THE IMPACT OF CURRICULUM AND EXTRA-CURRICULUM EDUCATION ON ENTREPRENEURIAL INTENTION AND ENTREPRENEURIAL BEHAVIOR OF UNIVERSITY STUDENTS: EVIDENCE IN THE NORTH CENTRAL REGION, VIETNAM

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Abstract: This study applied the theory of planned behavior (TPB) to examine the impacts of entrepreneurial education (curriculum and extra-curriculum education) on entrepreneurial intention and entrepreneurial behavior of university students in the North Central Region, Vietnam. The primary data was collected through a survey from 480 students in 08 universities and only 450 responses were accepted. The results showed that extra-curriculum impacts on students' entrepreneurial intention and behavior more than curriculum. This study showed different impacts between gender and students rooted (business families and non-business families) on entrepreneurial behavior. The study proposed specific policy implications to improve entrepreneurial programs in universities.

Keywords: Entrepreneurial education, Entrepreneurial Intention, Entrepreneurial Behavior, University Students.

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1. Introduction

There have been various studies on the role of entrepreneurial education, which has a strong impact on business activities (Souitaris et al., 2007) and affects students' knowledge, skills, competencies as well as a choice of future career (Paco et al. 2011), especially the under the current trend and intention of entrepreneurial context (Pittaway và Cope, 2007). Due to education, students can improve their knowledge and skills, which would help in creating innovation and adaptation to technology. This should result in high income in the future (Guerrero et al. 2014). Today, entrepreneurial education concentrates on fundamental contents related to the development of personal competencies like group working, creative problem solving, creative thinking, and design thinking, etc. (Neck and Greene 2011). Entrepreneurial education aims at equipping learners with core operating skills, including principles of entrepreneurial business management, communication skills, basic knowledge about trade law, etc. This would greatly help entrepreneurial businesses in the current economic setting. According to the study by Pittaway and Edwards (2012), entrepreneurial education should focus on business and management skills with specific contents of market research, business planning, marketing, financial management, sale, human resource management, competitive advantage management, etc.

In the past years, state authorities have co-operated with relevant agencies to implement extra-

curriculum activities regularly and effectively. Some universities categorize Start-up and innovation as compulsory subjects. Many entrepreneurial projects have been initiated among students, which help them improve their creative thinking, form feasible career orientation, and put a strong impact on their tendency and intention in an entrepreneurial setting. This study aims to give a conclusion about the influencing level of curriculum and extra-curriculum education on the entrepreneurial intention of university students. Then, it proposes policy implications for government to apply suitable orientation for entrepreneurial education in the upcoming time.

2. Theoretical background and research model

2.1. Theoretical background

Entrepreneurial would be regarded as a complex process, which might not follow a specific regression model (Neck and Greene 2011). To encourage students to participate in entrepreneurial activities, entrepreneurial education would equip them with survival skills in the current changing business world. Many researchers agreed that entrepreneurial education activities would be a driver for the prosperity of an individual and a nation (Hanushek, 2016).

To test entrepreneurial behavior, previous researchers used the theory of planned behavior (TPB) (Ajzen and Sheikh, 2016). However, the study by Arnis et al. (2017) pointed out that researching entrepreneur behavior would face various hindrances because personal behavior might be affected by different factors. Ferreira et al. (2012) supposed that it would be essential to concentrate on intention rather than behavior forecast. It is not always common that behavior would be compatible. The behavior might even negate preliminary intention. Regarding entrepreneurial activity, entrepreneurial intentions would be often used as the measurement of personal tendency and interest, which might lead to the proposal and development of an entrepreneurial idea (Thompson, 2009). So far, the entrepreneurial intention has always been regarded as the main motive for studies on the establishment of a startup business.

According to Kolvereid (1996), Walker et al. (2013), and Miranda et al (2017), the application of the TPB model to explain and predict entrepreneurial activity could be appropriate. In particular, the TPB model given by Ajzen (1991) was comprised of 3 components, including attitude towards entrepreneurial behavior, subjective norm, and perceived behavioral control. Amos and Alex (2014) studied that model concerning other factors of environment and demographic characteristics to measure the impact of variables namely gender, family business tradition, and local entrepreneurial ecosystem development on entrepreneurial intention and behavior of students.

2.2. Research model and hypotheses

In the field of entrepreneurship, the theory of planned behavior by Ajzen (1991) is one of the most common theories used to explain an individual's intention of entrepreneurship. The theory of planned behavior by Ajzen (1991) indicated that the intention of a behavior is affected by 3 factors, namely personal attitude; subjective norm, and perceived behavioral control.

Attitude (TD) should refer to a student's reaction to the perceived knowledge after taking part in entrepreneurial courses (Kautonen et al. 2015). This reaction might be positive or negative, depending on the approach that the student perceived the entrepreneurial education. The reaction could be regarded as positive if the student became an entrepreneur. However, it might become negative if entrepreneurial intention and behavior would not bring about achievement as expected (Ajzen, 2005). This attitude would also depend on the specific time of consideration. Also, a student would only expose to the entrepreneurial behavior of education could bring him/her

benefits (Ferreira et al., 2012) and Solesvik et al., 2012).

Subjective norm meant personal perception or perspective built up from the impact of surrounding people (those regarded as so important that they should be listened to and exemplified) (Ajzen, 2005). Maes et al. (2014) demonstrated that in addition to attitude, the subjective norm would have a considerable impact on personal behavior. In entrepreneurial activity, individuals would be greatly affected by others, who are considered important people, influencing their perception and behavior.

Perceived behavioral control (NT). According to the theory by Ajzen (2005), NT should be understood as personal perception established in the context of carrying out a specific expectation easily or difficulty. This perception would be developed based on the reflection of experiences in the past and prediction of possible challenges in the future when there is an intention and implementation of entrepreneurial behavior. Particularly, if previous experiences have a positive meaning, the student might consider his/her action as a feasible plan and he/she can be willing to implement it with readiness for facing potential risks.

However, studies on entrepreneurship based on the theory of planned behavior show that attitude towards subjective norms and perceived behavioral control could only explain 30% to 50% of differences in intention. The possibility to explain would depend on the specific setting and situation (Karimi et al., 2014). The entrepreneurial intention would also be under the impact of educational background, prosperity demand, and capital resources, which had a strong influence on entrepreneurship intention (Amos & Alex 2014).

Therefore, to supplement the above-mentioned theories this study proposed the following model (Figure 1). This model mentions the impact of curriculum and extra-curriculum entrepreneurial education on attitude, the influence of surrounding people; perceived behavioral control. Those elements have an impact on the entrepreneurial intention and behavior of students in universities and colleges in the North Central region.

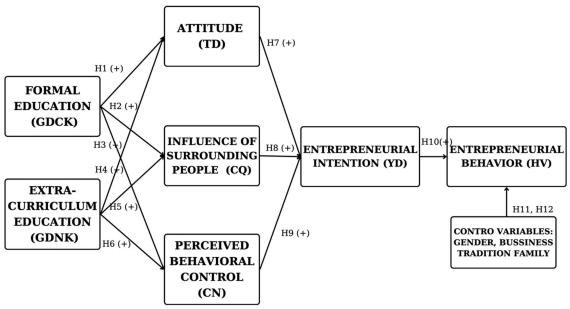


Figure 1: Research model

The followings are the proposed hypotheses:

Hypothesis H1: Curriculum - Formal entrepreneurial education (GDCK) has a positive impact on students' attitudes towards entrepreneurial (TD)

Hypothesis H2: Curriculum - Formal entrepreneurial education (GDCK) has a positive impact on the influence of surrounding people (NAH)

Hypothesis H3: Curriculum - Formal entrepreneurial education (GDCK) has a positive impact on students' perceived behavioral (CN)

Hypothesis H4: Extra-curriculum entrepreneurial education (GDNK) has a positive impact on students' attitudes towards entrepreneurial (TD)

Hypothesis H5: Extra-curriculum entrepreneurial education (GDNK) has a positive impact on the influence of surrounding people (NAH)

Hypothesis H6: Extra-curriculum entrepreneurial education (GDNK) has a positive impact on students' perceived behavioral (CN)

Hypothesis H7: Attitude toward entrepreneurial (TD) has a positive impact on student's entrepreneurial intention (YD)

Hypothesis H8: Influence of surrounding people (NAH) has a positive impact on student's entrepreneurial intention (YD)

Hypothesis H9: Perceived behavioral control (CN) has a positive impact on students' entrepreneurial intention (YD)

Hypothesis H10: Entrepreneurial intention (YD) has a positive impact on students' entrepreneurial behavior (HV)

Hypothesis H11: There is no difference in the mean of males and females in carrying out students' entrepreneurial behavior (HV)

Hypothesis H12: There is no difference in the mean of students with and without business tradition family in carrying out students' entrepreneurial behavior (HV)

3. Research method

This study used the Likert 5 scale from 1 – "extremely disagree" to 5 – "extremely agree" (Weijters et al., 2010) as well as SEM model to clarify the connection of variables suitable with the theoretical model (Hair et al., 2010). AMOS and SPSS 20 were applied to analyze the data and statistical model.

The employment of measurement scale and model variables resulted from consultancy of previous studies, as presented in table 1.

Table 1. Variables and measurement scale

| No | Abbreviation | Content | Source |
|----|--------------|--|--------------|
| | | Curriculum - Formal education (GDCK) | |
| 1 | GDCK1 | Subjects related to entrepreneurship in the curriculum | Urmas |
| | | provide theories on entrepreneurial spirit. | Varblane and |
| 2 | GDCK2 | Subjects related to entrepreneurship in the curriculum | Tõnis Mets |
| | | allow practice of theories on entrepreneurial spirit. | (2010) |
| 3 | GDCK3 | Subjects related to entrepreneurial in the curriculum | |
| | | give favorable condition for students to apply | |
| | | knowledge | |
| | | Extra-curriculum (GDNK) | |
| 4 | GDNK1 | Talkshow inspires entrepreneurship and | Urmas |
| | | entrepreneurial spirit | Varblane and |

| 5 | GDNK2 | Training courses on entrepreneurial knowledge and thinking equip sufficient knowledge and thinking | Tõnis Mets (2010) |
|----|-------|--|-------------------|
| 6 | GDNK3 | Bootcamp program helps practice entrepreneurial skills and spirit | |
| | | Attitude (TD) | |
| 7 | TD1 | Entrepreneurial education is very important to me | Liñán and |
| 8 | TD2 | Entrepreneurial education brings to me many benefits | Chen (2006); |
| 9 | TD3 | Perceived entrepreneurial knowledge and skills will | Solesvik |
| | | help me a lot in the future | (2012) |
| | | Influence of surrounding people (NAH) | |
| 10 | CQ1 | When I have entrepreneurial intentions, my teachers' | Solesvik |
| | | opinions are very important to me | (2012); |
| 11 | CQ2 | When I have entrepreneurial intentions, my family's | Souitaris et al. |
| | | opinion is very important to me | (2007) |
| 12 | CQ3 | When I have entrepreneurial intentions, my friends' | |
| | | opinion is very important to me | |
| 13 | CQ4 | When I have entrepreneurial intentions, the opinion of | |
| | | people I admire is very important to me | |
| | | Perceived behavioral control (CN) | |
| 14 | CN1 | I believe that based on what I learned, I can easily start- | Solesvik |
| | | up | (2012), |
| 15 | CN2 | I believe that based on what I learned, I can kick off | Souitaris et al. |
| | | my entrepreneurial plan immediately | (2007), Liñán |
| 16 | CN3 | Despite risks, I believe that I can kick off my business | and Chen |
| | | plan and start-up in the future | (2009) |
| | | Entrepreneurial intention (YD) | |
| 17 | YD1 | I have entrepreneurial intentions immediately | Liñán and |
| 18 | | I have entrepreneurial intentions as soon as I have all | Chen (2009); |
| | YD2 | resources | Solesvik |
| 19 | | I have entrepreneurial intentions after I have been | (2012) |
| | YD3 | trained with essential knowledge and skills | |
| 20 | | I have a strong determination to carry out my | |
| | YD4 | entrepreneurial activity | |
| 21 | | I am serious about preparing entrepreneurial | |
| | YD5 | conditions since I am a student | |
| | | Entrepreneurial behavior (HV) | |
| 22 | HV1 | I will do entrepreneurial soon | Liñán and |
| 23 | HV2 | I find it easy to decide entrepreneurially | Chen (2009); |
| 24 | | I am proud to be entrepreneurial though I am a new | Solesvik |
| | HV3 | person | (2012) |
| 25 | HV4 | I like entrepreneurial much more than other activity | |

According to Yamane Taro (1967), the identification of sample size without information about the total sample population could be based on the formula: $n = Z2 \times [p \times (1-p)]/e2$

In which: n is the sample size to be identified, Z is the value in the distribution table, Z is based on selected confidence (Z=1.96 when the level of confidence is 95%), p is the estimated proportion of the population that presents the characteristic estimation (p=0.5 so that p (1-p) is the biggest. e is a permissible error ($e=\pm0.05$). Then: n=384.16.

To carry out the quantitative research, the authors conducted a random and convenient survey with students in universities and colleges having the most prominent entrepreneurial activities in the North Central region of Vietnam. The number of questionnaires released was 480, and the number of valid collected ones was 450, which was bigger than 384.16, so the random sample size met the requirement.

To test the research model, the authors used the approach to variables of formal education and extra-curriculum education to measure entrepreneurial intention and behavior based on the impact on attitude, influence of surrounding people, and perceived behavioral control. In addition, the study applied controlled variables of gender and business tradition family to compare differences between researched groups.

The total number of the released questionnaire was 480, and the total number of collected ones was 480. After having filtered, the authors got 450 valid responses (Table 2). The data was inserted with excel software, and variables were coded as in Table 1.

Table 2: Data statistical description

| Criteria | | Frequency | Ratio % |
|-------------------|------------|-----------|---------|
| Gender | Male | 157 | 34.89 |
| | Female | 293 | 65.11 |
| Kind of education | College | 152 | 33.78 |
| | University | 298 | 65.22 |
| N = 450 | • | • | · |

Source: Data analyzed by SPSS 20

After having been collected, data was cleaned with SPSS 20. Hypotheses from H1 to H10 were used to test Cronbach's Alpha, EFA with SPSS 20, confirmatory factor analysis CFA, and SEM analysis of AMOS. For hypotheses from H11 to H12, the authors conducted T-Test with SPSS 20. To process data, the authors carried out the following steps: first, Cronbach's Alpha reliability test; second, exploratory factor analysis EFA; Third, confirmatory factor analysis CFA; Forth, structural equation modeling SEM and hypotheses test; Fifth, evaluation on the impact of relationship between controlled variables of gender and business tradition family on students' entrepreneurial behavior.

4. Research results

4.1. Test of reliability of measurement scale (Cronbach's Alpha)

Table 3 showed that independent variables (after controlled variables were excluded with a correlation coefficient smaller than 0.3) had Cronbach's Alpha from 0.704 and above (>0.6) and the smallest correlation coefficient of 0.352 (> 0.3) showed that independent and dependent variables in the model were applicable.

Table 3: Cronbach's Alpha coefficient of the variables in the model

| No. | Variables | Cronbach's Alpha |
|-----|--------------------------------------|------------------|
| 1 | Curriculum – Formal education (GDCK) | 0.704 |
| 2 | Extra-curriculum education (GDNK) | 0.757 |
| 3 | Attitude (TD) | 0.843 |

| 4 | Influence of surrounding people (NAH) | 0.757 |
|---|---------------------------------------|-------|
| 5 | Perceived behavioral control (CN) | 0.835 |
| 6 | Entrepreneurial intention (YD) | 0.852 |
| 7 | Entrepreneurial behavior (HV) | 0.796 |

Source: SPSS 20

4.2. Exploratory factor analysis EFA

There was EFA into independent and dependent variables of the model. The authors used principal component analysis, and rotation Promax to give seven factors with 24 observed variables (Table 4), KMO = 0.806 (>0.5) with Sig = 0.000, total variance explained was 68.883% (>50%) and Eigenvalue was 1.2545 (>1). The loading factor was bigger than 0.5, so, it could be concluded that the measurement scale of factors was satisfying (Giao & Vuong, 2019).

Table 4: Rotated Component Matrix EFA
Pattern Matrix^a

| 1 attern N | rattern Matrix" | | | | | | | |
|------------|-----------------|------|------|------|------|------|------|--|
| | Compone | ent | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| YD4 | .876 | | | | | | | |
| YD3 | .805 | | | | | | | |
| YD2 | .797 | | | | | | | |
| YD1 | .765 | | | | | | | |
| YD5 | .726 | | | | | | | |
| HV3 | | .923 | | | | | | |
| HV2 | | .877 | | | | | | |
| HV4 | | .652 | | | | | | |
| HV1 | | .635 | | | | | | |
| TD1 | | | .903 | | | | | |
| TD3 | | | .849 | | | | | |
| TD2 | | | .842 | | | | | |
| CN1 | | | | .919 | | | | |
| CN3 | | | | .875 | | | | |
| CN2 | | | | .800 | | | | |
| NAH1 | | | | | .881 | | | |
| NAH2 | | | | | .857 | | | |
| NAH3 | | | | | .792 | | | |
| GDNK2 | | | | | | .845 | | |
| GDNK1 | | | | | | .819 | | |
| GDNK3 | | | | | | .756 | | |
| GDCK1 | | | | | | | .823 | |
| GDCK3 | | | | | | | .819 | |
| GDCK2 | | | | | | | .816 | |

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

4.3. Confirmatory factor analysis CFA

After carrying out EFA, the study used confirmatory analysis CFA to measure the suitability of the model with market data. The authors used AMOS software to test the impact of formal education (GDCK), extra-curriculum education (GDNK), attitude (TD), the influence of surrounding people (NAH), perceived behavioral control (CN), entrepreneurial intention (YD) and entrepreneurial behavior (HV) on each other. To carry out CFA, the study used a result of EFA with 7 main factors and 24 observed variables. After the analysis, the results were presented in Table 5.

Table 5: Indicators to evaluate the result of CFA based on standardized coefficient

| No | Criteria | Value |
|----|------------------------|-------|
| 1 | Chi-square/df | 1.626 |
| 2 | P-value của Chi-square | 0.000 |
| 3 | GFI | 0.936 |
| 4 | TLI | 0.962 |
| 5 | CFI | 0.969 |
| 6 | RMSEA | 0.037 |

Source: AMOS analysis

Chi-square/df was 1.626, smaller than 3 with Sig. (P-value) of 0.000 smaller than 0.05 (smaller than 5 %). This number had statistical significance. Values of GFI were 0.936, smaller than 0.9; TLI was 0.962, bigger than 0.95, CFI was 0.969, bigger than 0.95 and RMSEA was 0.037, smaller than 0.1. So, the model was suitable for market data.

The authors calculated composite reliability and total variance explained by the scales. The results showed that values of composite reliability and total variance explained by the factors were bigger than 0.5, meaning that they were reliable for analysis (Table 6).

Table 6: Composite reliability and total variance explained

| No | Factors | Composite | Total |
|----|---------------------------------------|-------------|-----------|
| | | reliability | variance |
| | | | explained |
| 1 | Curriculum - Formal education (GDCK) | 0.761 | 0.516 |
| 2 | Extra-curriculum education (GDNK) | 0.757 | 0.510 |
| 3 | Attitude (TD) | 0.843 | 0.642 |
| 4 | Influence of surrounding people (NAH) | 0.805 | 0.579 |
| 5 | Perceived behavioral control (CN) | 0.838 | 0.635 |
| 6 | Entrepreneurial intention (YD) | 0.827 | 0.501 |
| 7 | Entrepreneurial behavior (HV) | 0.807 | 0.515 |

Source: Calculation by authors

In addition, the calculation of the P-value of coefficients of each pair showed that P-value was smaller than 0.05 (5%) (Table 7), so the pair correlation of given concepts was different from 1 with a reliability of 95%. So, the given concepts got distinguishing values.

Table 7: Calculation of P-value of pair correlation coefficient

| No | Relationship | | | Estimate | SE | CR | P |
|----|--------------|----|----|----------|-------|--------|------|
| 1 | YD | <> | HV | 0.224 | 0.046 | 16.853 | 0.00 |
| 2 | YD | <> | TD | 0.132 | 0.047 | 18.534 | 0.00 |

| 3 | YD | <> | CN | 0.2 | 0.046 | 17.282 | 0.00 |
|----|------|----|------|-------|-------|--------|------|
| 4 | YD | <> | NAH | 0.131 | 0.047 | 18.553 | 0.00 |
| 5 | YD | <> | GDNK | 0.254 | 0.046 | 16.325 | 0.00 |
| 6 | YD | <> | GDCK | 0.056 | 0.047 | 20.012 | 0.00 |
| 7 | HV | <> | TD | 0.326 | 0.045 | 15.090 | 0.00 |
| 8 | HV | <> | CN | 0.551 | 0.039 | 11.388 | 0.00 |
| 9 | HV | <> | NAH | 0.431 | 0.043 | 13.347 | 0.00 |
| 10 | HV | <> | GDNK | 0.492 | 0.041 | 12.351 | 0.00 |
| 11 | HV | <> | GDCK | 0.12 | 0.047 | 18.762 | 0.00 |
| 12 | TD | <> | CN | 0.322 | 0.045 | 15.158 | 0.00 |
| 13 | TD | <> | NAH | 0.379 | 0.044 | 14.204 | 0.00 |
| 14 | TD | <> | GDNK | 0.424 | 0.043 | 13.462 | 0.00 |
| 15 | TD | <> | GDCK | 0.124 | 0.047 | 18.686 | 0.00 |
| 16 | CN | <> | NAH | 0.341 | 0.044 | 14.838 | 0.00 |
| 17 | CN | <> | GDNK | 0.47 | 0.042 | 12.709 | 0.00 |
| 18 | CN | <> | GDCK | 0.151 | 0.047 | 18.178 | 0.00 |
| 19 | NAH | <> | GDNK | 0.456 | 0.042 | 12.938 | 0.00 |
| 20 | NAH | <> | GDCK | 0.115 | 0.047 | 18.857 | 0.00 |
| 21 | GDNK | <> | GDCK | 0.114 | 0.047 | 18.876 | 0.00 |

Source: Calculation by authors with n=450, n-2=448

So, the results of CFA revealed that the model was suitable with market data, measurement scales guaranteed reliability and concepts got distinguishing values. All these points ensured the analysis of structural equation modeling SEM.

4.4. Analysis into structural equation modeling SEM and test of model hypotheses

To carry out SEM which would show the relationship within formal education (GDCK), extracurriculum education (GDNK), attitude (TD), the influence of surrounding people (NAH), perceived behavioral control (CN), entrepreneurial intention (YD) and entrepreneurial behavior (HV), the authors transformed the model based on CFA to the model based on SEM. The result is presented in figure 2.

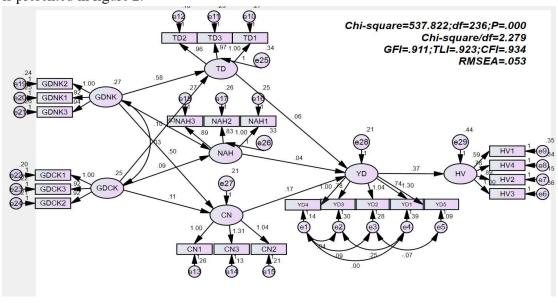


Figure 2: Result of structural equation modeling SEM based on standardized coefficient

Source: AMOS analysis

Based on CFA, it was apparent that the results of the model were compatible with market data. This was proved by Chi-square/df of 2.279 smaller than 3, Sig. (P-value) of 0.000 smaller than 0.05 (smaller than 5 %)-ensuring statistical significance, GFI of 0.911 bigger than 0.9, TLI of 0.923 bigger than 0.9, CFI of 0.934 bigger than 0.9, and RMSEA of 0.053 smaller than 0.1.

Table 8. Testing results of the research hypotheses

| | | | Estimate | S.E. | C.R. | P | Weigh |
|-----|---|------|----------|-------|-------|-------|--------------------|
| TD | < | GDCK | 0,103 | 0,074 | 1,402 | 0,161 | Reject H1 |
| NAH | < | GDCK | 0,087 | 0,075 | 1,166 | 0,244 | Reject H2 |
| CN | < | GDCK | 0,106 | 0,058 | 1,832 | 0,067 | Accept H3 at 10% |
| | | | | | | | significance level |
| TD | < | GDNK | 0,584 | 0,078 | 7,448 | *** | Accept H4 |
| NAH | < | GDNK | 0,628 | 0,081 | 7,778 | *** | Accept H5 |
| CN | < | GDNK | 0,502 | 0,065 | 7,777 | *** | Accept H6 |
| YD | < | TD | 0,056 | 0,04 | 1,379 | 0,168 | Reject H7 |
| YD | < | NAH | 0,043 | 0,041 | 1,032 | 0,302 | Reject H8 |
| YD | < | CN | 0,171 | 0,053 | 3,242 | 0,001 | Accept H9 |
| HV | < | YD | 0,372 | 0,081 | 4,61 | *** | Accept H10 |

Source: AMOS analysis

Based on the results of SEM, it was possible to give the following conclusions:

Variable of extra-curriculum education (GDNK) had more impact on the variable of students' perceived behavioral control (CN) with a coefficient of 0.5. The variable of curriculum – formal education (GDCK) had an impact on perceived behavioral control (CN) with a coefficient of 0.11. This meant that the effectiveness of entrepreneurial training programs under extra-curriculum organization had a stronger impact than official subjects and modules designed on the requirements of universities in the North Central Region.

Perceived behavioral control (CN) had an impact on the entrepreneurial intention of university students in the North Central region with a coefficient of 0.17. At the same time, attitude (TD) and influence from surrounding people (NAH) had no impact strong enough on students' entrepreneurial intention (YD). Then, hypotheses H7 and H8 were disapproved with a significance of 10%.

Entrepreneurial intention (YD) had an impact on entrepreneurial behavior (HV) with a coefficient of 0.37. This meant that variable YD could explain 37% of variable HV. This number was accepted (Ajzen, 1991).

4.5. Evaluation of the role of controlled variables Gender (GTINH) and business tradition family (TRUYENTHONG) on students' entrepreneurial behavior (HV)

To evaluate the role of controlled variables, the study carried out T-Test to give the mean of those variables and test hypotheses H11 and H12. Results of T-Test for the two controlled variables is presented in Table 9.

Table 9. Result of T-Test of 2 controlled variables

| No | Test content | Sig Leneve | Sig T | Conclusion |
|----|-----------------------|------------|-------|-----------------|
| 1 | Impact of GTINH on HV | 0.000 | 0.000 | H11 disapproved |

| 2 | Impact of TRUYENTHONG on HV | 0.000 | 0.000 | H12 disapproved | |
|---|-----------------------------|-------|-------|-----------------|--|
|---|-----------------------------|-------|-------|-----------------|--|

Source: SPSS 20 result

Based on the result of T-Test, it could be concluded that the variable of Gender (GTINH) had a controlled impact on the variable of entrepreneurial behavior (HV). This meant there was a difference in the mean between male and female students in carrying out entrepreneurial behavior (HV). In specific, male students seemed to implement entrepreneurial behavior more than female one. Also, the variable of business tradition family (TRUYENTHONG) had a controlled impact on the variable of entrepreneurial behavior (HV). This meant that students born in a family with a business tradition tended to choose entrepreneurial behavior more than those without this tradition.

5. Discussions and recommendations

The research results showed that the effectiveness of extra-curriculum education was better than that of subjects and modules in the curriculum of universities and colleges in the North Central region. It was concluded that perceived behavioral control (CN) had the strongest impact on the entrepreneurial intention of students in universities and colleges in the North Central region. To improve entrepreneurial activities within the student community, universities should notice the following policies:

First, the institutions should raise students' awareness about independent thinking and confidence to implement entrepreneurial activities. Students should notice the improvement of entrepreneurial business and complete the required knowledge by themselves. The universities should supplement curriculum-formal education with the essential contents of entrepreneurial tools to change students' minds about entrepreneurial activity and provide them with independent thinking and critical thinking skills.

Second, it is necessary to promote students' participation in extra-curriculum courses which are meaningful in propagandizing and inspiring entrepreneurial spirit based on successful entrepreneurial examples. It is also suggested to improve the applicability and practicality of training activities as well as practice chances and occupational skills for students.

Third, universities should actively organize competitions to motivate students to take part in entrepreneurial contests. This would help in forming independent thinking, raising awareness about the idea "Dare to think, Dare to do", and considering entrepreneurship as an experience of reality to quickly access to future career and achieving success and lessons learned for future occupation.

Fourth, it is suggested to improve policies on constructing, developing, and completing entrepreneurial ecosystems in the local area. This would be about favorable conditions for students to access resources for their entrepreneurial activities (like getting to know mentors, policies, financial support, incubation, etc) so that their entrepreneurial behavior can be promoted. Fifth, the regional authorities should enhance policies on propagandizing entrepreneurship in society. It is essential to raise awareness among families, universities, and society about entrepreneurship. This would help in promoting support from these partners for the youth in terms of both physical and mental aspects. At the same time, students would be more confident in their competence to carry out an entrepreneurial activity.

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