# Farmers' intention in growing vanilla for farming usage in Kelantan

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**Abstract.** This study was conducted to identify farmers' intentions towards planting vanilla in agricultural production in Kelantan. Farmers has lack of acceptance, awareness, and knowledge about the benefits of planting vanilla in agricultural production in Kelantan. The main issues that arise in agricultural sector are climate change, disease and illness, and low agricultural production. This research consist of 150 farmer has respondents in Kelantan, by using non – probability sampling method. Furthrmore purposive sampling method was used in this study, which is the distribution of survey questions through "Google Forms" among farmers in Kelantan by applying the Theory of Planned Behaviour (TPB). The findings of this research result shows a high level of farmers' intention towards vanilla cultivation in production. Hence the agricultural production of vanilla will be a milestone among the farmers in Kelantan to meet local demands. Lastly, to ensure crops are environmental friendly which give impact socially,economically and governance.

## 1 Introduction

*Vanilla planifolia* or vanilla has contributed significantly to human well-being and tropical vegetation. The vegetable can be used for cooking, medicine, and fragrance. Vanilla is unquestionably linked to a variety of diseases [1]. Since high-quality vanilla is needed to manufacture vanilla, the extraction of vanilla solution is a necessary step in every downstream production process to protect the finished products from chemicals [1].

A Japanese business became aware of a superb vanilla farm near Penang. East Malaysia has a strong demand for food and other items, although it produces less vanilla than other regions [2]. Vanilla orchids are probably native to the subtropical zone because they produce high-quality vanilla plants. Technology is employed because of the extreme heat and little resources.

Growers have traditionally prioritized traditional crops like cucumbers, okra, and other vegetables over commodities like vanilla, whose marketability is erratic. Moreover, farmers are unable to outfit their own farms with intelligent agricultural technology. Farmers, whose knowledge of plant production is frequently restricted to more fashionable, in-demand crops

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like chillies and other vegetables, now benefit from the thematically recurring design. But vanilla might never find widespread use as a product. Growers of vanilla were offered many opportunities for contract farming, but the response was insufficient [3].

But these days, farmers in Kelantan are focusing more on common products like chiles and conventionally grown highland vegetables. This stands in contrast to the difficulties faced by customers and the methods used in the manufacture of virgin vanilla. Farmers are deterred for two reasons: the quantity of land farmed and the distance, which limits their access to new farming knowledge [4]. Beyond the dispute with the agricultural authorities, there are numerous more issues with agricultural expansion in Kelantan [5]. This situation initially appears to fit the behavior model of the Theory of Planned Behavior, which consists of an attitude, subjective norm, perceived behavioral control, and intention [6]. The behavior model revolves around how profitable it is to grow vanilla.

Thus, this study tried to analyse the mean score of Kelantan farmers' intention in production of vanilla. Following this expansion, Malaysia significantly reduced its imports of vanilla goods, allowing the country's economy to become self-sufficient and rank among the top agricultural states while also allowing the public sector to flourish. Furthermore, fertiliser subsidies helped to offset the inexperience of poor farmers. Vanilla drivers, who are smallholder farmers in remote areas of the world, are considered weeds when they learn about planting or practices that reduce financial or technological risk.

While it doesn't need a lot of room to grow, vanilla does need the right conditions and attention. The problem is exacerbated by the widespread use of vanilla in cooking, but it is also mitigated by the fact that the powder is used in a variety of paints, tires, cosmetics, and pharmaceuticals. The amazing thing about the vanilla industry is that just 3 percent originates from pure sources; the rest is processed. Consumers utilize it as a crucial tool when making decisions, especially in light of the expanding markets for natural products and the need for imports and exports of natural vanilla [7, 8].

Since each cascade would continue to profit from the product's sales earnings, the future of vanilla manufacturing is bright. The farmer believes that you can afford the vanilla. According to the report, a kilogramme of vanilla is worth $650 USD. Vanilla was made possible by the state's climate and topography as well as the species' susceptibility to cultivation. One of the many difficulties growers in the state encounter is having to sell their land and incur the associated costs. Some farmers possess land, but others lack sufficient area for farming [2].

To increase agricultural output, growers in Kelantan would also have to assume the financial risk of growing vanilla. Although this is a relatively young sector, slightly more than a handful of farmers in Kelantan cultivate this profitable crop of premium export-grade vanilla. The majority of those impacted are employers, as they may view downsizing as a necessary process in some circumstances, particularly in light of the state of the economy in the wake of the Covid-19 pandemic. Farmers' socioeconomic income is significantly increased by agricultural entrepreneurs through the use of cutting-edge technologies and innovative crops [9]. Since there is a market for the items grown by farmers among informed food consumers, farmers should be permitted to sell the goods they produce [10].

An individual's feelings about something influence their perception on it, regardless of how wonderful or awful it is [11]. Farmers in Kelantan will plant vanilla more fervently if they think their labor is wise and will benefit them. Farmers' decisions can be significantly influenced by public sentiment and opinion [12].

Regarding experimenting on their property with novel plant species, farmers have differing opinions. These opinions are most likely impacted by the methods farmers use to grow vanilla. Growers of vanilla might try alternative plant varieties or discover new uses for the crop's products. Farmers' opinions on the use of fertilizer in agriculture have a mean value of 2.9200 [13].

One could think of subjective norms as a representation of their environment. Ajzen [12] lists subjective norms as one of the social forces that compel someone to act in a particular way. Vanilla growers have goals in the agricultural sector, and these goals are often shaped by society and the media [14]. Advertising influences the decisions made by farmers about agricultural products [15].

Additionally, according to [16], an inclination of individual towards certain behaviors or actions might be impacted by subjective norms. It is also noted that the primary factor affecting people's willingness to take action is their backing of agricultural associations. Despite challenges such as low output, productivity, and a scarcity of labor, small-scale farmers are the mainstay of Malaysian agriculture, as indicated in a study by Zhai Yun [17]. By receiving financial assistance from the government, smallholders can transition from small-scale farming to large-scale cultivation of vanilla. Subjective norms illustrate how farmers' decision growing vanilla is shaped by support from organizations. Consequently, cultural norms have a significant influence on farmers' conduct [18]. The utilization of fertilizers such as Kitosanplus has led to a rise in crop performance [15].

The assessment of how easy or difficult a task is to accomplish forms the basis of perceived behavior control (PBC) [11]. Utilizing the planned behavior concept, it has been possible to predict behavioral intentions of farmers, which can contribute to risk management. This is due to the influence of farmers' cultural backgrounds and mindsets on their behaviors [11]. In order to enhance agricultural productivity, individuals and farmers may be inclined to either cultivate vanilla or refrain from doing so. Although perceived behavioral control and actual behavioral control are at times used interchangeably, it can be challenging to assess how one's behavioral control impacts the execution of a specific behavior.

The attitude, subjective norm, and perceived behavioral control of Kelantan's vanilla farmers can be examined to understand their objectives. Studies on the TPB, a popular farming tool, have shown that PBC is the primary predictor of farming motivation [19]. Additionally, numerous studies have indicated that intentions are more closely linked to attitudes and perceived self-efficacy than to perceived controllability, and that goals are more strongly associated with perceived self-efficacy [12].

## 2 Methodology

This study used a quantitative research design in order to gather the information from respondents. This study was conducted in Kelantan. A non-probability sampling technique was employed to select respondents for the study, considering the participants' subjective evaluations of the population they represented [20]. About 150 farmers were selected as the respondents for this study. This study used structured interview and administrative technique as data collecting technique. All items in the questionnaire were measured by using Likert scale which ranging from 1 as strongly disagree to 5 as strongly agree.

To gain better understanding relating to farmers' intention in growing vanilla, the conceptual framework as shown in Figure 1 below was illustrated based on TPB. The TPB was adapted to identify the factors influencing farmers' intention in growing vanilla in Kelantan. There are three independent variables in TPB which are attitude, subjective norm and perceived behavioural control. The data collected was analysed by using descriptive analysis using SPSS Software. The descriptive analysis was used to summarize the socio-demographic information of Kelantan's farmers. Besides that, descriptive analysis also was used to analyse the mean level of farmers' intention in growing vanilla in Kelantan.

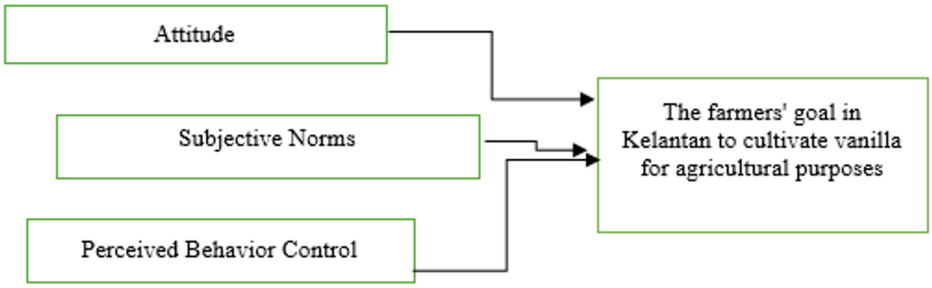


**Fig. 1**. Conceptual Framework adapted from [12].

## 3 Results and Discussion

Table 1 demonstrates the demographics of farmers in Kelantan for growing vanilla which consists of gender, age, area, marital status, educational level and monthly income. Referring to the Table 1, most of the respondents which is 53.5% are males and the rest are female. Majority of respondent aged between 20 to 29 years old with 40%. In this study, majority of respondents come from Jeli with 32.3%, followed by Gua Musang with 12.9% and Machang with 12.3%. About 47.1% of respondents are married, 40.6% are single and the rest are divorce or widow. Regarding to educational level, most of respondents had completed until SPM with 38%. Lastly, about 47.1% of respondents had monthly income Rm1001 to RM2000 for each month.

**Table 1**. The demographic profile of respondents.

| Variables | Frequency | Percentage (%) |
|---|---|---|
| **Gender** | | |
| Female | 72 | 46.5 |
| Male | 83 | 53.5 |
| | | |
| **Age (years old)** | | |
| < 20 | 9 | 5.8 |
| 20 – 29 | 62 | 40 |
| 30 – 39 | 30 | 19.4 |
| 40 – 49 | 28 | 18.1 |
| > 50 | 26 | 16.8 |
| | | |
| **Area** | | |
| Tumpat | 7 | 4.5 |
| Pasir Mas | 12 | 7.7 |
| Tanah Merah | 12 | 7.7 |
| Jeli | 50 | 32.3 |
| Machang | 19 | 12.3 |
| Gua Musang | 20 | 12.9 |
| Kuala Krai | 8 | 5.2 |
| Pasir Puteh | 13 | 8.4 |
| Bachok | 7 | 4.5 |
| Kota Bharu | 7 | 4.5 |
| | | |
| **Marital Status** | | |
| Single | 63 | 40.6 |

| | | |
|---|---|---|
| Married | 73 | 47.1 |
| Divorce / Widow | 19 | 12.3 |
| | | |
| **Educational Level** | | |
| UPSR | 21 | 13.5 |
| SPM | 59 | 38 |
| STPM/ A-Level/ Diploma/ Matriculation | 39 | 25.1 |
| Undergraduate (Bachelor's Degree) | 36 | 23.2 |
| | | |
| **Monthly Income** | | |
| < RM1000 | 48 | 31 |
| RM1001 – RM2000 | 73 | 47.1 |
| >RM2000 | 34 | 21.9 |

### 3.1 The Intention's Level of Farmers on Vanilla Growing in Kelantan

The mean and standard deviation of the farmers' intentions in growing vanilla in Kelantan as indicated in Table 2 were categorized into three groups which are low (1.0 – 2.33), medium (2.34 – 3.66), and high (3.67 – 5.0). The statement "I intend to plant vanilla trees in Kelantan for agricultural production" which had mean of 3.80 with majority of farmers (39.4%) had neutral and agreed thinking with it. According to this, growing vanilla offers Kelantan farmers the opportunity to broaden their horizons and boost their income, which is why a sizable portion of them are thinking about doing so. Growing vanilla could increase the prosperity and profitability of these farmers because vanilla trees are prized for their aromatic qualities and versatility in a range of applications, including food, medicine, and merchandise.

About 22.6% of farmers strongly agree and 36.1% agree with the statement "I think growing vanilla trees can boost agricultural output more than previously". The statement had a mean score of 3.80. While 35% strongly agree, and 35% believe that growing vanilla is a valuable venture in the area. This support is founded on the belief that cultivating vanilla can boost crop production and offer farmers additional chances to learn about vanilla plants. Furthermore, among the surveyed farmers, more than 50% of farmers strongly agree and agree with the statement, "I will put in more effort to educate myself and enhance my techniques in growing vanilla for my future agricultural endeavors." This means that Kelantan's farmers are willing to consider new techniques to enhance agricultural practices and increase output.

Besides that, over than 50% of farmers strongly agree and agree with the statement "Positivity and awareness in the cultivation of vanilla in Kelantan promote motivation to plant.". The agricultural sector in Kelantan is become increasingly acquainted with the cultivation of vanilla as more farmers show interest in this profitable option. This suggests a propensity for higher output. The next statement, with a mean score of 3.93, was, "I believe the primary objective of vanilla cultivation in Kelantan is to enhance agricultural productivity and increase farmers' income.". Based on the results, 34.2% of farmers agreed and 30.3% who strongly agreed with the statement. This implies that goods derived from vanilla are widely used in a variety of geographical areas. Additionally, with a mean score of 4.07, 34.8% strongly agreeing with the statement "The implementation of vanilla cultivation in Kelantan can boost productivity and agricultural yield in the region" received the highest level of agreement. This suggests that growing vanilla in Kelantan is viewed as a cutting-edge approach to boost agricultural productivity, meet customer demand, and ensure the production of premium vanilla. Finally, with 40.6% strongly agreeing with the statement "Growing vanilla in Kelantan can attract more customers or buyers for high-quality vanilla" had a mean score of 4.00.

**Table 2.** Mean for the farmers' intention in growing vanilla in Kelantan.

| Statements | Percentage (%) | | | | | Mean | Level |
|---|---|---|---|---|---|---|---|
| | 1* | 2* | 3* | 4* | 5* | | |
| "In order to increase agricultural output in Kelantan, my goal is to plant vanilla trees there." | 5.8 | 7.1 | 39.4 | 29.0 | 18.7 | 3.80 | High |
| "I believe that growing vanilla trees can further boost agricultural productivity beyond what it has already done." | 2.6 | 5.8 | 32.9 | 36.1 | 22.6 | 3.80 | High |
| "My degree of interest in planting vanilla in Kelantan for agricultural purposes can help the province achieve its target of generating more crops and products." | 2.6 | 7.1 | 29.0 | 35.5 | 25.8 | 3.73 | High |
| "I'll work harder to get knowledgeable about and improve my techniques for growing vanilla so that I can prepare to become a farmer." | 2.6 | 4.5 | 32.3 | 29.7 | 31.0 | 3.90 | High |
| "Rather of discouraging new planting, positive attitudes and awareness of Kelantan's agricultural output of vanilla can encourage it." | 1.9 | 6.5 | 29.7 | 33.5 | 28.4 | 3.67 | High |
| "I believe that increasing agricultural productivity and farmer incomes is the primary goal of Kelantan's vanilla farming." | 1.9 | 2.6 | 31.0 | 34.2 | 30.3 | 3.93 | High |
| "A rise in Kelantan's vanilla production could boost the region's agricultural productivity and yield." | 2.6 | 2.6 | 30.3 | 29.7 | 34.8 | 4.07 | High |
| "My ability to develop vanilla in Kelantan will also enable me to draw in additional clients and purchasers of premium vanilla." | 1.9 | 4.5 | 29.7 | 23.2 | 40.6 | 4.00 | High |

*Indicator: 1-Strongly Disagree; 2-Disagree; 3-Neutral; 4-Agree; 5-Strongly Agree

Table 3 depicted the mean level of farmers' intention in growing vanilla in Kelantan with reflected in a score of 2.5565 which indicating as a moderate level. The farmers recognize the market potential for vanilla cultivation, which has fostered an inclination to engage in growing vanilla in future.

**Table 3**. The mean level of farmers' intentions in growing vanilla in Kelantan.

| Variable | Mean | Level |
|---|---|---|
| Intention of farmers to grow vanilla in Kelantan | 2.5565 | Moderate |

## 4 Conclusion and Recommendations

Farmers are becoming interested in growing vanilla in Kelantan due to the findings about its possible benefits. The mean value of 2.557 indicates that farmers have a moderate level of interest in growing vanilla. Thus, ideas for the future call for increased farmer involvement in agricultural plantations. A deeper understanding of farmers' interest in vanilla is made possible by a larger sample size from different states. To get more reliable results, farmers who are currently working in vanilla plantations might be the right respondents. Policymakers can use this to enhance Malaysia's vanilla plantations overall.

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