THE INFLUENCE OF ATTITUDE, SUBJECTIVE NORMS, AND PERCEIVED BEHAVIORAL CONTROL ON VACCINATION INTENTION AMONG TEACHERS: THE MODERATING ROLE OF PERCEIVED POLICY EFFECTIVENESS

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ABSTRACT

Background and Purpose: This study explores teachers' influence on families' vaccination decisions and the role of schools in health education. It aims to identify factors shaping teachers' attitudes toward vaccines and their decision-making when vaccinating their children. Using the Theory of Planned Behavior, the research examines educators' attitudes, subjective norms, and perceived behavior control about vaccination choices. It provides insights into the crucial role of schools and teachers in promoting vaccination and enhancing vaccine acceptance in society.

Methodology: A quantitative approach was employed to analyze the data in this study. Questionnaires were distributed to teachers in three states in Malaysia, namely Pahang, Terengganu, and Kelantan. Out of the total 400 questionnaires distributed, only 326 were found suitable for analysis after the screening process. The data were then analyzed using the partial least square structural equation modeling (PLS-SEM) method.

Findings: The study reveals a significant link between teachers' attitudes toward vaccinating children and a connection between subjective norms and parents' vaccination intentions. These findings support previous research, underscoring the influence of attitudes and subjective norms on vaccination decisions. However, no significant relationship was found between perceived behavior control and parents' intention to vaccinate, suggesting that parents' beliefs about accessing vaccines or overcoming barriers have a limited impact on their vaccination intentions. In addition, Perceived policy effectiveness positively influenced parents' vaccination intentions.

Contributions: This study enhances understanding teachers' vaccination intentions, informing evidence-based policies to promote vaccination and address barriers. Recognizing the factors influencing teachers' decision-making, targeted interventions can enhance vaccination rates and improve public health outcomes.

Keywords: Vaccine acceptance, teachers' vaccination intentions, attitude, subjective norms, perceived behaviour control.

1.0 INTRODUCTION

Children's vaccination is a highly impactful strategy in public health to prevent and manage infectious diseases. It involves administering substances that boost a child's immune system, empowering it to develop immunity against specific illnesses and providing vital protection against those diseases. Vaccinations are also necessary for preserving the health of the public. If the vaccine can get the vaccine into the hands of most of the population, it can protect them from preventable diseases (Abd Rahman et al., 2022a). Consider the case of a new virus breaking out in the population. If the vaccine successfully protects most people, the virus will have a more challenging time locating susceptible individuals to infect. As a result, the entire population has what is known as "herd immunity," which protects them from the disease. Therefore, understanding the health beliefs influencing parents' vaccination decisions is crucial for successful mass vaccination campaigns and herd immunity. The success of vaccination campaigns and population protection depends critically on vaccination intention. Vaccine hesitancy among parents poses significant challenges, including concerns about vaccine safety,

the influence of misinformation, lack of confidence in healthcare systems, and cultural or religious convictions (Manganello et al., 2022). Parents' viewpoints and beliefs significantly predict their children's immunization status. Understanding the factors influencing parental intention to vaccinate is crucial, as parents play a key role as decision-makers within households. By assessing these factors, interventions and policies can be developed to enhance vaccination uptake and improve public health outcomes.

Concerning schools, schools are acknowledged as privileged environments that disseminate health-related knowledge and educational messages. Recognizing the importance of schools as platforms for health education, Xu et al. (2023) highlight the potential of public-school health education classes in effectively delivering accurate medical information to societies. The researchers emphasize the influential role of teachers in shaping families' decisions regarding vaccination by providing essential information and official recommendations. Teachers play a crucial role in influencing families' decisions regarding vaccination by sharing critical information about vaccines and official offers (Xu et al., 2023).

According to Xu et al. (2023), teachers, being a high-priority population in education, could ensure educational continuity, minimize social instability, disseminate accurate health knowledge, and foster the development of health awareness in society. The study by Riccò et al. (2017) also emphasizes schoolteachers' vital role in influencing families' vaccination decisions. Therefore, teachers influence parental intentions to vaccinate children by giving essential information about vaccines and recommending following government guidelines.

Using the Theory of Planned Behavior as a foundation, the authoritative nature of teachers' profession allows their choices to potentially influence students' decision-making processes based on attitudes and subjective norms (Xu et al., 2023). However, teachers may still be very vaccine hesitant despite their knowledge of vaccines since they do not have faith in vaccine safety and efficacy. This hesitancy is further fueled by inadequate evaluation of the risk-benefit ratio associated with vaccination. Cahapay (2022) conducted a study among teachers in the Philippines, revealing that most teachers expressed a low intention to receive the COVID-19 vaccine. Additionally, throughout the Covid-19 epidemic in Malaysia, roughly 2,500 teachers reportedly declined to get the Covid-19 vaccine (Camoens, 2021).

Therefore, teachers' refusal to get the vaccine may impact their health and potentially influence mothers' decision to vaccinate their children, leading to societal problems. Consequently, it is essential to comprehend the elements that might affect teachers' intentions regarding vaccinating their children. Additionally, this study attempts to evaluate teachers' intentions to get vaccinated using the Theory of Planned Behavior as a framework. The

research will use this theory to examine the variables influencing teachers' subjective norms, attitudes, and perceived behavioural control concerning vaccination. The study seeks to understand how these factors influence teachers' intentions regarding vaccination and contribute to the overall understanding of vaccine acceptance among educators. This paper's main contribution is examining the moderating effects of perceived policy effectiveness on teachers' intention to vaccinate their children. By exploring these dynamics, a deeper understanding of vaccination intention is achieved, facilitating the formulation of informed policies that promote vaccination and address barriers.

2.0 LITERATURE REVIEW

2.1 Attitude and Vaccination Intention

Attitudes are affected by rational and emotional factors (Xiao, 2019). Zhang et al. (2022) define attitude toward a vaccine as an individual's overall evaluation or assessment of that intention to get the vaccination. In the context of children's vaccination, attitude toward the intention reflects a parents' comprehensive evaluation of vaccinating their children. It can be supported by Abd Rahman et al. (2022b), who postulates a connection between parents' attitudes and their decision-making process regarding vaccinating their children against human papillomavirus (HPV).

In a Johnson and Ogletree (2017) study, the researcher argued that that attitude might not reliably predict vaccination intention. However, Xiao (2019) found that affective attitudes towards vaccination subsequently affect the will to receive a vaccine. Besides, recent studies by Xiao and Wong (2020) have demonstrated that attitude is the crucial and most influential forecaster of preparation for receiving a vaccination. Concerning children's vaccination, the study conducted by Li et al. (2022) discovered that parents with positive attitudes vaccinated their children more frequently than other parents did. Similarly, according to the findings of Zhang et al. (2022), attitude plays a crucial part in deciding about vaccination among Chinese parents when deciding whether to vaccinate their daughters against HPV. Considering these discussions and empirical evidence, the study proposes the following hypothesis.

H1: Attitudes are positively associated with the intention to receive children's vaccination.

2.2 Subjective Norms and Vaccination Intention

According to the Theory of Planned Behavior (TPB), subjective norm pertains to individuals' beliefs regarding whether specific individuals or groups endorse or discourage a particular

behaviour (Fishbein et al., 1980). These influential individuals or groups may include spouses, children, parents, community leaders, religious figures, government officials, etc. Besides that, researchers have suggested targeting influential individuals in the lives of the target population, such as friends, family, and doctors, to promote the advantages of vaccination (Himelboim et al., 2020). According to Zhang et al. (2022), subjective norms are the perceived social expectations regarding intention. For instance, it has been acknowledged that mothers are essential in encouraging vaccinations and overall healthy living. Besides that, Abd Rahman et al. (2022b) found that parents' subjective norms significantly affected whether they planned to vaccinate their children against human papillomavirus.

According to a study carried out by Adiyoso et al. (2023), participants who perceived more significant approval of the vaccine within their social network were also more likely to have the intention to be vaccinated. Besides, the study conducted by Riccò et al. (2017) underscores schoolteachers' significant influence on shaping families' vaccination decisions. Through the dissemination of crucial information about vaccines and official recommendations, teachers have the potential to impact the vaccination choices made by parents.

Furthermore, when considering whether to protect their daughters by vaccinating them with Human Papillomavirus (HPV), parents in China were positively influenced by subjective norms, according to the findings of Zhang et al. (2022). Additionally, research has revealed a connection between a daughter's desire to receive an HPV vaccine and her mother's plans to get vaccinated against HPV. Similar studies on flu vaccination in white and African American adults have shown that people frequently consider the expectations of significant others in their lives when stating vaccination intentions (Quinn et al., 2017). These findings align with previous studies that have identified social norms as predictors of vaccination intention (Li et al., 2022; Britt & Englebert, 2018; Xiao & Wong, 2020). The following hypothesis is proposed based on these discussions and actual evidence:

H2: Subjective norms are positively associated with the intention to receive children's vaccination.

2.3 Perceived Behaviour Control and Vaccination Intention

A person's confidence and perception of their ability to successfully carry out a behaviour specifically related to the intention of vaccinating their children are referred to as their perceived behavioural control, or PBC (Zhang et al., 2022). It encompasses factors such as accessing vaccination services, managing costs, and addressing concerns or barriers associated

with the vaccination process.

However, findings from Xiao and Wong (2020), Britt and Englebert (2018), and Johnson and Ogletree (2017) did not identify PBC as a significant determinant of vaccination intention. In contrast, in a study conducted by Li et al. (2022) among parents in Hong Kong, it was found that those with a high sense of perceived behavioural control demonstrated a stronger inclination to vaccinations for their youngsters. Similarly, the findings of Zhang et al. (2022) indicated that perceived behavioural control (PBC) positively influenced the deliberative procedure of mainland Chinese parents regarding the HPV vaccination of their daughters. Therefore, based on the examination of these studies, this research proposes the following hypothesis:

H3: Perceived behavioural control is positively associated with the intention to receive children's vaccination.

2.4 Perceived Policy Effectiveness and Vaccination Intention

The term "perceived policy effectiveness," or PPE for short, mentions how individuals evaluate various policy measures, such as the clarity, adequacy, and facilitation of vaccination programs and guidelines (Wang et al., 2021). In addition, Wan et al. (2014) explain that policy measures can serve as tools for motivation when used appropriately. In the context of vaccination, if individuals perceive a more powerful and efficient source of inspiration through policy measures, it can enhance their intention to vaccinate themselves or their children. Therefore, understanding and improving PPE about vaccination policies and programs can significantly promote positive vaccination intentions and behaviours among individuals. The study suggests that PPE directly influences vaccination behaviour.

For example, according to Vrdelja et al. (2020), PPE substantially impacts the intention to vaccinate children for mandatory vaccinations between 90-95%, while coverage for non-mandatory vaccinations such as HPV and pneumococcal infections is around 50%. To maintain high vaccination coverage for most diseases in Slovenia, it is essential to establish intensive communication strategies tailored to different populations. This is particularly crucial to increase parents' confidence in vaccinating their children.

Wan et al. (2014) postulate that studying the policy implications of altering factors influencing behaviour is significant. According to Betsch et al. (2015), to modify vaccination behaviour, it is essential to realize that various facets impact the determination process of whether to vaccinate or abstain from vaccination. In addition, the concept has been supported

by Liu et al. (2021), demonstrating that implementing a vaccination policy can result in higher vaccination rates. This discovery aligns with a study in China, indicating which policy interventions can substantially influence individuals' inclination toward vaccination. Therefore, the subsequent hypothesis was formulated.

H4: Perceived policy effectiveness is positively associated with the intention to receive children's vaccination.

2.5 The Moderating Effect of Perceived Policy Effectiveness on The Positive Relationship Between Attitudes and Vaccination Intention

Policy implications often involve changing attitudes through information and communication campaigns and promoting desired behaviours through suitable and convenient policies (Wan et al., 2014). Perceived Policy Effectiveness (PPE) refers to how individuals assess vaccination policies' clarity, adequacy, and support. It not only directly influences vaccination behaviour but also moderates the impact of other factors on vaccination intention.

When a parent maintains a favourable attitude towards vaccination but perceives insufficient support from public authorities, their inclination to vaccinate their children is expected to be diminished. Conversely, even if a person has a negative attitude toward vaccination but is provided with helpful facilitation from public authorities, their parental vaccination motivations may still be minimal. Xu et al. (2017) conducted a study on waste sorting, which found that the perceived effectiveness of a policy has a significant impact, both positively and significantly, on attitudes and intentions. Based on this, the following hypothesis is proposed:

H5: Perceived policy effectiveness will positively moderate the relationship between attitude and vaccination intention.

2.6 The Moderating Effect of Perceived Policy Effectiveness on The Positive Relationship Between Subjective Norms and Vaccination Intention

An individual's interpretation of the amount of social pressure exerted upon them in engaging in a specific behaviour is what is meant by the term subjective norms (Barattucci et al., 2022). It reflects how one perceives the beliefs and attitudes of relevant individuals in their social circle, such as friends and family members. When making judgments regarding behaviours, such as whether to vaccinate their children, people are frequently swayed by the anticipations

and viewpoints of those around them. The perceived social norms surrounding vaccination can significantly impact parents' decision-making and inclination to protect their children against disease by vaccinating them. In a study that was carried out by Adiyaso et al. (2023), participants who perceived more significant support for the vaccine within their social network were also more inclined to have the intention to be vaccinated.

In terms of PPE, Wan et al. (2014) discovered in their study on recycling intention that the perceived effectiveness of policies exhibited a counterproductive moderating effect regarding the connection between subjective norms and the desire to recycle. In contrast, Xu et al. (2017) found that an individual's perception of the success of a policy positively moderates the connection between the subjective norms of an individual and that individual's intentions. Based on these considerations, The following hypotheses are put forward for consideration.

H6: Perceived policy effectiveness will positively moderate the relationship between subjective norms and vaccination intention.

2.7 The Moderating Effect of Perceived Policy Effectiveness on The Positive Relationship Between Perceived Behavioural Control and Vaccination Intention

According to Wan et al. (2014), policy measures have the potential to serve as motivational tools. In the context of vaccination, stronger and more effective motivation through policies can enhance individuals' intention to get vaccinated. Therefore, improving understanding and strengthening PPE in vaccination policies can be crucial in promoting positive vaccination intentions and behaviours. The research carried out by Xu et al. (2017) regarding recycling found that perceived behavioural control positively influences intention, specifically for the group with low perceived policy effectiveness. This means that when people have a negative impression of the success of government initiatives, the influence of perceived behavioural control becomes more pronounced. Xu et al. (2017) postulate that if the government fails to implement policies that motivate trash separation behaviour effectively, the extent to which a person accepts control for their activities is a significant factor that will substantially influence their desire to segregate garbage. In this study context, PBC and perceived policy effectiveness (PPE) are classified as intrinsic and extrinsic components of motivation. When people are motivated from the inside, they have the intrinsic drive (i.e., high PBC) to engage in vaccination intention, and their intention is likely higher. The association between PBC and behavioural intention would be strengthened if the extrinsic motivating element, PPE, was present.

Considering that Perceived Policy Effectiveness (PPE) is a motivational factor, the study proposes the following hypothesis.

H7: Perceived policy effectiveness will positively moderate the relationship between perceived behavioral control (PBC) and vaccination intention.
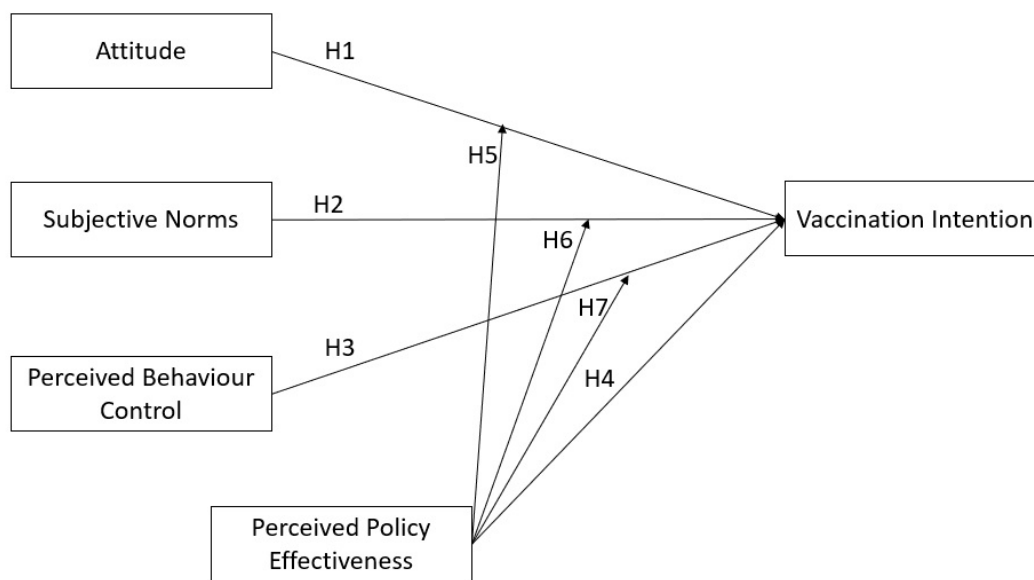

Figure 1: Conceptual framework for the study

3.0 RESEARCH DESIGN

3.1 Sample and Procedure

The research followed the positivist paradigm by employing quantitative methods and data analysis to fulfill its objectives. It focused on teachers in Kelantan, Terengganu, and Pahang, Malaysia. Of the initially circulated 400 questionnaires, only 326 sets (equivalent to 81.5 per cent) were deemed suitable for data analysis. Data sets with inferior quality, such as those with a linear response pattern, were excluded from the study.

To assess the formulated hypotheses, the researchers employed Partial Least Square Structural Equation Modeling (PLS-SEM) version 4.0.9.3, a type of structural equation modeling (SEM). A priori power analysis was carried out on the data gathered for the study using the G*Power software. This was done per the procedure highlighted by Faul et al. (2007) and Faul et al. (2007). The findings of this analysis were the required sample size for the study (2009). With a medium effect size, a level of statistical significance (α) equal to 0.05, an ideal power of 0.80, and accounting for seven predictors in the moderation model, 103 participants

were suggested as the bare minimum required for the study's sample size. By having 326 respondents, the study comfortably exceeded the minimum number of participants to validate the research model.

Table 1 contains the demographic information of those participating in this research. The frequency distribution indicates that most respondents were female (77.9 per cent), while the remaining were male (22.1per cent). The participants in the survey had an average age of 38.88 years old during the research. Regarding nationality, most of those who answered the survey were Malay (96.3 per cent), followed by Chinese (3.4 per cent). Most respondents' income fell from RM 4,851.00 to RM 10,970 (63.8 per cent), and most were married with kids (92.9 per cent).

Table 1: Profile of respondents (n=326)

Items	Frequency	Percentage
Gender		
Male	72	22.1
Female	254	77.9
Ethnic		
Malay	314	96.3
Chinese	11	3.4
Others	1	0.3
Income		
RM 4,850.00 and below	26	8.0
RM 4,851.00 – RM 10,970	208	63.8
RM 10,970 and above	92	28.2
Marital Status		
Single parents	23	7.1
Married with kids	303	92.9

3.2 Research Instrument

This study's research instrument consisted of three distinct parts. The primary section focuses on gathering participants' personal data, while the second section concentrates on examining the independent variables. Lastly, the third section examined the moderation and dependent variables.

3.2.1 Measurement of the independent variable

In this study, the researchers assessed the attitudes, subjective norms, and perceived behaviour control concerning children's vaccination using a scale developed by Twum et al. (2021). The scale comprised seven statements for measuring attitudes, 3 for subjective norms, and 6 for perceived behaviour control. The respondents were requested to evaluate the provided statements utilizing a 5-point scale, from 1 (strongly disagree) to 5 (strongly agree).

3.2.2 Measurement of a moderating variable

The measurement scale and items employed to evaluate perceived policy effectiveness in this study were adapted from previously conducted research by Wan et al. (2014). However, certain adjustments were made to the original items used by Wan et al. (2014) to align with the particular objectives and context of childhood vaccination. For this study, seven items were utilized. The respondents were tasked with rating their responses on a Likert scale with seven points, ranging from one (strongly disagree) to seven (strongly agree).

3.2.3 Measurement of the dependent variable

Vaccination intentions were evaluated utilizing a measurement scale comprised of three items, following the recommendations of Caso et al. (2019). These three items were specifically crafted to capture individuals' intentions or willingness to undergo vaccination. Participants were instructed to indicate their intention to vaccinate their child using a 7-point Likert scale, varying from 1 (representing "strongly disagree") to 7 (defining "strongly agree") in response to the presented statements.

4.0 ANALYSIS

This study used SPSS 29 and Partial Least Square Structural Equation Modeling (PLS-SEM) statistical tools for conducting analysis. The objective was to forecast the influence of dependent variables and gain insights into the associations among different variables. PLS-SEM has generated substantial enthusiasm within research in the social sciences because of its capacity to deal with complex model analysis, small sample sizes, and non-normal distributions. It is particularly well-suited for examining causal relationships between variables.

Following the recommendation provided by Hair et al. (2017b), this study assessed data normality using multivariate skewness and kurtosis. The findings revealed that the data that was collected did not meet the criteria for multivariate normality, as evidenced by significant

values for Mardia's multivariate skewness ($\beta = 14.1263$, $p < 0.01$) and Mardia's multivariate kurtosis ($\beta = 83.4208$, $p < 0.01$). Thus, PLS-SEM, a non-parametric analysis software, was chosen as the favourite method for this study.

4.1 Common Method Bias

This research utilized a mixture of procedural and statistical practices in data processing to address the potential issue of common method bias (CMB) that may appear when investigating the possible links in causality between exogenous variables and endogenous variables (Chang et al., 2010; Halimi et al., 2022). Procedurally, the researcher warranted transparency by notifying the participants in the study survey that their responses would be kept anonymous, that the survey results would not have any personal repercussions, and that there was no correct or incorrect response to the question. Furthermore, distinct scoring ranges were established for the exogenous and endogenous scales (Podsakoff et al., 2012; Ajibike et al., 2021).

During the statistical analysis, the study utilized the full covariance test developed by Kock (2015) to evaluate common method bias (CMB). This test evaluates the variance inflated factor (VIF) values, where a VIF exceeding 3.3 indicates a notable concern regarding CMB (Diamantopoulos & Siguaw, 2006). Upon examining Table 2, it can be observed that all the constructs had VIF values below 3.3, aligning with the criteria set forth by Hair et al. (2017a). The result is that the study yielded no indications of CMB. Therefore, this study had no problems with the CMB.

Table 2: Full covariance test

ATT	SN	PBC	PPE	INT
2.822	1.765	1.423	1.890	2.677

ATT (Attitude); SN (Subjective Norms); PBC (Perceived Behavioural Control); PPE (Perceived Policy Effectiveness); INT (Intention)

4.2 Measurement Model

This study took an approach suggested by Anderson and Gerbing (1988) and Henseler et al. (2015) and follows a two-step model validation process, which includes the Measurement and structural models.

The measurement model was assessed using SmartPLS 4.0.9.3, and the PLS-SEM algorithm procedure was executed to obtain reliability and validity data, presented in Tables 3 and 4. The factor loading metric was utilized to evaluate the value of outer loading. Agreeing

to Hair et al. (2017a), a general threshold value of 0.708 is considered appropriate, and any value above 0.5 is deemed acceptable. As depicted in Table 2, all indicator loadings met the established criteria. The reliability of the measures was evaluated through Cronbach's alpha (CA) and composite reliability (CR). The results demonstrated that both CA and CR values were above 0.7, which aligns with the recommended acceptance level by Nunnally and Bernstein (1994). Using the average variance extraction (AVE), the study examined the convergent validity of the model. The AVE values for all constructs in Table 3 exceeded 0.5, consistent with the acceptance range endorsed by Hair et al. (2017a).

Table 3: Construct reliability and convergent validity assessment

Indicators	Loading	CA	CR	AVE
ATT1	0.933	0.966	0.972	0.836
ATT2	0.952			
ATT3	0.952			
ATT4	0.936			
ATT5	0.951			
ATT6	0.715			
ATT7	0.935			
SN1	0.920	0.920	0.949	0.861
SN2	0.933			
SN3	0.931			
PBC1	0.834	0.912	0.932	0.696
PBC2	0.866			
PBC3	0.805			
PBC4	0.742			
PBC5	0.892			
PBC6	0.858			
PPE1	0.793	0.964	0.971	0.826
PPE2	0.907			
PPE3	0.940			
PPE4	0.932			
PPE5	0.933			
PPE6	0.921			
PPE7	0.928			
INT1	0.983	0.987	0.991	0.974
INT2	0.989			
INT3	0.988			

ATT (Attitude); SN (Subjective Norms); PBC (Perceived Behavioural Control); PPE (Perceived Policy Effectiveness); INT (Intention)

After establishing the measurement model, the next step was to validate the discriminant validity by determining the heterotrait-monotrait (HTMT) ratio. This was done after confirming that the ratio was accurate. This analysis aimed to ascertain whether all the constructs contained in the model displayed distinctions from other constructs, following the guidelines outlined by Hair et al. (2017a). Table 4 summarises the findings of this investigation, indicating that satisfactory discriminant validity was effectively established in the study. This is evident from the HTMT values, ranging from 0.653 to 0.848, which remained below the threshold value of 0.85, as suggested by Henseler et al. (2015). Therefore, this study successfully achieved appropriate discriminant validity.

Table 4: Discriminant validity assessment (HTMT)

Construct	ATT	SN	PBC	PPE	INT
ATT					
SN	0.848				
PBC	0.788	0.837			
PPE	0.674	0.673	0.653		
INT	0.785	0.770	0.701	0.726	

4.3 Structural Model

Before analyzing the structural model, it is essential to address any potential collinearity concerns within the model. As indicated in Table 5, the results of the collinearity test reveal that the variance inflation factor (VIF) for each construct remains below the threshold value of 5, as Kim (2019) recommended. Therefore, this study does not encounter any issues with collinearity. Multicollinearity occurs when the VIF exceeds 5 (Kim, 2019).

In this study, the bootstrapping procedure was conducted using Partial Least Square Structural Equation Modeling (PLS-SEM) 4.0.9.3 to evaluate the structural model, with a significance level set at 0.05 and a one-tailed test type. According to the findings, the attitude had a beneficial and noticeable impact on intention ($\beta = 0.358$, t = 3.633, p-value = 0.000), subjective norms had a positive and significant effect on intention ($\beta = 0.216$, t = 2.267, p-value = 0.012), and perceived policy effectiveness had a positive and significant effect on intention ($\beta = 0.311$, t = 5.511, p-value = 0.000). Thus, H1, H2, and H4 were supported. However, perceived behavioral control did not significantly impact intention ($\beta = 0.045$, t = 0.630, p-value = 0.265). Hence, H3 was not supported. Moving to the moderation hypothesis (Table 5), it was found that perceived policy effectiveness negatively moderates the

relationship between attitude and intention (β = -0.117, t = 3.845: LL = -0.166, UL = -0.068, p < 0.01); perceived policy effectiveness negatively moderates the relationship between subjective norms and intention (β = -0.102, t = 2.635: LL = -0.160, UL = -0.035, p < 0.05); and lastly, The perceived effectiveness of policy acts as a negative moderator of the relationship between perceived behavioural control and intention (β = -0.124, t = 4.488: LL = -0.167, UL = -0.077, p < 0.01). Therefore, H5, H6, and H7 were not supported.

Following the recommendations made by Cohen (1988), effect sizes can be classified as either small (0.02), medium (0.15), or large (0.35). According to the findings, attitude and subjective norms have a relatively minor impact on individuals' intentions, whereas perceived policy effectiveness significantly impacts individuals' intentions. Additionally, the R-squared value of 0.685 indicates that the exogenous variables investigated in this study, namely attitude, subjective norms, perceived behavioral control, and perceived policy effectiveness, collectively explain 68.5% of the observed variations in intention.

Table 5: Path coefficient assessment

Hypothesis	Relationship	Beta	SE	t-values	p-values	LL	UL	VIF	F2	Decision
H1	ATT -> INT	0.358	0.099	3.633	0.000	0.205	0.528	3.336	0.122	S
H2	SN -> INT	0.216	0.095	2.267	0.012	0.057	0.369	3.554	0.042	S
H3	PBC -> INT	0.045	0.072	0.630	0.265	-0.068	0.164	2.856	0.002	NS
H4	PPE -> INT	0.311	0.056	5.511	0.000	0.215	0.398	1.930	0.159	S
H5	PPExATT -> INT	-0.117	0.030	3.845	0.000	-0.166	-0.068			NS
H6	PPExSN -> INT	-0.102	0.039	2.635	0.004	-0.160	-0.035			NS
H7	PPExPBC -> INT	-0.124	0.028	4.488	0.000	-0.167	-0.077			NS

4.4 PLS Predict

The PLS prediction procedures were conducted following the methodology proposed by Shmueli et al. (2016) to evaluate the model's out-of-sample projecting capabilities. The PLS analysis's root mean squared error (RMSE) was a crucial criterion for assessing predictive performance. This RMSE was compared to the values obtained from a linear model (LM) RMSE, as Danks and Ray (2018) suggested. The expectation was that the PLS analysis would yield lower prediction errors compared to the naïve benchmark (PLS-LM), indicating improved predictive power. The results in Table 6 reveal that the PLS analysis achieved more insufficient prediction errors than the naïve LM benchmark, demonstrating a high accuracy capacity (Hair

et al., 2019; Shmueli et al., 2019). Furthermore, the data in Table 6 indicates that all Q2 values are higher than 0, suggesting sufficient predictive relevance.

Table 6: PLS Predict

Items	PLS RMSE	LM RMSE	Result	Q^2 Predict
INT1	1.011	1.019	-0.008	0.648
INT2	1.002	1.019	-0.017	0.656
INT3	1.025	1.052	-0.027	0.647

5.0 DISCUSSION

The study revealed a strong connection between attitude and parents' intention to vaccinate their children. These results agree with those of prior studies by Xiao (2019), Xiao and Wong (2020), Li et al. (2022), and Zhang et al. (2022), highlighting a consistent pattern. Moreover, the study revealed a significant association between subjective norms and parents' desire to vaccinate their children, aligning with the conclusions drawn by Quinn et al. (2017), Britt and Englebert (2018), Xiao and Wong (2020), Zhang et al. (2022), Li et al. (2022), and Adiyoso et al. (2023). These findings underscore a strong correlation between attitudes, subjective norms, and the intention of the parents to get their children vaccinated. Therefore, it can be concluded that parents' attitudes and the influence of subjective norms, encompassing social pressure or perceived expectations, play a significant part in determining whether parents get their kids vaccinated.

However, the findings obtained from the study indicate no significant relationship between perceived behaviour control and parents' plans to get their kids vaccinated. This means that parents' beliefs concerning their ability to access vaccines, overcome barriers, or facilitate vaccination did not substantially influence their intention to vaccinate their children. This finding is consistent with other studies, such as Johnson and Ogletree (2017), Britt and Englebert (2018), and Xiao and Wong (2020).

Interestingly, the study found that a policy's perceived effectiveness positively and significantly impacts intention. This indicates that when parents perceive vaccination policies as effective in preventing and controlling diseases, they are more likely to develop a positive inclination toward vaccinating their children. Perceiving policies as effective strengthens parents' belief that vaccines are safe and effective and alleviates concerns or doubts. Parents may interpret effective policies as prioritizing public health and safeguarding their children

from vaccine-preventable diseases. As a result, they are more inclined to view vaccination as a responsible and beneficial action, leading to a positive intention to vaccinate their children.

Nevertheless, it is crucial to highlight that the study did not identify any moderation influence of the perceived effectiveness of the policy on the association between attitude, subjective norms, perceived behaviour control, and intention. According to the findings, the relationship between these variables and parents' choice to vaccinate their children remained constant regardless of how effective they believed the policy to be. Although vaccination regulations' efficacy may influence overall vaccination rates and their impact on public health, it does not alter the relationship between individual factors and parents' intention to vaccinate their children. Hence, other factors beyond perceived policy effectiveness may be more prominent in determining parents' attitudes, social influences, perceived control, and subsequent intention related to children's vaccination.

These findings emphasize the importance of considering multiple factors when investigating whether parents want to vaccinate their kids. The creation of successful methods and interventions to promote vaccination and assure the well-being of children can be informed by an understanding of the interplay between attitudes, subjective norms, perceived behaviour control, and the effects of vaccination policy.

6.0 CONCLUSION

In conclusion, vaccination of children is an essential component of strategies for preventing and controlling infectious diseases. Gaining insights into the factors that influence parents' decisions regarding vaccination is of utmost importance to ensure the effectiveness of vaccination campaigns and the achievement of herd immunity. This study emphasizes the significance of attitude and subjective norms in shaping parents' intention to vaccinate their children, supported by previous research. Positive attitudes on vaccination and the influence of subjective norms contribute to a higher choice to vaccinate. However, perceived behaviour control did not significantly affect parents' intention to vaccinate, aligning with other studies.

Interestingly, perceived policy effectiveness positively and significantly impacted parents' intention to vaccinate their children. When parents perceive vaccination policies as effective, they are more likely to possess a positive intention toward vaccination. The study suggests effective policies can enhance parents' confidence in vaccines and alleviate concerns. However, the moderation analysis revealed that perceived policy effectiveness did not moderate the relationship between attitude, subjective norms, perceived behaviour control, and intention. This suggests that the influence of these factors on parents' choice to vaccinate their

children remained consistent, regardless of their perception of policy effectiveness. It indicates that other influential factors beyond policy effectiveness may significantly shape parents' attitudes and intentions toward vaccination.

Therefore, according to the findings, it has been hypothesized that the policymaker can enhance health education in schools. For example, it is essential to recognize the crucial function of teachers in shaping families' decisions regarding vaccination. Strengthen school health education programs to provide accurate vaccine information and official recommendations. Teachers can play a vital role in disseminating this information to parents and promoting vaccination. Besides that, it is crucial to address vaccine hesitancy among teachers, like acknowledging that it may impact their health and influence parents' decisions about vaccinating their children. Future research is also recommended to discover other factors affecting parents' intention to vaccinate their children, such as investigating the function of culture and religious beliefs, social networks, and healthcare services. Further research can provide a deeper understanding of these factors and guide the development of tailored interventions.

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