception of how well one can control factors that may facilitate/constrain the actions needed to deal with a specific situation” (Han et al., 2010, p. 604). Interestingly, past studies have reported that when an individual has little control over her act due to the lack or absence of required resources, her behavioral intention will be lowered despite the existence of positive attitude or supportive subjective norm concerning the intended behavior (Han et al., 2010).

**The Efficacy of the TPB and the Research Context**

Because of its relative robustness, it is not surprising that the TPB has garnered much support in numerous areas like psychology, health, sociology, marketing, consumer behavior, and other disciplines of knowledge. Specifically, it has been applied in studies predicting an array of human behaviors in blood donation (e.g., Giles, McClenahan, Cairns, & Mallet, 2004), physical activities (e.g., Hagger, Chatzisarantis, & Biddle, 2001), gambling (e.g., Martin, R. J., Usdan, S., Nelson, S., Umstatt, M. R., LaPlante, D., Perko, M., & Shaffer, 2010), condom use (e.g., Albarracin, Johnson, Fishbein, & Muellerleile, 2001), leisure (e.g., Ajzen & Driver, 1992), diet (e.g., Conner, Kirk, Cade, & Barrett, 2003), obesity (e.g., Liou & Bauer, 2007), green hotel choice (e.g., Han et al., 2010), and more recently academic misconduct intentions (e.g., Stone, Jawahar & Lismore, 2010). A meta-analysis conducted by Armitage and Conner (2001) revealed compelling support for the TPB such that the theory accounted for 27% of the variance in behavior and 39% of the variance in intentions. The current paper represents a preliminary attempt to incorporate the core tenets of the TPB in explaining hiring decisions for Malaysians with disabilities. The question now is, “Why the TPB?”
First, making hiring decisions for PWDs can be a straightforward action and under complete volitional control of the gate-keeping managers with hiring power. Yet, hiring decisions for PWDs may be governed by personal and environmental constraints which may include the absence or lack of hiring policies for PWDs and workplace accommodation for employees with disabilities. Hence, the TPB is deemed appropriate for purposes of this study because the model incorporates a measure of perceived behavioral control which would allow prediction of behaviors that are within or not within volitional control such as hiring PWDs. Clearly, the addition of behavioral control can provide useful information on the perceived personal and environmental barriers to hiring PWDs.

Moreover, the theory presents a useful and meaningful link between managerial attitudes, subjective norm, perceived control, and intention to hire PWDs. And since hiring intention will subsequently lead to the actual hiring of this population, the TPB can lend to more in-depth study and application on the employment of PWDs. In other words, the robustness of the TPB can be further tested in another discipline of knowledge such as Human Resource practices. More importantly, this theory has demonstrated impressive predictive power in explaining intentions and behaviors in both individual and organizational settings (Morris, Vankatesh, & Ackerman, 2005). In several meta-analytic research, the TPB was found to explain about 41% to 50% of the variance in intentions and behaviors (Albarracin et al., 2001), and 28% to 34% of the variance in behaviours (Godin & Kok, 1996). It should be added that Ajzen (1991, p. 188) notes that “the relative importance of attitudes, subjective norm, and perceived behavioral control in the prediction of intention is expected to vary across behaviors and situations.”

For purposes of this paper, the intention to hire PWDs construct is the manager’s plan to hire or not to hire PWDs. The attitudes construct is the manager’s evaluation regarding hiring PWDs in the workplace. The subjective norm variable is the social pressures put on the manager which can influence her attitudes towards hiring PWDs. The perceived behavioral control construct is the manager’s perceived ease or difficulty in hiring PWS. The next section will present the proposed research model to depict the linkages between these constructs within the modified TPB framework.

THE PROPOSED MODEL
Figure 1 is a schematic representation of the research model. The theoretical basis for the proposed model is the TPB which is assumed to justify the indicated path linkages. To elaborate, the criterion variable is managerial intention to hire Malaysians with disabilities. The factor that may influence intention to hire Malaysians with disabilities constitutes the predictor variable. While past research typically considers the components of attitude, subjective norm, and perceived behavioral control as predictors of intention, the original TPB model is modified in this paper such that the constructs of subjective norm and perceived behavioral are now seen as direct antecedents of attitudes which will in turn influence intention to hire Malaysians with disabilities. Although these constructs may have direct effects on intention to hire, it is believed that the effects may not be immediate but gradually develop over a period of time to impact attitudes which will subsequently spark the desire to hire Malaysians with disabilities.

Accordingly, the modified TPB model depicts attitudes as the mediator in the relationships between the independent variables and intention to hire. It should be noted that since no known research has examined the direct link between subjective norm, behavior control, and attitudes toward hiring PWDs, references have to be made to literature on disability and other disadvantaged and/or stigmatized groups (e.g., McKay, Avery, & Morris, 2008; Olkin & Howson, 1994; Stone & Colella, 1996; Strohmer, Grand, & Purcell, 1984; Yuker, 1988).

FIGURE 1. MODIFIED TPB RESEARCH MODEL

The Influence of Subjective Norm on Attitude
Subjective norm represents the influence and beliefs of people in an individual’s social environment, weighted by the importance attributed to each of their opinions. This construct has been extensively considered in many of the models including and Ajzen and Fishbein’s (1980) TRA and Ajzen’s (1991) TPB. These models traditionally
position subjective norm as an antecedent of behavioral intentions. The TPB model is modified in this paper such that the subjective norm construct is examined as a direct antecedent of attitude which will in turn influence hiring intentions for PWDs. In this paper, subjective norm refers to the social pressures which can directly influence a manager’s attitude towards hiring PWDs in the workplace.

The influence of subjective norm on an individual’s attitude towards a behavior is believed to be prevalent among members of collectivistic societies like Malaysia. In collectivistic societies, the social mores and norms largely dictate how a member thinks, behaves, and lives (Asma, 1984). It is hence reasonable to hypothesize that when an employer perceives that hiring PWDs is a proper behavior as defined by social norms, her motivation to comply will increase; resulting in the formation of favorable attitudes towards PWDs and hiring them. The reverse would be true if the social norm is against hiring PWDs. Thus:

**H1: Subjective norm has a direct positive effect on attitudes toward hiring Malaysians with disabilities.**

The Influence of Perceived Behavioral Control on Attitudes

Perceived behavioral control is used to deal with situations where people do not have complete volitional control over the particular behaviour been examined. Alcohol consumption is a suitable example of a behavior that is not completely under control of an individual (Wolfe & Higgins, 2008). That being said, the initial decision to engage in alcohol consumption is often under a person’s complete control but sometimes in the case of alcoholism, the behavior is no longer under complete volition of the individual (Wolfe & Higgins, 2008). Some studies (e.g., Conner & McMillan, 1999; Courneya, Bobick, & Schinke, 1999; Sheeran & Orbell, 2000) have found that perceived behavioral control is the only component in the TPB which can directly influence the performance of a behavior without intention.

Accordingly, this paper refers to the construct of perceived behavioral control as an employer’s perception of whether the behavior in hiring PWDs is or is not within her control. In recent years, discriminatory hiring of PWDs in Malaysia is kept in check by the Persons with Disabilities Act (2008). The mandate has been given to both public and private organizations to ensure that at least 1% of the workforce constitutes PWDs. It is believed that given the legislative policy to increase the employment of PWDs, managers are now empowered to give jobs to more Malaysians with disabilities. Ajzen (2002) argues that having a sufficient degree of actual control over one’s behavior would allow the person to carry out her intention as and when the opportunity arises. Following this argument, if an employer perceives that hiring decisions for PWDs is completely under her control, her attitudes towards hiring PWDs will be most likely to be positive. However, when the manager perceives to have a lack of complete control over hiring decisions for PWDs, her attitudes toward hiring PWDs will be negatively affected. Thus, we proposed that:

**H2: Perceived behavioral control in hiring PWDs has a direct positive effect on attitudes toward hiring Malaysians with disabilities.**

The Influence of Attitude on Intention to Hire

In the original TPB model, the three core tenets of attitudes, subjective norm, and perceived behavioral are assumed to influence behavioral intentions on their own. This paper proposes that the effects of subjective norm and behavioral control on managerial hiring intentions for PWDs may also reside in managerial attitudes. There is a general consensus that the barriers PWDs face generally begin with non-disabled people’s attitudes towards them (Easter Seal, 2014). Hence, instead of only viewing behavioral intention as a function of three conceptually independent variables or belief-based measures (i.e., attitudes, subjective norm, and perceived behavioral control), the TPB model for this study is modified to reflect the attitudes construct as a possible antecedent of hiring intention as well as a mediator in the independent variable-intention links.

There is a great amount of theoretical and empirical support for the direct influence of attitudes on intention. For instance, Ajzen (1991) and Kim and Hunter (1993) reported that attitudes influence intention, while in turn, intentions predict behavior. Another study (Zanten, 2005) similarly established the strong correlation between attitudes and intention. Existing research on one disadvantaged group, i.e., older workers, has also shown that managers’ negative expectations concerning older workers’ productivity can impact HR practices (Cheng, 2007; Huang, 2007; Lu, Kao, & Hsieh, 2011). These findings are consistent with Ajzen’s (2006) viewpoint such that the more favorable the attitude, the stronger would be the intention to perform the behavior in question. On the basis of the above discussion, it is plausible to argue that the more favorable an employer’s attitudes toward hiring Malaysians with disabilities, the stronger will be her intention to hire them. In other words, the employer must first have a favorable attitude toward hiring PWDs before this attitude can translate to intention to hire PWDs. Simply put, it is expected that having a favorable attitude toward hiring PWDs will increase an employer’s intention to hire PWDs. Conversely, an unfavourable attitude toward hiring a person with disabilities can negatively influence intention to hire PWDs in the workplace.

The attitude construct can also possibly mediate the relationships between subjective norm, perceived behavioral control, and intention to hire PWDs. In a study on consumer organic-food purchasing by Tarkiainen and Sundqvist (2005), it was found that the role of subjective norms differs from the original theory of TPB such
that it indirectly influenced buying intention through attitude formation. The study also revealed that about 56% of the variance in consumer intentions to buy organic food is accounted for by their attitudes. Similarly, Dunn, Eddy, Wang, Nagy, Perko, and Bartee (2001) reported that attitudes are a better predictor of intentions to use dietary supplements than were subjective norms. Other studies offer similar insights. For instance, Yordy and Lent (1993) found that attitudes were a better predictor of exercise intentions and behaviors. Wankel, Mummary, Stephens, and Cora (1994) reported similar results. Kautz and Pries-Heje (1996) found that both subjective norms and perceived behavioral control have indirect effects on behavioural intentions. In view of the above, it is logical to assume that the effects of subjective norm and perceived behavioral control on intentions will be indirect through attitude formation. We thus advance the following hypotheses:

H3: Attitudes toward hiring PWDs have a direct positive effect on intention to hire Malaysians with disabilities.
H4: The impact of subjective norm on intention to hire Malaysians with disabilities is mediated by attitudes.
H5: The impact of perceived behavioral control on intention to hire Malaysians with disabilities is mediated by attitudes.

METHODOLOGY
A survey questionnaire was used to collect data for this study. The questionnaire was comprised of Likert-scaled items measuring attitudes, subjective norm, perceived behavioral control, and intention. These items were reworded for purposes of the study. Table 1 provides example items for the measures employed and the sources from which they were taken. Additionally, the questionnaire included other items to obtain demographic information of the respondents such as age, gender, ethnicity, position, tenure, and disability status. It should be noted that the survey also provided a definition of PWDs so as to ensure responses were provided within a common frame of reference.

This study targeted non-disabled employers representing private organizations in East Malaysia (Sabah and Labuan). We used the Employer Directory 2010 published by the Ministry of Human Resources of Malaysia to select the respondents. The respondents might or might not have employed workers with disabilities in their companies at the time of the research. However, the respondents must be responsible for the hiring of employees in their companies.

Prior to data collection, we made phone calls to obtain consent to visit the companies. We then made personal visits to the participating organizations located in Labuan, Kota Kinabalu, Tawau, Sandakan, and Lahad Datu. Between July and September 2013, 300 survey questionnaires were distributed using the drop-and-collect survey method (Walker, 1976). A cover letter accompanying the survey explained the study's objectives as well as assured respondents of their anonymity in an attempt to facilitate candour. After 2 to 3 weeks, we returned to the companies again to collect the completed questionnaires. Overall, we received 200 usable questionnaires, yielding a 67% response rate.

Of the 200 respondents, 54% were females and 46% were males. Chinese employers (114 or 57%) were the majority in the sample, followed by Bumiputera (indigenous group) Sabah (40 or 20%), Malay (29 or 14.5%), Other (10 or 5%), Indian (4 or 2%) and Bumiputra Sarawak (3 or 1.5%). The respondents were mostly running real estate/renting/service business (42 or 21%). A little over half of the companies (104 or 52%) were small-sized enterprises that have only 10 and below employees. Additionally, 52 (26%) respondents reported that they were owners of the business.

The next section details how the partial least squares (PLS) technique is employed to perform the data analysis, path analysis, and hypothesis testing.

DATA ANALYSIS AND RESULTS
Developed by Wold (1982), PLS is a second generation of structural equation modelling (SEM) technique. Compared to other SEM approaches, PLS was a more fitting statistical tool for this research in four aspects. First,
this technique works well with complex predictive models that have latent variables and a series of cause-and-effect relationships (Gustafsson & Johnson, 2004). It can also simultaneously test the measurement model and the structural model (Barclay, Thompson & Higgins, 1995; Hulland, 1999). Second, non-normal distributions in most social sciences and behavioral studies are typical phenomena. Since PLS employs bootstrapping to examine the significance of relationships, it does not rely on normality assumptions. Hence, non-normality is no longer an issue to be contend with.

Third, PLS accounts for measurement error and should perform well in testing the mediation effects (Chin, 1998). Mediation effects are the product of two relationships; between the independent variable and the mediator, and between the mediator and the independent variable (Bontis, Booker, & Serenko, 2007). The product of two normally distributed variables is generally skewed (Bollen & Stine, 1990, Bontis et al., 2007; Lockwood & Mackinnon, 1998, cited in Bontis et al., 2007) but again this is not a concern as PLS does not require non-normality assumptions.

In sum, PLS was employed to assess the psychometric properties of the measurement model and estimates of the structural model. To elaborate, using PLS-graph, we first analyzed the validity of the model’s constructs (i.e., measurement model), and we then tested the relationships between the constructs (i.e., the structural model). The measurement model for construct validity demonstrates how well the measurement items relate to the constructs. The convergent and discriminant validity of all constructs were also examined. Finally, for the purpose of hypothesis testing, we analyzed all path linkages in the research model.

**The Measurement Model**

To assess convergent validity, we used 3 tests namely average variance extracted (AVE), composite reliability, and alpha values. Tables 2 and 3 have the results. Table 2 shows that the AVE values exceeded the recommended value of 0.5 (Fornell & Larcker, 1981), demonstrating adequate convergent validity. Similarly, composite reliability values indicated that all constructs were well above the recommended value of 0.70 (Hair, Black, Babin, & Anderson, 2010). Cronbach’s alpha values for all constructs also met the minimum threshold of 0.60, suggesting that the constructs were acceptable.

**TABLE 2. RELIABILITY AND CONVERGENT VALIDITY**

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>R-Square</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT</td>
<td>0.57</td>
<td>0.84</td>
<td>0.33</td>
<td>0.75</td>
</tr>
<tr>
<td>SN</td>
<td>0.56</td>
<td>0.84</td>
<td>-</td>
<td>0.81</td>
</tr>
<tr>
<td>PBC</td>
<td>0.67</td>
<td>0.80</td>
<td>-</td>
<td>0.65</td>
</tr>
<tr>
<td>ITH</td>
<td>0.72</td>
<td>0.89</td>
<td>0.19</td>
<td>0.74</td>
</tr>
</tbody>
</table>

*Note: ATT=Attitudes; SN=Subjective norm; PCB=Perceived behavioral control; ITH=Intention to hire.*

Table 3 shows that all items exhibited high loadings (in the range of 0.70 to 0.94) on the constructs they were measured, whilst no items loaded higher on constructs they were not intended to measure (Golicic, Fugate, & Davis, 2012). The results confirmed convergent validity of the constructs. All items were therefore deemed valid in measuring the constructs they were supposed to measure.

**TABLE 3. FACTOR LOADINGS AND CROSS-LOADINGS**

<table>
<thead>
<tr>
<th>Item</th>
<th>ATT</th>
<th>ITH</th>
<th>PBC</th>
<th>SN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT1</td>
<td>0.80</td>
<td>0.37</td>
<td>0.28</td>
<td>0.53</td>
</tr>
<tr>
<td>ATT2</td>
<td>0.74</td>
<td>0.23</td>
<td>0.20</td>
<td>0.31</td>
</tr>
<tr>
<td>ATT3</td>
<td>0.71</td>
<td>0.38</td>
<td>0.21</td>
<td>0.47</td>
</tr>
<tr>
<td>ATT4</td>
<td>0.77</td>
<td>0.30</td>
<td>0.17</td>
<td>0.33</td>
</tr>
<tr>
<td>ITH1</td>
<td>0.35</td>
<td>0.87</td>
<td>0.41</td>
<td>0.58</td>
</tr>
<tr>
<td>ITH2</td>
<td>0.35</td>
<td>0.81</td>
<td>0.41</td>
<td>0.49</td>
</tr>
<tr>
<td>ITH3</td>
<td>0.42</td>
<td>0.87</td>
<td>0.30</td>
<td>0.63</td>
</tr>
<tr>
<td>PBC2</td>
<td>0.30</td>
<td>0.39</td>
<td>0.94</td>
<td>0.31</td>
</tr>
<tr>
<td>PBC4</td>
<td>0.14</td>
<td>0.33</td>
<td>0.71</td>
<td>0.31</td>
</tr>
<tr>
<td>SN1</td>
<td>0.41</td>
<td>0.46</td>
<td>0.24</td>
<td>0.79</td>
</tr>
<tr>
<td>SN2</td>
<td>0.49</td>
<td>0.58</td>
<td>0.33</td>
<td>0.79</td>
</tr>
<tr>
<td>SN3</td>
<td>0.35</td>
<td>0.47</td>
<td>0.20</td>
<td>0.72</td>
</tr>
<tr>
<td>SN6</td>
<td>0.44</td>
<td>0.48</td>
<td>0.30</td>
<td>0.70</td>
</tr>
</tbody>
</table>

*Note: ATT=Attitudes; SN=Subjective norm; PCB=Perceived behavioral control; ITH=Intention to hire.*

To examine discriminant validity, we adopted the guideline suggested by Fornell and Larcker (1981) *i.e.*, the square root of the AVE from the construct should be greater than the correlations shared between that constructs and others in the model. Table 4 compares the correlations among the constructs with the square root of the AVE.
(which appear diagonally in the table). The values of the square root of the AVE were found to be greater than the inter-construct correlations. Further, the values were greater than the recommended value of 0.707 (Lee and Kozar, 2008). We conclude therefore that all constructs exhibited acceptable discriminant validity.

### TABLE 4. RELIABILITY AND CONVERGENT VALIDITY

<table>
<thead>
<tr>
<th>Construct</th>
<th>ATT</th>
<th>ITH</th>
<th>PBC</th>
<th>SN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITH</td>
<td>0.44</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>0.29</td>
<td>0.43</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td>0.57</td>
<td>0.67</td>
<td>0.36</td>
<td>0.75</td>
</tr>
</tbody>
</table>

*Note: ATT=Attitudes; SN=Subjective norm; PCB=Perceived behavioral control; ITH=Intention to hire.*

### Table 5. Path Coefficients and Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Causal path</th>
<th>Std Beta</th>
<th>Std Error</th>
<th>t-value</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>SN → ATT</td>
<td>0.53</td>
<td>0.05</td>
<td>5.42**</td>
<td>Yes</td>
</tr>
<tr>
<td>H2</td>
<td>PCB → ATT</td>
<td>0.18</td>
<td>0.06</td>
<td>3.52**</td>
<td>Yes</td>
</tr>
<tr>
<td>H3</td>
<td>ATT → ITH</td>
<td>0.44</td>
<td>0.06</td>
<td>9.14***</td>
<td>Yes</td>
</tr>
<tr>
<td>H4</td>
<td>SN → ATT → ITH</td>
<td>0.23</td>
<td>0.04</td>
<td>5.87***</td>
<td>Yes</td>
</tr>
<tr>
<td>H5</td>
<td>PCB → ATT → ITH</td>
<td>0.08</td>
<td>0.03</td>
<td>2.60*</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Note:* p<0.05; **p<0.01; ATT=Attitudes; SN=Subjective norm; PCB=Perceived behavioral control; ITH=Intention to hire.

To test the indirect effect, we employed Preacher and Hayes’ (2004, 2008) bootstrapping method. First, we tested the indirect effect of subjective norm on intention to hire. The bootstrapping analysis reveals that the indirect effect (B=0.53*0.44=0.23) was significant with a t-value of 5.87. Following Preacher and Hayes’ (2008) guidelines, we also confirm there is mediation given that the indirect effect = 0.23, 95% Boot CI: [LL=0.15, UL=0.31] does not straddle a 0 in between. Based on the above results, we can conclude that the mediation effect of attitudes on the relationship between subjective norm and intention to hire is statistically significantly. Hence, H4 is supported.

We repeated the same procedures to examine the indirect effect of perceived behavioral control on intention to hire. With a t-value of 2.60, the indirect effect (B=0.18*0.44=0.08), 95% Boot CI: [LL=0.02, UL=0.14] was significant and does not straddle a 0 in the interval, thus indicating a mediation effect. We can similarly surmise that attitudes significantly mediate the relationship between perceived behavioral control and intention to hire. It follows that we cannot reject H5.

### FIGURE 2. ANALYZED RESEARCH MODEL
DISCUSSION

Past studies on disadvantaged groups have consistently shown that negative attitudes tend to lead to many aspects of discrimination including hiring, training, promotion, and retention policies. It is thus reasonable to surmise that managers’ attitudes toward PWDs can similarly influence their intention to hire job applicants with disabilities. Within a modified TPB framework, this paper began with the purpose of investigating the role of two independent variables (i.e., subjective norm and perceived behavioral control) in predicting attitudes towards hiring Malaysians with disabilities. Additionally, the mediating effect of attitudes on the relationships between the two independent variables and intention to hire PWDs was also investigated. By employing the PLS technique, we first tested the validity and reliability of the 4 measures in the proposed model. The results confirm both convergent and discriminant validity of the measures. An examination of the alpha and composite reliability values indicates that the measures are also reliable.

We then proceeded to conduct the path analysis to test the formulated hypotheses. We found that the data validated all the hypothesized relationships. The findings generally corroborate with those of other TPB studies (albeit different domains) (e.g., Kautz & Pries-Heje, 1996; Tarkiainen & Sundqvist, 2005). To elaborate, subjective norm has a positive effect on managerial attitudes toward hiring Malaysians with disabilities. The perceived behavioral control construct was similarly found to positively influence managerial attitudes. This finding supports Ajzen’s (1991) assumption, in that when people believe that they have control over their behavior they will have stronger intention to perform the behavior in question, and are such more likely to do it. At this point, it would be worthwhile to compare the findings of this study with those of Armitage and Conner (2001). In a review of 185 independent studies using the TPB, Armitage and Conner (2001) concluded that perceived behavioral control generally influenced behavioral intentions and behaviors, accounting for 39% of the variance in the TPB model. Whereas the subjective norm construct was found to be a weaker predictor of intention. On the contrary, this study found that in comparison to perceived behavioral control, subjective norm appears to be the stronger predictor of managerial attitudes toward hiring Malaysians with disabilities. It is thus logical to conclude that in the case of influencing attitudes within the context of hiring Malaysians with disabilities, subjective norm demonstrates stronger predictive power than does behavioral control. Interestingly, this implies that the collectivistic values and social norms of Malaysians are more likely to dictate attitudes towards hiring PWDs, than do managers’ own perceived behavioral control.

This study also established a positive and significant link between managerial attitudes and their hiring intentions for Malaysians with disabilities, suggesting that the more favorable the attitudes, the stronger the intentions to hire PWDs. The mediation effect of attitudes was also found. Collectively, the study findings offer valuable insights for theory. First, the findings confirm the proposition that the effects of subjective norm and perceived behavioral control in terms of hiring PWDs may reside in managerial attitudes which will subsequently spark off intention to hire PWDs. The modified TPB model thus appears to fit the data marginally better than the original model, implying that in the context of hiring decisions for Malaysians with disabilities, the roles of subjective norm and perceived behavioral control differ from the original TPB. Simply put, subjective norms and perceived behavioral control affect hiring intention indirectly through attitude formation. As such, hiring decisions for Malaysians with disabilities can be deemed normatively controlled (Kautz & Pries-Heje, 1996). The second theoretical contribution of this study will be that researchers will have gained more information on the mediating role of attitudes in the context of hiring decisions for PWDs, suggesting that a further examination of an augmented version of the TPB is worthwhile.

The results also lend to several practical implications. First, the formation of pro-hiring attitudes towards PWDs could be pertinently important in enhancing the employment of PWDs in Malaysia. The question now is, “How do we shape positive managerial attitudes towards hiring PWDs?” Suggestions include providing intervention education/training, fostering and sustaining collaboration with occupational rehabilitation personnel, and increasing contact with PWDs so as to dispel unfounded concerns among managers in terms of hiring PWDs. Occupational rehabilitation professionals can also work closely with hiring managers and/or human resource personnel from the point of hiring to placement of employees with disabilities. Continuous and close monitoring
of the performance and well-being of the PWDs in the workplace is also important to ensure that PWDs do not only get employed but can also sustain their jobs in the long-run.

Second, subjective norm which supports the practice of hiring PWDs can be seen as an attitude-shaping mechanism. To that end, the Malaysian government has a significant role in educating the general public about disability and PWDs. And since the perceptions and beliefs of the society can significantly influence managerial attitudes towards hiring PWDs, increased Malaysians’ general awareness and belief of the benefits of offering jobs to PWDs is highly instrumental to change the mindsets of managers who make hiring decisions in their organizations.

With respect to the influence of perceived behavioral control on attitudes towards hiring PWDs, top management should empower gate-keeping managers with hiring responsibilities through the provision of adequate resources, workplace accommodation, and discretion in hiring PWDs. Additionally, potential barriers such as organizational policies which can interfere with hiring intention for PWDs should be minimized if not removed. With increased behavioral control that comes with these positive changes, managers are most likely to form pro-hiring attitudes which will eventually increase their hiring intentions for PWDs. It is important to note that whether these positive attitudes can eventually translate to increased intention to hire PWDs is dependent upon the managers themselves to activate this link. This again emphasizes the pertinence of forming pro-hiring attitudes first which will eventually impact hiring intentions, and subsequently actual hiring of PWDs. In sum, from a policy point of view, the study helps Malaysian organizations and the government to have a better understanding of managerial intentions to hire PWDs and be better able to develop action plans and policies to enhance this behavioral intention.

CONCLUSION AND FUTURE RESEARCH
A modified model of the TPB served as the theoretical foundation of the current paper which aimed at exploring hiring intentions for PWDs. We employed PLS statistical method to analyze the roles of 3 constructs namely subjective norm, perceived behavioral control, and attitudes in influencing managerial intention to hire Malaysians with disabilities. As expected, all the linkages demonstrated positive relationships. Taken together, the findings suggest that the proposed modified model of TPB was well supported by the data. On the basis of the findings, the study has significance for theory, empirical research, and policy. More importantly, it points to the importance and urgency of a concerted research effort to inform public and organizational policies that can better promote and manage the careers of Malaysians with disabilities.

That being said, we should assess the generalizability of the findings with caution given that this is a cross-sectional research. Hence, longitudinal and experimental studies may provide further support to the results. Similarly, the findings cannot be generalized to the whole of Malaysia as the study was confined to only employers in East Malaysia. As such, future research should replicate this study using a larger sample from a wider geographical area so as to establish findings of a greater degree of accuracy and generalizability.

The obstacles that PWDs face are multi-dimensional, and include not only disability but also a host of other attitudinal, environmental, and demographic factors. For these reasons alone, future research should also examine an augmented version of the TPB model which may include these factors in the face of barriers relating to hiring PWDs. For instance, self-efficacy is one internal aspect of control that may interfere with intention instead of perceived behavioral control that reflects the potential external barrier (Hagger et al., 2001). Additionally, attitudes of co-workers, attributes of employers, previous contact with PWDs, and legislation are worthy of future investigations.

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