

## Entrepreneurship education impact on entrepreneurial intention: theory of planned behaviour approach

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### ABSTRACT

The food industry plays a substantial role in the economic development of every nation. Furthermore, intention has a crucial influence on fostering the emergence of new entrepreneurs. While numerous studies have emphasised the significance of cultivating entrepreneurial intentions, there is a scarcity of research investigating the process by which culinary entrepreneurial intentions (foodpreneurial) are developed among vocational high school students. This study investigates the construction and evaluation of a framework for fostering entrepreneurial aspirations among vocational high school students specialising in culinary arts, employing the theory of planned behaviour (TPB) methodology. The participants in this study were vocational high school students who were asked to provide their perspectives on various aspects, including entrepreneurship education, attitudes towards the behaviour, perceived behavioural control, subjective norms, and foodpreneurial intentions. Structural equation modelling (SEM) data analysis facilitated by the SmartPLS software. This study findings indicate that vocational high school students' intentions to engage in culinary entrepreneurship are significantly impacted by their attitudes towards the activity, their perception of behavioural control, and subjective norms. Furthermore, entrepreneurial education influences entrepreneurial intentions via the three antecedent factors of the TPB. The findings of this research carry significance for both theoretical and practical advancements concerning the process by which entrepreneurial intentions are formed among students enrolled in vocational high schools and vocational higher education.

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## 1. INTRODUCTION

The food business sector significantly contributes to every country's economy. So do not be surprised if the interested parties pay great attention to the development of this business. In Indonesia, the culinary industry is included in one of the sub-sectors of creative economic growth. This culinary sub-sector is considered a leading sub-sector that has contributed to more than 34% of the gross domestic product (GDP) of the creative economy in Indonesia [1]. In particular, the food and beverage industry contributes 6.92% and provides food and drink 2.03% to the national GDP of Indonesia [2]. This report shows that the culinary business occupies an essential role in economic development in Indonesia. Therefore, it is vital to prepare superior culinary new business people.

Entrepreneurship researchers and practitioners have acknowledged entrepreneurship as a primary catalyst for socioeconomic development in numerous nations worldwide [3]–[5]. Entrepreneurs are of utmost importance in this context, as their substantial engagement in entrepreneurial endeavours substantially contributes to overall economic expansion. Consequently, it is unsurprising that the realm of education, particularly vocational education, is engaged in the development of competent and competitive entrepreneurial personnel. The proof is that the Government of Indonesia pays special attention to implementing entrepreneurship education in the vocational high school curriculum, aiming that vocational high school graduates can create new creative businesses. In addition, government policy has directed that vocational high school graduates not only prepare prospective workers who are ready to work but are also prepared to become entrepreneurs and continue their studies at a higher level [6].

Preparing aspiring entrepreneurs begins with determining how to cultivate entrepreneurial intention via educational means. Extensive scholarly literature indicates that the formation of new entrepreneurs is substantially influenced by intention [7]–[10]. The study by Martínez-Gregorio *et al.* [8] revealed that entrepreneurship education could increase entrepreneurial intentions. The entrepreneurial education approach is one way to achieve outputs that include students' skills, interests, commitment, and creativity. A crucial area of study over the past two decades [10], [11] has been the effect of entrepreneurship education on the development of entrepreneurial competencies, including but not limited to increased awareness of opportunities and the capacity to adapt to a dynamic global environment and the establishment of new businesses.

The theory of planned behavior (TPB) reveals three aspects that determine individual behavioural intention, namely: i) attitudes towards the behaviour; ii) perceived behavioural control; and iii) subjective norms [12]–[14]. Although many studies have discussed the factors that influence entrepreneurial intentions, there are still limited studies examining how entrepreneurship education programs can shape the culinary entrepreneurship intentions of center of excellence vocational high school students with the TPB theory approach. Therefore, this study aims to build a structural model of how entrepreneurship education programs can shape the foodpreneurial intention of vocational high school students at the center of excellence by involving attitudes towards the behaviour, perceived behavioural control, and subjective norms.

Economic development in the future, which is very dynamic, requires the participation of creative businesspeople in advancing the improvement of a country's economy. In particular, in Indonesia, the development of the culinary business plays an essential role in contributing to the creative economy's GDP, which is 40% [1]. This means that government policies on preparing excellent culinary business players are critical. The emergence of various new business actors depends on the extent of the entrepreneurship development program that applies in a country. In essence, entrepreneurs are individuals who build and manage businesses for profit and growth [15]. Entrepreneurship is not just creating a new business, but how to make an entrepreneurial mindset among students through proper entrepreneurship education is a current need. A lot of literature has discussed the importance of developing entrepreneurship education in educational institutions. In recent years, research on entrepreneurship education has increased significantly [8], [16]–[18]. Theoretically, until now, there has been no agreement on the definition of entrepreneurship education. However, according to Bae *et al.* [19] that entrepreneurship education is education that refers to the development of entrepreneurial attitudes and skills. In principle, this entrepreneurship education aims to promote an entrepreneurial attitude, spirit, and culture, which can be applied in various fields of life.

Entrepreneurship education is developed to prepare someone to become an entrepreneur. The first step to forming individuals to become entrepreneurs is how to strengthen or create entrepreneurial intentions. Researchers agree that entrepreneurial intentions are essential in building entrepreneurial behaviour [12], [20]. Meanwhile, among the many kinds of literature on entrepreneurial intentions, it is stated that entrepreneurship education is the most critical antecedent factor for forming entrepreneurial intentions [7], [21], [22]. According to Zhang *et al.* [23], entrepreneurship education has a beneficial impact on students' intentions to become entrepreneurs. Maheshwari and Kha [24] presented contrasting findings, indicating that entrepreneurship education does not have a direct influence on entrepreneurial intention. Entrepreneurship education has a notable and beneficial impact on the various aspects of the TPB and self-efficacy. These, in turn, have distinct effects on entrepreneurial goals.

The TPB theoretical framework is commonly utilized in entrepreneurship research and is widely recognized as the most well-established and effective framework for analyzing behavioral intentions. This theory is grounded in the notion that the intention to engage in a particular behavior is influenced by an individual's desire to accomplish the behavior and their confidence in their capacity to carry it out. The TPB theory highlights three crucial aspects that influence entrepreneurial intentions, they are attitudes towards the behaviour, perceived behavioural control, and subjective norms [12], [13], [14], [25]. In the TPB theory, attitude towards behaviour refers to the degree to which an individual has a positive or negative appraisal or assessment of a certain behaviour [13]. Within the framework of this study, "attitude towards behaviour"

pertains to an individual's view of their inclination to pursue culinary entrepreneurship. The second predictor of TPB theory is subjective norms or social norms, which influence the perceived social pressure to engage in or refrain from engaging in a particular behaviour [13]. Subjective norms, in the context of this study, refer to the individual's view of the opinions held by important individuals in their life regarding a career as a foodpreneur. The third antecedent of intention is perceived behavioural control. This relates to the perceived ease or difficulty in doing the behaviour and is believed to be influenced by past experiences and predicted barriers and impediments [13]. In this study, the term "perceived behavioural control" refers to the perceived ability of individuals to successfully carry out entrepreneurial activities in the food industry.

Previous research has empirically tested that the main factors that contribute to the development of entrepreneurial intents are the perceived desirability and perceived feasibility of entrepreneurial acts, which are impacted by personal and social influences [26]. Entrepreneurial intentions are positively influenced by attitudes toward entrepreneurship, subjective norms, and self-efficacy [27]. Additional research also demonstrates that entrepreneurship education has a favorable impact on both entrepreneurial intention and self-efficacy [28]. Meanwhile, the survey conducted by Boubker *et al.* [29] revealed slightly different results; only entrepreneurship education and attitude toward entrepreneurship affect entrepreneurial intentions. Other factors, such as social norms and entrepreneurial capacity, do not significantly influence entrepreneurial choices. Further empirical studies also note that attitudes toward entrepreneurial actions are determinants of entrepreneurial intentions [30], [31].

## 2. METHOD

This study is a type of ex-post facto research. The study encompassed a total of 362 students who were enrolled in culinary vocational schools located in the East Kalimantan Province. The sample distribution comprises four state vocational high schools: State Vocational High School 4 Balikpapan with 234 students, State Vocational High School 4 Tanah Grogot with 42 students, State Vocational High School 2 Penajam Paser Utara with 56 students, and State Vocational High School 4 Penajam Paser Utara with 30 students. Each variable is collected by self-report measures. Students evaluate their judgements of the quality of entrepreneurship education, their attitudes towards behaviour, their perceived behavioural control, subjective norms, and their intentions for culinary entrepreneurship (foodpreneurial). The research questionnaire was derived and formulated based on previous research findings, specifically on the quality of entrepreneurship education [32]. Additionally, a questionnaire was created to assess each variable of the TPB, including attitudes towards foodpreneurial, perceived behavioural control, subjective norms, and culinary entrepreneurial intentions (foodpreneurial), using the work of Liñán and Chen [33] as a reference. Likert scale used in all questionnaires consists of five alternative answers: strongly agree (5), agree (4), neutral (3), disagree (2), and severely disagree (1).

In addition, this study employs structural equation modelling (SEM) analysis utilising partial least square (PLS). PLS is extensively utilised for the analysis of multivariate data in the fields of management and strategy [34]. PLS offers several advantages, including the ability to analyse data that is not normally distributed, the ability to analyse variables with reflective and formative indicators, and the ability to analyse the association between variables with small samples [35]. The analysis is conducted using the SmartPLS 3.0 programme. PLS is a kind of SEM analysis that conducts simultaneous testing of both the measurement and structural models [35]. The outer model, also known as the measurement model, is utilised in partial least square-structural equation modelling (PLS-SEM) studies to elucidate the relationship between indicators and latent variables. It accomplishes this by employing the loading factor parameter and the average variance extracted (AVE) value to assess and validate the measurement model. The criteria employed include a loading factor parameter value exceeding 0.7 and an AVE value surpassing 0.5 [35]. In order to assess the suitability of a structural model for PLS-SEM, one can rely on the following minimum criteria: normed fit index (NFI)>0.800 and standardised root mean square residual (SRMR)<0.080.

## 3. RESULTS AND DISCUSSION

Data on perceptions of culinary vocational students about culinary entrepreneurship intentions (foodpreneurial), the quality of entrepreneurship education, attitudes towards the behavior, perceived behavioral control, and subjective norms collected through the Google Form are processed and analyzed to examine how the role of entrepreneurship education is to form foodpreneurial intentions. The analysis was carried out using a theoretical approach to the TPB involving factors of attitudes towards behavior, perceived behavioral control, and subjective norms about culinary entrepreneurship for students at the excellence vocational high school in the field of culinary arts expertise. The data obtained were analyzed using the SmartPLS-SEM program. Based on the PLS-SEM diagram test, the PLS-SEM diagram is obtained in Figure 1(a). In Figure 1(a), it can be seen that several items have a loading factor below 0.7 [35],

such as AT1, EE3, EE4, EE6, EE7, SN1, and SN4. Furthermore, these items are removed from the model, and a second running model is performed. The factor loading value in the second running model is still below 0.7, namely item SN6 (0.69). Next, the SN6 item is removed from the model, and the model is running, as shown in Figure 1(b).

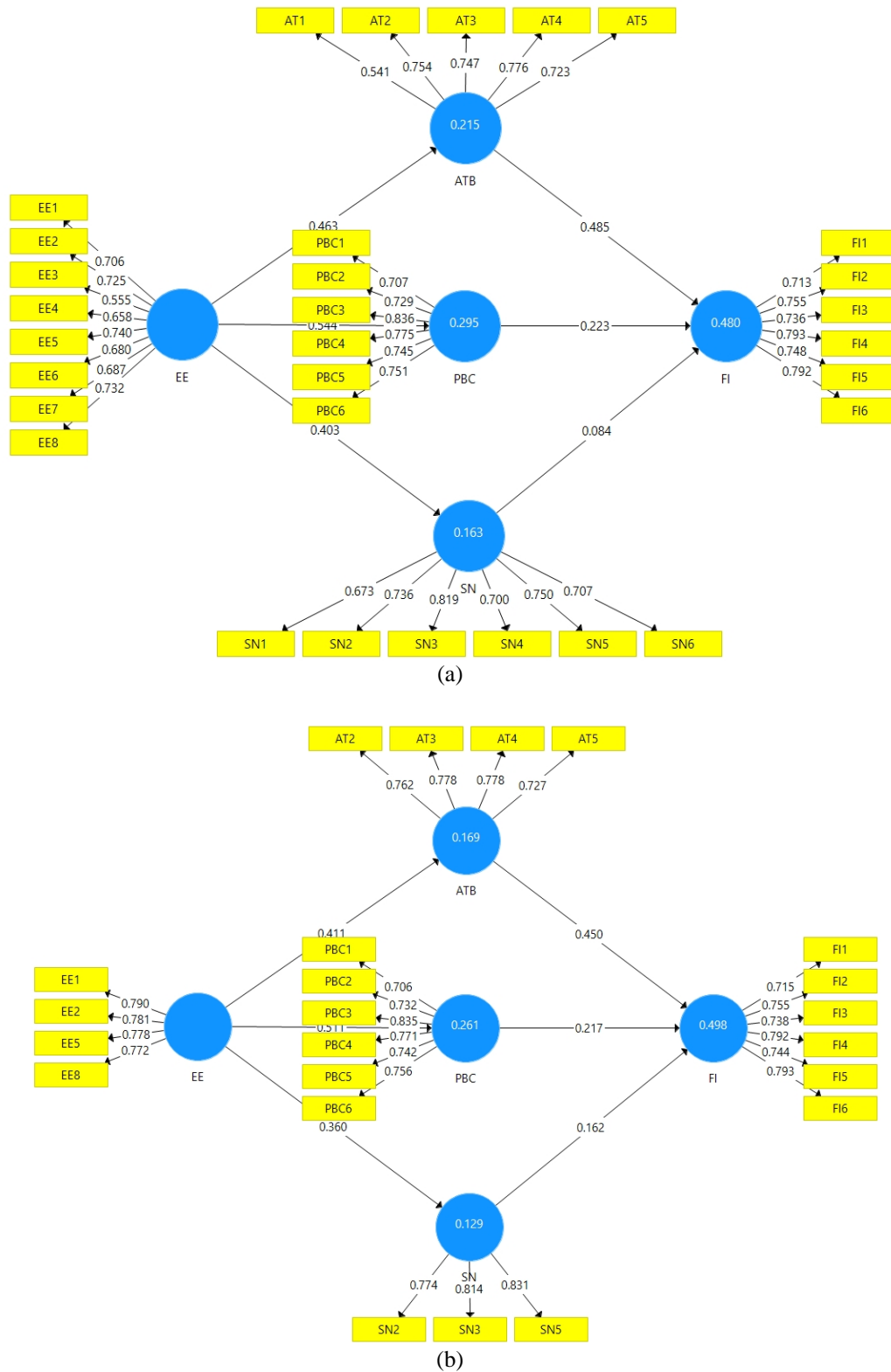


Figure 1. SEM analysis results (a) original model and (b) modification model

### 3.1. Validity and reliability test

The assessment of validity in this study incorporates a test of convergent validity. The assessment of convergent validity was conducted by analysing the loading factor parameter and the AVE value. Measurements are considered to have strong convergent validity if the loading factor value exceeds 0.7 and the AVE value exceeds 0.5 [35]. The outer loading or loading factor values are utilised to assess the convergent validity. An indicator is considered to have convergent validity in the good category if its outer loading value exceeds 0.7. The external loading value of each indication on the research variable is displayed in Table 1. It shows that all items or indicators have an outer loading value greater than 0.7. The findings of the convergent validity study indicate that all items or indicators are considered valid, as none of the items have an outer loading value below 0.7. Moreover, all components were deemed appropriate or relevant for research and might be utilised for subsequent analysis.

The research questionnaire's reliability was assessed by measuring the value of Cronbach's Alpha. The construct is considered credible if its Cronbach's Alpha value exceeds 0.70 [35]. One way to determine the reliability of the instrument is by obtaining Cronbach's Alpha values from Table 1. The calculation of Cronbach's Alpha value in Table 1 indicates that the reliability criteria have been satisfied, since each variable in the instrument has a Cronbach's Alpha value greater than 0.6. The results demonstrate the reliability of the measurement tool used in this study for assessing the variables under investigation.

Table 1. Outer loading measurement model and reliability test

Variable	Indicator	Outer loading	Cronbach's Alpha value
Entrepreneurship education	EE1, EE2, EE5, EE8	0.772-0.790	0.786
Attitudes towards the behaviour	AT2, AT3-AT5	0.727-0.778	0.758
Perceived behavioural control	PBC1-PBC6	0.706-0.835	0.852
Subjective norms	SN2, SN3, SN5	0.774-0.831	0.737
Foodpreneurial intention	FI1-FI6	0.715-0.793	0.850

### 3.2. Hypothesis test

The SmartPLS-SEM software programme was used to analyse the vocational students' impressions of entrepreneurship education, their attitudes towards foodpreneurship, their ability to govern foodpreneurial behaviour, the social influences they experienced (such as social norms), and their plans to become foodpreneurs. Hypothesis testing is conducted after analysing the outer or measurement model. The last stage involves conducting route analysis in PLS-SEM, which entails evaluating the inner model or testing the structural model to determine the direct and indirect effects between variables. The evaluation of the inner model using PLS-SEM involves conducting a model fit test and acquiring path coefficients.

#### 3.2.1. Model fit test (goodness of fit)

Prior to doing the path coefficient test to evaluate the hypothesis, it is essential to determine whether the model satisfies the requirements for goodness of fit. The goodness of fit criterion test evaluates the NFI and SRMR scores. The model's goodness of fit has been confirmed in this study, with an NFI value over 0.8 (NFI=0.827) and an SRMR below 0.08 (SRMR=0.069) [35].

#### 3.2.2. Path coefficient test

The ultimate phase of PLS-SEM analysis involves the examination of the inner model. The evaluation of the inner model or structural model test aims to assess the direct and indirect impacts between variables. The bootstrapping method was used to analyse the relevance of the influence on each path in SmartPLS 3.2.4. The bootstrapping approach is a novel sampling technique that involves repeatedly using the original data [35]. Furthermore, the bootstrapping technique employed in this study was utilised to assess the statistical significance of both direct and indirect effects inside the research model. According to Cheung and Lau [36], utilising bootstrapping confidence interval estimation is the most efficient method for determining the mediating role. This analysis employed 500 bootstrap samples at a confidence level of 95%. The study hypotheses were tested utilising the analysis results obtained through the bootstrapping approach. The findings of the hypothesis testing for this study are presented in Table 2. All hypothesis tests demonstrate statistical significance with p-values<0.05, indicating acceptance of all hypotheses.

Table 2 reveals that the foodpreneurial attitude component, with a coefficient of 0.450, has the most substantial direct impact on determining the intention of vocational students to pursue careers as culinary business actors. Next, the second most important factor, behavioural control and social support, carried on the progression. The primary outcome of interest is the influence of entrepreneurship education on the intention of vocational students to become foodpreneurs. This effect is mostly mediated by their attitudes towards food entrepreneurship, with a coefficient of 0.184. According to the results description, all variables

in this model have a coefficient path with positive values. This demonstrates that the higher the path coefficient value of an independent variable on the dependent variable, the more powerful the influence of the independent factors on the dependent variable.

Table 2. Hypothesis testing results

No	Hypothesis	Original sample	p-values
1	EE->ATB	0.411	0.000
2	EE->PBC	0.511	0.000
3	EE->SN	0.360	0.000
4	ATB->FI	0.450	0.000
5	PBC->FI	0.217	0.000
6	SN->FI	0.162	0.001
7	EE->FI	0.354	0.000
8	EE->ATB->FI	0.184	0.000
9	EE->PBC->FI	0.111	0.000
10	EE->SN->FI	0.058	0.005

Note: EE: entrepreneurship education, ATB: attitude toward behavior, PBC: perceived behavioral control, SN: social norms, and FI: foodpreneurial intention

### 3.3. Discussion

This study aims to investigate the impact of entrepreneurship education on the development of students' entrepreneurial intention in culinary schools. The study model is constructed using the TPB framework. Table 2 confirms the acceptance of the overall research hypothesis on the regression path. The decision is withdrawn when the acquired p-values are less than 0.05 ( $p\text{-values} < 0.05$ ). In particular, entrepreneurship education positively influences foodpreneurial attitudes, foodpreneurial behavior control, and social support (hypotheses 1, 2, and 3 are accepted). Perceptions about the quality of the entrepreneurship education program have encouraged positive changes in attitudes, behavior control, and social support to become a culinary entrepreneur. Theoretically, entrepreneurship education promotes an entrepreneurial attitude, spirit, and culture, which can be applied in various areas of life [19]. So, how does it relate to the TPB theory? This finding also develops the TPB theory that the quality of entrepreneurship education strongly influences the three antecedent factors forming entrepreneurial intentions. A good entrepreneurship education program should be able to equip individuals with the necessary skills and expertise to start their culinary businesses.

Another finding of this study is that students' intentions to become culinary business actors are directly influenced by attitudes, behavior control, and foodpreneur social support (hypotheses 4, 5, and 6 are accepted). This result means that a favorable assessment of a career to become a culinary entrepreneur (attitude towards behavior) will encourage an increase in intention to become a culinary entrepreneur. In a previous study, Ajzen [12] revealed that attitude toward a behavior is one of the antecedent factors for forming intentions. In addition, another essential factor that influences culinary entrepreneurship intentions for vocational school students is perceived behavioral control. Students who positively perceive the ability to become a culinary entrepreneur will affect their intention to become a foodpreneur. This study explains that perceived behavioral control includes a sense of ease, readiness, control ability, technical mastery, and confidence to succeed in the culinary business plan that will be carried out. The higher the sense of trust and power you have to run a culinary business plan, the higher the intention to realize it to become a culinary entrepreneur. Krueger and Kickul [26] revealed that a vital antecedent factor for developing entrepreneurial intentions is the perception of the desirability and feasibility of a business plan.

The influence of the social environment also has a vital role in developing entrepreneurial intentions for vocational students. Study findings related to the impact of social norms on entrepreneurial intentions are also relevant to previous studies [14], [25], [27]. In the context of this study, social norms refer to the influence of the social environment on becoming a culinary entrepreneur. The social environment referred to in this study consists of the impact of special people, family, friends, and entrepreneurs. Therefore, it is essential to build a positive social environment for vocational students so that they become entrepreneurs in the culinary field after they graduate.

When testing the hypothesis on the indirect effect, we observe that the acquisition of p-values for all of the indirect hypothesis is less than 0.05. Attitudes towards foodpreneurial, perceived behavioral control, and social norms act as separate factors that mediate the impact of entrepreneurship education on culinary entrepreneurship intentions among students at the central vocational school of excellence in the culinary field. It has been confirmed that hypotheses 7, 8, and 9 are accepted. Furthermore, the dual mediation test revealed that the combination of attitude towards foodpreneurial, perceived behavioural control, and social norms played a joint role in mediating the impact of entrepreneurship education on the

culinary entrepreneurship intentions of students at the vocational school in the culinary arts field. This finding supports hypothesis 10. The results of this study demonstrate that, based on empirical evidence, the entrepreneurship education programme does not have a direct impact on the formation of students' entrepreneurial intentions. The entrepreneurship education programme initially influences three characteristics that precede entrepreneurial intention, they are: i) attitude towards entrepreneurship; ii) perceived behavioural control; and iii) societal norms. Moreover, the three preceding elements influence students' aspirations to pursue entrepreneurship in the culinary industry.

The development of entrepreneurship education programs in vocational schools can be in the form of real experience-based learning, such as teaching factory learning, school business, and other entrepreneurial projects. Developing entrepreneurial intentions is not enough to rely on classical education in the classroom; it must be able to provide real experience for students to be involved in the planned culinary business process. Conceptually, vocational school students have significant capital to start a business process because they already have technical skills regarding culinary skills. The ability to cook, a vital skill in the culinary business, has been learned. Furthermore, this initial technical skill must be equipped with experience directly involved in the culinary industry of interest. Until now, the teaching factory program is considered one of the vocational schools' flagship programs that combines competency-based and product-based learning. The essential goal of developing a teaching factory is not only profit-oriented but also oriented to learning principles in the business being run.

#### 4. CONCLUSION

The objective of introducing vocational education in vocational schools is to provide aspiring workers with the necessary skills and knowledge to effectively perform in their chosen professions, which may include entrepreneurship. The rapid growth of the culinary industry emphasizes the need for vocational schools to train skilled entrepreneurs in the field of food. Hence, the objective of this study is to construct a structural framework that illustrates how entrepreneurship education programs might influence the culinary entrepreneurial intention (foodpreneurial intention) of vocational school students. This will be achieved by considering their attitudes towards the behavior, perceived behavioral control, and subjective norms.

The study findings indicate that entrepreneurship education has a favorable impact on foodpreneurial attitudes, foodpreneurial behavior control, and social support. Furthermore, the intention of students to become entrepreneurs in the culinary industry is strongly influenced by their attitudes towards food entrepreneurship, their ability to control their entrepreneurial behavior, and the support they receive from their social networks. Additional research has revealed that the impact of entrepreneurship education on the intentions of vocational school students to pursue culinary entrepreneurship is influenced by their attitudes towards foodpreneurial, perceived behavioral control, and social norms. These factors, both individually and in combination, serve as mediators in this relationship. The study specifically focused on students at the centre of excellence in culinary arts.

The implementation of the entrepreneurship education programme at the vocational school is crucial in equipping graduates with the necessary skills and knowledge to pursue careers as culinary entrepreneurs. The findings of this study have significant significance for vocational school educators in designing entrepreneurship education programmes that foster entrepreneurial intents among students, particularly in the culinary domain. The implementation of entrepreneurship education should be structured around a practical, experiential learning strategy, which includes learning from actual production units, teaching factories, guest lectures from successful culinary business professionals, and other similar methods.

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## AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

## CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest regarding the publication of this research. All data collection and analysis were conducted objectively.

## DATA AVAILABILITY

Derived data supporting the findings of this study are available from the corresponding author [TM] on request.

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