

## Interaction model of TPB; Suicide Intent and Its Possible Determinants

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### Abstract

The interaction model of behavior integrated various variables in one structured model. Yet the purpose of this study is to explore and support the model fit in explaining the possible determinants of suicide intent. This study adopts the theory of planned behavior as the basis and integrated the suicide intent model. This pilot test finding involved 35 participants and partial least square structural equation modeling (PLS-SEM) was used to analyze the data. All the determinants of suicide intent exert a significant on suicide intent behavior, while subjective norm has no significant influence on suicide intent. Implications in the context of suicide behavior and recommendations to increase the attention on this suicide intent area are discussed. Through the feasibility study from the same niche of research in previous paper published on Widad FAROKAM & WPD in the context of Malaysian users, this Widad FAROKAM expected to be execute the comprehensive structured model in decreasing the suicide intent through users' trait, digitalize and ludification.

**Keywords:** *theory of planned behavior, suicide intent, behavior, psychology*

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## 1. INTRODUCTION

Study from the same niche of research in previous paper published on Widad FAROKAM expected to be utilize the comprehensive structured model in decreasing the suicide intent. The intention to suicide may results by others through certain traits observed and being learnt. Before taking any actions to regulate or induce the suicide intent it is important to scientifically discussed what factors drive respondents to aware about their sign of suicide behavior intention. To grip the gap, this study attempts to explore the determinants of suicide intent among target sample (pilot study). Theory of planned behavior model (TPB) has been selected as the basic theoretical model in the current research. TPB, introduced by Ajzen in 1991, is an impactful theory to explain individual's behavior (Song et al., 2017;

Ajzen, 1991). Given the specific research context and background, other variables has been integrated within the TPB to better explain individual behavior (Ibrahim et al., 2021; Saharudin, et al., 2020). Current research shown people concern on suicide behavior factors such as traits and other three determinants (were discussed in another working publication) have been considered and added into TPB to develop a comprehensive theoretical model to understand peoples suicide behavior.

## 2. LITERATURE REVIEW

### 2.1 Theory of planned behavior

Suiciding is a behavior which correspond to the inner thought, conflict and occupying area knowledge as maximizes as people can. Internal factor and external factor which represents the perceived behavioral control (PBC), attitude and social norm (SN) in TPB shown the intention connecting the possible factors that will lead to suiciding behavior (Brenes et al., 2023; Bullman et al., 2023; Verma et al., 2022; Ibrahim et al., 2021). TPB theory emphasized three main determinants in arguing the intention and future behavior of human. These certain determinants exhibit their measurable and perceived characteristics which are attitudes, subjective norms (SN) and perceived behavioral control (PBC) (Ajzen, 2020). This study aims to expand the idea of proofing the selective factors which possibility increased the behavior of suiciding.

Many studies had been done in psychological field and TPB is considered as one of the most robust in explaining the intention of individual behavior (Harun et al., 2022). In the current research context, peoples with positive attitudes towards suicide, perceive those friends and relative around them expecting them to decrease the behavior. A higher subjective norm may indicate a higher likelihood of engaging in such activity. Perceived behavioral control refers to "the controllability of conducting a certain behavior through gaming or addicted instruction"(Low et al., 2022).

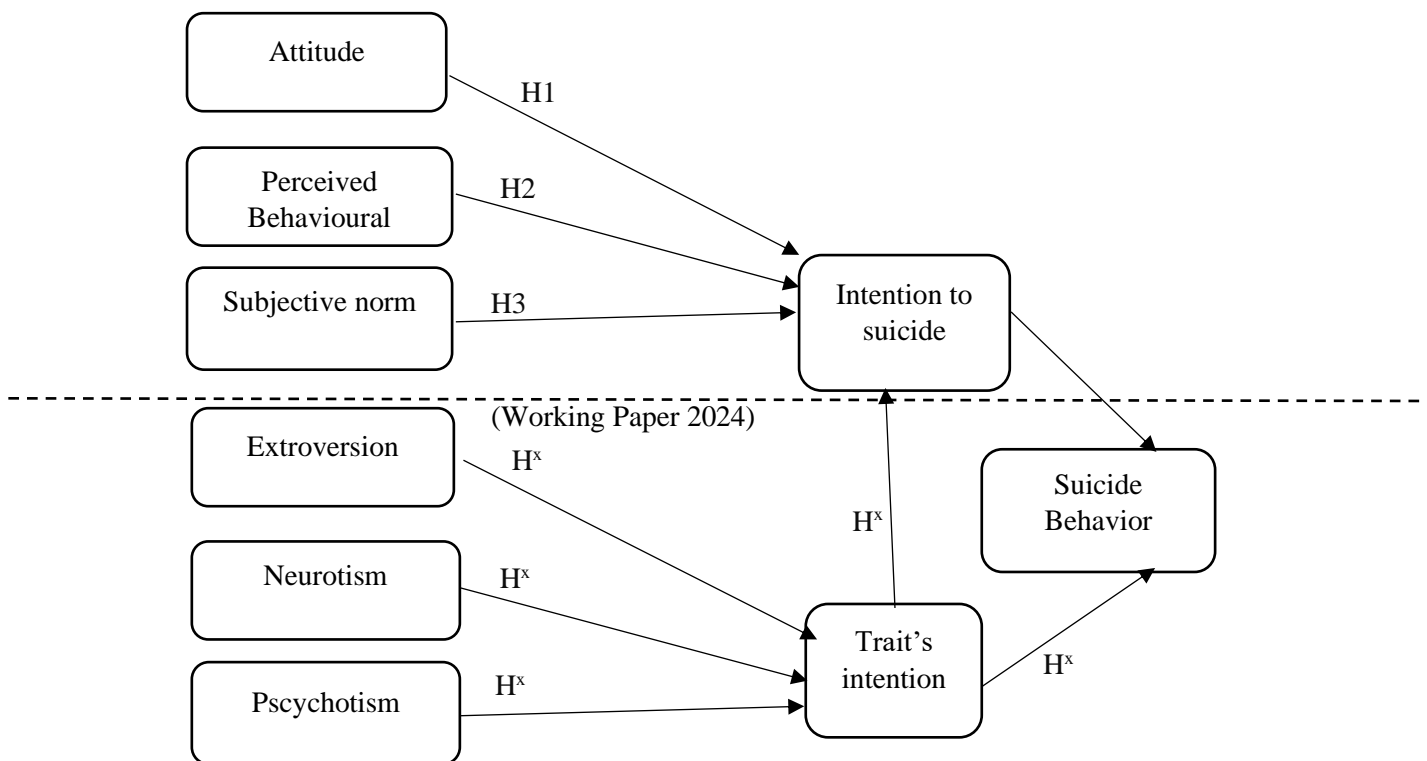
In understanding people intention of suicide, this study also posits that the TPB can be strengthen by incorporating trait factor to improve the understanding of the behavior. In the future study, trait determinants of the PEN model were integrated into the model to enrich our understanding of people's intention to suicide (are discuss in another working publication). The following 3 hypotheses are presented.

## 2.2 Hypothesis Development

Attitude ( $H^1$ ) explain why certain peoples tend to use the inner perspectives that drives intention (Kim et al., 2023). The attitude derived from the belief which is also directed by past experiences. Beliefs of an individual guide the future behavior. The processes defining the attitude can be explaining by the belief concept.

PBC ( $H^2$ ) is a crucial factor towards behavioral intention. In predicting the intention, perceived behaviour control and the other relevant variables will explore more in this behavioural intention. By extending from the TPB, this study tends to examine factors influencing suicidal behavior. Relevancies of all past TPB model research, the attitudes of individual predictably being the main factors of decisions. The major contribution of the perceived behavior control, as it defined individual perception in ease performing the expected behaviour (Lee et al., 2023; Goldman et al., 2014).

Subjective norms ( $H^3$ ) refer to the belief that an important person or group of people will approve and support a particular behavior (Walther et al., 2023; Wang, 2020). Subjective norms are determined by the perceived social pressure from others for an individual to behave in a certain manner (Lee et al., 2023) and their motivation to comply with other perception on them (Paul et al., 2018). Social pressure rises from cultural differences. The opinions from family members and friends are considered as the most signifiant subjective norm in one's decision making (Wee al., 2020; Rajae et al., 2019). The following figure 1 present the research model adapted in this study and promotes future study.



**Figure 1** Research model

### 3. METHODOLOGY

#### 3.1 Data collection (Pilot study)

Data was collected via an online questionnaire survey. The respondents were Malaysian ranging from 16 to 55 years old. The researchers circulated the questionnaire based on the quota range. We received 35 responses finalized after data screening and cleaning. Table 1 present the respondents demographic information.

**Table 1.** Demographic profile of participants

	Number	Percentage (%)
Gender		
1. Male	14	40
2. Female	21	60
Age		
1. 16-20	2	5.7
2. 21-25	10	28.5
3. 26-30	11	31.4
4. 31-35	5	14.3
5. 36-40	1	2.9
6. 41-45	3	8.6
7. 46-50	2	5.7
8. 51-55	1	2.9

Table 1 shows that 60.0% of the participants were female, with majority of them being between 21 and 35 years old (74.0 percent). The majority of participants are younger adolescent and almost half of the respondents' reside in Kuala Lumpur city.

### 4. DATA ANALYSIS AND RESULTS

The data analysis is based on the two stage PLS-SEM using SmartPLS 3. The first stage evaluates the measurement model by investigating the reliability and discriminant validity of constructs. The second level is to assess the structural model by testing the proposed hypotheses through variables' path coefficient and statistical significance. The PLS-SEM approach is really useful to employ in this study as its ability to work with complex models with many indicator variables and exogenous and endogenous constructs, non-normal data distributions (Hair et al., 2014). Besides, the PLS -SEM can assist the researcher who conducts exploratory research in developing theory, with its ability in estimating the model that commonly displays a high degree of statistical power compared to the CB-SEM method (Henseler et al., 2015). Thus, PLS-SEM can determine the most successful variable in understanding suicide intent in this study.

#### 4.1. Measurement model

The measurement model is the first stage of using the PLS-SEM that specifies the construct's internal consistency reliability, convergent validity, and discriminant validity. The reliability of the constructs was measured through Cronbach's alpha and composite reliability. A considerable threshold for the reliability should be more than 0.60 for exploratory research (Hair et al., 2019). Table 4 shows that the range of the Cronbach alpha (0.763-0.862) denoting strong internal consistency reliability tested in this study. Convergent validity is assessed through the indicator loadings and average variance extracted (AVE). The current study established the convergent validity as the indicator loadings passed the threshold value of 0.60 and the AVE more than 0.50, ranging from 0.813-0.828 (Hair et al., 2016). The measurement would be acceptable if the AVE for each construct is greater than 0.50. Thus, the results of indicator loadings, Average Variance Extracted (AVE) and Composite Reliability (CR) measures of all items are presented in the table 2.

**Table 2.** Reliability and validity analysis

<i>Construct</i>	<i>Item</i>	<i>Mean</i>	<i>Loadings</i>	<i>Cronbach alpha</i>	<i>CR</i>	<i>AVE</i>
<i>Intention to Suicide (ITS)</i>	ITS1	3.11	0.781	0.825	0.866	0.81
	ITS2	3.23	0.763			
	ITS3	3.13	0.777			
	ITS4	3.20	0.769			
	ITS5	3.03	0.699			
<i>Perceived Behavioral Control (PBC)</i>	PBC1	3.29	0.805	0.821	0.837	0.83
	PBC2	3.65	0.817			
	PBC3	3.30	0.802			
	PBC4	3.76	0.821			
<i>Attitude (ATT)</i>	ATT1	3.80	0.865	0.862	0.833	0.88
	ATT2	3.63	0.827			
	ATT3	3.33	0.816			
	ATT4	3.41	0.791			
<i>Subjective Norm (SN)</i>	SN1	3.74	0.842	0.841	0.834	0.85
	SN2	3.81	0.816			
	SN3	3.51	0.808			
	SN4	3.49	0.858			

Discriminant validity was analyzed via the Heterotrait-Monotrait (HTMT) ratio of correlation. The HTMT mentioned that a lower threshold value such as 0.85 or 0.9 could establish the discriminant validity that reliably distinguishes between those pairs of latent variables, depending on the study context. Referring to the table 3, all the values of the constructs are below 0.9, which reflect satisfactory discriminant validity.

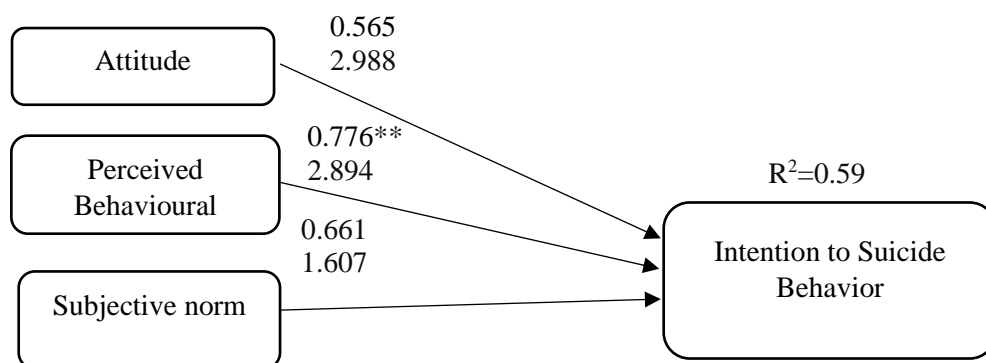
**Table 3.** Heterotrait-Monotrait Ratio of Correlations (HTMT)

	ATT	ITS	PBC	SN
ATT				
ITS	0.796			
PBC	0.843	0.849		
SN	0.824	0.828	0.829	

#### 4.2. Structural Model and Hypothesis testing analysis

This study used the bootstrapping method (1000 resample) to test the model with different research hypotheses. To assess the structural model, the path coefficient of exogenous to endogenous variables, the t-values, and squared multiple correlation ( $R^2$ ) values of explained variance on the endogenous variable were evaluated. The path coefficient value is ranging from -1 to +1, which path coefficient estimated close to +1 shows a strong positive relationship while -1 shows strong negative relationship with annotation of path coefficients ( $\beta$ ).

Based on three predictors on ITS, the coefficient of determination,  $R^2$  was 0.59 and statistically significant evidence was found in support of hypothesis H1 (ATT→ITS,  $\beta= 0.565$ ,  $p<0.01$  and H2 (PBC→ITS,  $\beta= 0.776$ ,  $p<0.01$ ). However, H3 (SN → ITS) is not supported since the t-value is below than 1.645 and straddle the zero value in the confidence interval. Table 4 shows the outcomes of the hypotheses testing.



**Figure 2** Results of the structural model

**Table 4.** Hypothesis testing results

Hypothesis	Relation	Path co- efficient ( $\beta$ )	T- value	P - value	5.00% LL	95.00% UL	Results
H1	ATT $\rightarrow$ ITS	0.565	2.988	0.04	0	0.154	Supported
H2	PBC $\rightarrow$ ITS	0.776	2.894	0.005	0.075	0.293	Supported
H3	SN $\rightarrow$ ITS	0.661	1.607	0.21	-0.116	0.05	Not Supported

## 5. DISCUSSION

This study determined the factors that influence suicide intent among younger adolescence. According to the findings, perceived behavioural control and attitude has a favorable and significant impact on suicide intentions behavior. The result of this pilot study shown contradiction with previous research, yet the author believes due to sample size ratio between city area and age the novelties of this future actual research is derived from other factor on demographics profile. The adult group age 16 up to 35 years old may regards the intention to suicide due to vary of traits personality, environmental stimulations and parenting styles. Hence, they will be more assertive in making a decision, perceived feeling within individual (Ibrahim et al., 2021). In reality, the availability of certain factors of suicide intent behavior such as the quality of life is the most important antecedents of suicide intention.

This research has a wide range of explanations on how certain factors can accommodate the intention to suicide among younger adolescent in Malaysia especially on the subjective norm determinant. In daily life the attention from parents, guardian and colleague may not affect the intent yet the communication towards these issues must be arise. Thus, the aspect to be considered is being introduced the advantages used FAROKAM Virtual system or WPD based on engagement and attention during completion of task given through digitalize and ludification in the system (Ibrahim et al., 2021; Dieleman et al., 2018). The best approach to distract the suicide intent behavior is by intervening on their basic psychological needs (as shown in the Eysenck theory). In conclusion, this study findings are giving new idea how the virtual system may decrease the suicide intent level and exploring the previous research in Malaysia of augment model in suicide intent. The additional variables into TPB, traits, social characters, self-structured were predicted among the crucial determinants of intent suicide behavior in another working paper of 2023 which will contribute the complex model testing by the authors.

## 6. CONCLUSION

The study explores the TPB on suicide intention behavior, which various factors to be considered part of human daily life. Even though TPB is considered latent in behavioral studies, the current study justifies that the theory is still relevant. Besides, lack of studies crucially discussed on the perspectives of suicide behavior based on integration of virtual system addiction and many more.

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