

Components Determining the Behavior and Psychological impact of Entrepreneurship among Higher Vocational Students

Muhammad Turki Alshurideh ^a, Turki Al Masaeid ^b, Haitham M. Alzoubi ^{c,*}, Mounir El khatib ^d, Taher M. Ghazal ^e, Samer Hamadne ^f, Nidal A. Al-Dmour ^g, Omar Sattar ^h

Received: 22-September-2022

Revised: 23-November-2022

Accepted: 10-December-2022

^a Department of Marketing, School of Business, The University of Jordan, Amman 11942, Jordan. m.alshurideh@ju.edu.jo.

Department of Management, College of Business Administration, University of Sharjah, Sharjah 27272, United Arab Emirates. malshurideh@sharjah.ac.ae. Orcid: [0000-0002-7336-381X]

^b Abu Dhabi School of Management, Abu Dhabi, UAE, turkimasaeid@gmail.com

^c School of Business, Skyline University College, UAE, haitham_zubi@yahoo.com. Orcid:- [0000-0003-3178-4007]

^d Associate professor, Program Chair, Hamdan Bin Mohamad Smart University, Dubai, UAE, M.Elkhatab@hbmsu.ac.ae

^e Center for Cyber Security, Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia (UKM), -Skyline University College, Sharjah, UAE, taher.ghazal@skylineuniversity.ac.ae, Orcid: 0000-0003-0672-7924,

^f Department of Marketing, School of Business, The University of Jordan, Jordan, s.hamadne@ju.edu.jo

^g Department of Computer Engineering, College of Engineering, Mutah University, Jordan, nidal75@yahoo.com

^h Skyline University College, Sharjah, UAE, omar.sattar@skylineuniversity.ac.ae

*Corresponding author Email: Haitham_zubi@yahoo.com

Abstract

Entrepreneurship of college students has become a hot issue of widespread concern in academia and industry in worldwide. According to the questionnaire survey of students from higher vocational colleges, this paper combines socio-demographic characteristics with entrepreneurship education and analyzes the influence of family background or income & size of family, age group, gender, educational level and school/college entrepreneurship education on entrepreneurship behavior of higher vocational students. Its purpose is to study whether these components can really affect the entrepreneurship behavior of higher vocational students. The paper uses the method of chi-square hypothesis test and logical regression to analyze the different degrees of determining components of entrepreneurship behavior among the students in higher vocational college. The research results shows that the components of gender and family income have a significant impact on entrepreneurship behavior of higher vocational students based on socio-demographic characteristics, which can provide a kind of ideas for the decision-making of entrepreneurship education. The entrepreneurship education of higher vocational college should conduct cross-study from a little reference and enlightenments for the practical research of entrepreneurship education of higher vocational students in future.

Keywords: logical regression, socio-demographic characteristic, Entrepreneurship, questionnaire, survey, hypothesis test

I. INTRODUCTION

In order to improve competitiveness, a nation must rely on scientific research, innovation, entrepreneurship and education to surpass its competitors. This is because the quality of scientific research, innovation, entrepreneurship and education will determine the economic competitiveness of each nation in the world. In the past 20 years or more, many developed countries have suffered so many failures on the entrepreneurship of promoting, learning and disseminating. Therefore, it is necessary to have a clear understanding of hot academic

and policy areas on entrepreneurship.

However, the entrepreneurship of college students has become a hot issue of widespread concern in academia and industry in worldwide. In the current employment situation, EVERY COUNTRY ISSUED many preferential policies to encourage and support college students to achieve employment through entrepreneurship. The framework system of social technology employability measurement provides two new psychometric scales, which are helpful to assess, monitor and evaluate the relationship and influence between specific organization and employability skills. Also, it puts forward a set of indicators on human and social capital, which are effective in the employment environment. Effective engineering education practice is very important to better understand how to support the learning of students from higher vocational colleges [1]. Therefore, creating atmosphere, cultivating awareness, stimulating enthusiasm, enhancing ability and standardizing behavior are important contents of entrepreneurship education and practical research for college students. The entrepreneurship of students in higher specialized college is an important part of entrepreneurship education. Under the guidance and inspiration of entrepreneurship education to higher vocational colleges, the entrepreneurship behavior of higher vocational students run through the process of learning entrepreneurship information, knowledge and skills, looking for and discovering entrepreneurship opportunities, analyzing and judging the feasibility of entrepreneurship projects, and adopting entrepreneurship decision-making and action.

II. CONCEPTUAL FRAMEWORK

2.1 Entrepreneurship

In the past 20 years, the entrepreneurial literature on the theory of planned behavior has made considerable progress [2]. Nowadays, entrepreneurship is considered to be one of the most powerful driving forces in the world economy. Therefore, entrepreneurship intention is the basis of entrepreneurship process. In fact, not every entrepreneur's intentions will eventually translate into actual behavior, but the components on family, entrepreneurial background, age group, gender, university environment and uncertainty avoidance all indeed effect the translation of entrepreneurial intentions into entrepreneurial actions. As the practicability of entrepreneurship is getting stronger and stronger, the sustainable development of entrepreneurship has received a high degree of academic attention. By emphasizing the effectiveness of service learning and the framework conditions of educators, it helps to connect service learning and sustainable entrepreneurship. Students from many countries expressed the need for more entrepreneurial training and education to start new businesses [3]. Entrepreneurship is considered to be another career model for women to gain economic power while maintaining the duty of care, and male get more business success than female in France and Germany. All in all, entrepreneurship may only enhance the abilities of self-employed women living alone [4]. Female create a startup when they are young and childless and postpone maternity to business stability [5]. Although female believe that the information and communication technology skills are the important components of success that cannot be replaced in the 21st century, however, female feel underrepresented in the digital era [6].

2.2 Entrepreneurship Education

Entrepreneurship, as an emerging science to promote economic development, has enabled entrepreneurship education to develop rapidly. More and more students sign up for entrepreneurship projects that bring unprecedented challenges to educators. Entrepreneurial educators usually teach and introduce new frontiers as a way of thinking and acting, and its core is the ability for students to practice entrepreneurship [7]. In fact, it is necessary to assess entrepreneurship education programs to understand the impact of economic development. However, the reasons include the use of subjective indicators, insufficient consideration of objective indicators, etc. It makes the impact of entrepreneurial education on the literature review inconclusive [8]. The positive impact of entrepreneurship education projects is more pronounced when the previous entrepreneurship experience is weak or non-existent. However, for the students who have previous entrepreneurship experiences, the findings highlight that there is the significant counter-effects on the entrepreneurship education projects [9]. College students pay unprecedented attention to the entrepreneurship activities. It is obvious that the students of technical universities develop the important employment skills to meet the market demand. There is no doubt that entrepreneurship education improves the entrepreneurship skills and intentions for students, and entrepreneurship activities promote economic growth. Therefore, design thinking plays an

important role in entrepreneurship education. Challenge-based entrepreneurship courses will lead to cooperation with external participants in the local entrepreneurial ecosystem. These courses use a practice-oriented teaching model to add the significance of entrepreneurship education in multidisciplinary surroundings. Since entrepreneurship is an integral part of the economy, so fostering entrepreneurship through real learning experiences is critical to students. Online discussion skills that incorporate entrepreneurial thinking come from the entrepreneurship courses. Students have a positive influence on the views of online discussions and the development of entrepreneurship mentality.

Teaching and research practices are being redefined by technical education and vocational higher education to achieve more participatory labor market training. The teachers from an Indonesian vocational higher institution face the challenges in their teaching and research [10]. The results of research on entrepreneurship education and entrepreneurial intention are mixed, because entrepreneurial education and entrepreneurial intention have little correlation [11]. In Europe and the United States, entrepreneurship education has a high status on the policy agenda, but few studies assess its impact. It is helpful to investigate whether entrepreneurship education affects intentions or it leads to greater sorting of students [12]. The intention of applying practical simulation in vocational education is often unclear, which makes it difficult to determine the added value of practical simulation in innovative vocational courses. The purpose of innovative vocational courses is not only to cultivate the technical and procedural skills of students, but also to cultivate the abilities and professional identity of students. With the rapid development of entrepreneurship education and training worldwide, the issue of effectively creating human capital through entrepreneurship education and training as a medium has attracted more and more attention from governments. The increasing concern about entrepreneurship education has sparked a debate about whether entrepreneurship education could influence entrepreneurship behavior. There was no doubt entrepreneurship education is effective.

2.3 Socio-demographic Characteristics

At present, socio-demographic characteristics are widely used in different disciplines. In Romania, some researchers discussed the key determinants and socio-demographic characteristics of starting a business [13]. Among the socio-demographic characteristics of residents, the relationship between perceived effects and support could be eased by the age characteristic. Some researchers reviewed recent studies on the impact of socio-demographic characteristics of emigration abroad. Based on the motivation of entrepreneurship between students with disabilities and those without, some researchers analyze the variances with several demographic variables to measurement potential impact of entrepreneurship education on entrepreneurship manner for students. Understanding the socio-demographic characteristics of elderly people who fall can help us determine the typical characteristics and main risks of elderly people who fall [14]. According to the socio-demographic characteristics of social workers, some researchers investigated the burnout status of social workers who are directly engaged in the treatment of children and adolescents who lack humanistic services [15]. Some researchers designated, designed and critically estimated two tools for automatically identifying socio-demographic characteristics of data from Twitter user profiles in the UK [16]. Some researchers used community classification analytics to determine the impacts of community sustainability on American communities.

2.4 Logistic Regression

The three most important uses of logistic regression are to find components, predict and discriminate. In fact, logistic regression is widely used in practice. Some researchers demonstrate the preferred model for applying logical methods and exemplify the logistic regression of data sets applied to test research hypotheses [17]. Therefore, some researchers used logistic regression analysis to identify the key components that affect the entrepreneurial willingness of landless farmers. The results showed that gender, achievement motivation and land acquisition scenarios are the deep seated components affecting land acquisition performance. Some researchers used multiple logistic regression estimation to analyze entrepreneurship intentions, control points, achievement needs, and entrepreneurship education in the Romanian context [18]. Some researchers used binary logistic regression models to illustrate the impact of entrepreneurship. Survival analysis, logistic regression and cox regression analysis showed that there are important differences between self-employment, surplus and

regression models and components that influence higher education to retain entrepreneurs. Some researchers surveyed Italians aged 25 to 35 years old and apply ordinal logistic regression models to illustrate the collected data, and the result verified the predictive ability of the planning behavior theory in the field of longevity annuity purchase. Some researchers have conducted Monte Carlo studies to assess the impact of the number of events for each variable in logistic regression analysis. The results show that no major problems occur for events with a value of 10 or more per variable, but low events per variable can lead to major problems. Some researchers believe that logistic regression would greatly underrate the probability of rare events [19]. However, some researchers believe that the method of selecting variables in logistic regression is mechanical and therefore it has certain limitations [20].

To summarize, the determining components of the entrepreneurship behavior of college students could be divided into personal components and external components. Personal components mainly include socio-demographic characteristics. External components mainly include the components of school, social environment and so on. The social environment components are composed of economic environment, cultural environment, technological environment, policy environment, market environment, employment environment, entrepreneurial environment and so on. The influence of personal components of entrepreneurship behavior for college students is higher than that of external components. Therefore, the influence of external components of entrepreneurship behavior for college students would not be included in this paper.

According to socio-demographic characteristics and higher vocational education practice, we use empirical research methods to analyze the influence of entrepreneurship behavior of higher vocational students. Therefore, we pay more attention to the influence of family background or income & size of family, age group, gender, educational level and school/college entrepreneurship education students' entrepreneurship behavior.

III. RESEARCH METHOD

On the first page of the questionnaire survey, we introduce our research goals, plans and procedures to each of our participants, and obtain the written informed consent from all the participants.

In order to obtain reliable and effective data, we adopt the multi-stage sampling method to conduct a sample survey on the students in different vocational colleges of UAE. Each interviewee is the student of higher vocational college of UAE and familiar with their family and school entrepreneurship education. A total of 400 questionnaires are distributed and 374 valid questionnaires are recovered. Therefore, the effective rate of the questionnaire is 93.5%. Among them, 176 questionnaires are answered by male, accounting for 47.1%, while 198 questionnaires are answered by female, accounting for 52.9%.

According to the purpose of the research and the questionnaire survey of students in higher vocational colleges, we use the five socio-demographic variables of age group, sex, education level, family income, family size and the variable of school entrepreneurship education to measure the entrepreneurship behavior of students in higher vocational colleges. The principal hypotheses are as follows.

Hypothesis 1: The entrepreneurship behavior of higher vocational students has nothing to do with age.

Hypothesis 2: The entrepreneurship behavior of higher vocational students has nothing to do with gender.

Hypothesis 3: The entrepreneurship behavior of higher vocational students has nothing to do with education level.

Hypothesis 4: The entrepreneurship behavior of higher vocational students has nothing to do with family income.

Hypothesis 5: The entrepreneurship behavior of higher vocational students has nothing to do with family size.

Hypothesis 6: The entrepreneurship behavior of higher vocational students has nothing to do with school entrepreneurship education.

In the questionnaire, the variables of family background or income & size of family, age group, gender, educational level and school/college entrepreneurship education were subdivided into several valuations. According to the evaluation and selection, we illustrate the influence of these variables to the entrepreneurial behavior of vocational students. There is a particularity of higher vocational education on the variables valuations of age group and education level. The variable of age group has five valuations such as less than 19,

19, 20, 21, more than 21, expressed by A1-A5 in turn. The variable of education level has three valuations such as freshman, sops and junior, expressed by B1-B3 in turn. The variable of gender has two valuations such as female and male, expressed by C1 and C2 in turn. The family income refers to the monthly per capita income of a family and the variable of family income has five valuations such as less than 3000, 3000 to 5000, 5000 to 7000, 7000 to 10000 and more than 10000, expressed in D1-D5 in turn. The family size refers to including one parent and the student himself at least and the variable of family size has three valuations such as two person households, three person households, four and more person households, expressed by E1-E3 in turn. The variable of school entrepreneurship education has two valuations such as accepting entrepreneurship education and unaccepting entrepreneurship education, expressed by F1-F2 in turn. The details of variables valuations are shown in the TABLE I.

TABLE I. The variables valuations of entrepreneurial behavior of higher vocational students

| Variables | Valuations | Symbol | Variables | Valuations | Symbol |
|-----------------|-------------|--------|----------------------------|-------------------------------|--------|
| Age group | Less than19 | A1 | family income | less than 3000 AED | D1 |
| | 19 | A2 | | 3000 to 5000 AED | D2 |
| | 20 | A3 | | 5000 to 7000 AED | D3 |
| | 21 | A4 | | 7000 to 10000 AED | D4 |
| | More than21 | A5 | | more than 10000 AED | D5 |
| education level | freshman | B1 | family size | Two person households | E1 |
| | sops | B2 | | Three person households | E2 |
| | junior | B3 | | Four or more personhouseholds | E3 |
| gender | female | C1 | entrepreneurshi peducation | accepting | F1 |
| | male | C2 | | unaccepting | F2 |

As the questionnaire survey shown, there are 104 students aged 20, 98 students aged 19, 85 students aged 21. However, there are 46 students less than 19 years old and 41 students more than 21 years old. As shown in Figure 1, 19 students aged 21, 9 students aged more than 21 years old, 14 students aged 20 and 4 students aged 19 participate in entrepreneurship. The rateof participating in entrepreneurship respectively is 22.35%, 21.95%, 13.46% and 4.08%.

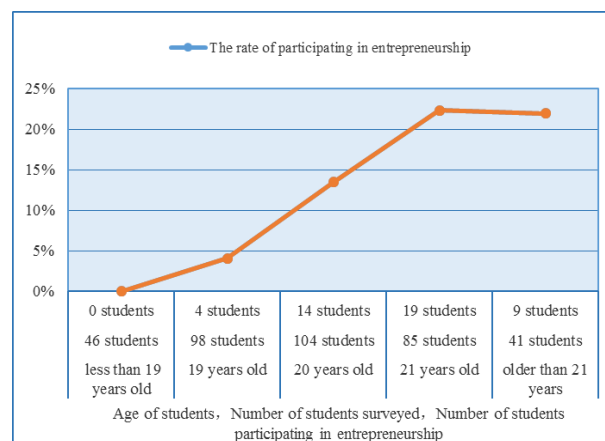


Fig 1: The relationship between age group and participating in entrepreneurship for vocational college students

As the questionnaire survey shown there are 87 freshmen, 142 sophomores and 145 junior students. As shown in Figure 2, 6 freshmen, 18 sophomores and 22 junior students participate in entrepreneurship. The rate of participating in entrepreneurship respectively is 6.90%, 12.68% and 15.17%.

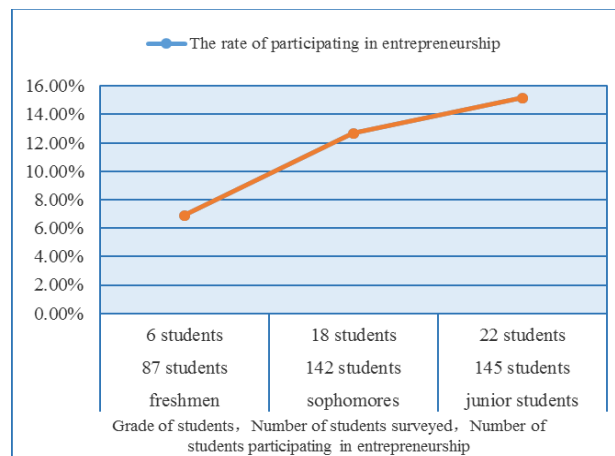


Fig 2: The relationship between education level and participating in entrepreneurship for vocational college students

As the questionnaire survey shown there are 198 females and 176 males. As shown in Figure 3, 12 females and 34 males participate in entrepreneurship. The rate of participating in entrepreneurship respectively is 6.06% and 19.32%. Many scholars have pointed out that men have more advantages in participating in entrepreneurship and are more likely to be successful than women. The results of this study also show that the participation rate of boys in entrepreneurship is much higher than that of girls, which is consistent with the results of previous studies.

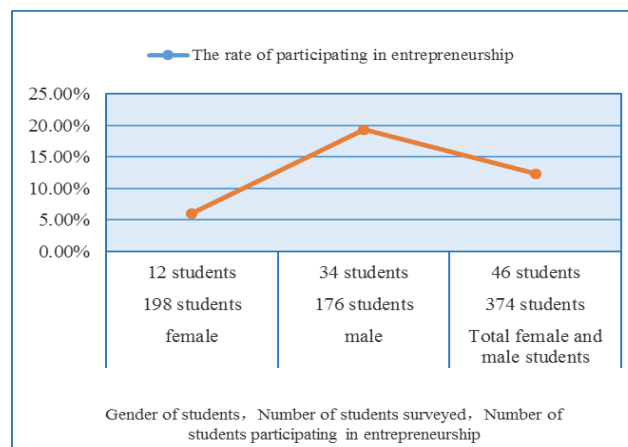


Fig 3: The relationship between gender and participating in entrepreneurship for vocational college students

As the questionnaire survey shown, the per capita monthly income of 103 students is less than 3000 AED, while the per capita monthly income of 43 students is more than 10000 AED. The per capita monthly income of 91 students is between 3000 to 5000 AED and the per capita monthly income of 72 students is between 5000 to 7000 AED and the per capita monthly income of 65 students is between 7000 to 10000 AED. As shown in Figure 4, the per capita monthly income of 14 students with less than 3000 AED, 17 students with 3000 to 5000 AED, 11 students with 5000 to 7000 AED and 4 students with 7000 to 10000 AED participate in entrepreneurship. The rate of participating in entrepreneurship respectively is 13.59%, 18.68%, 15.28% and 6.15%. Some researchers have deeply discussed the application of socio-demographic characteristics in entrepreneurship, and believe that family income has a corresponding impact on entrepreneurial behavior. The results of this study show that the impact of family income on the entrepreneurial behavior of college students is

more important.

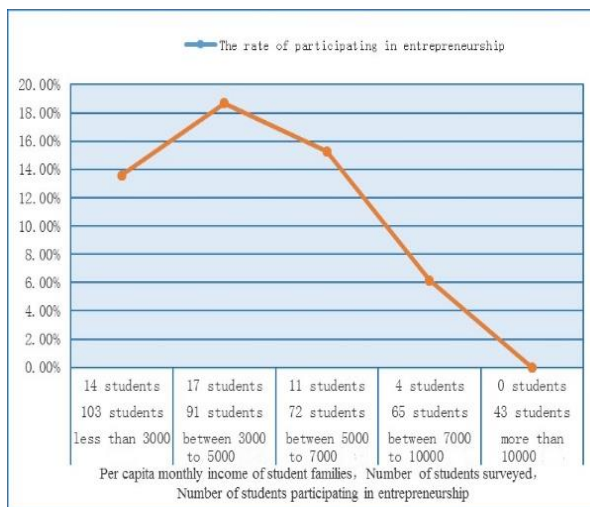


Fig 4: The relationship between family income and participating in entrepreneurship for vocational college students

As the questionnaire survey shown, 261 students live with three person households and 71 students live with four or more person households. However, 42 students live with two person households. As shown in Figure 5, 6 students living with two person households, 29 students living with three person households and 10 students living with four or more person households participate in entrepreneurship. The rate of participating in entrepreneurship respectively is 14.29%, 11.11% and 14.08%.

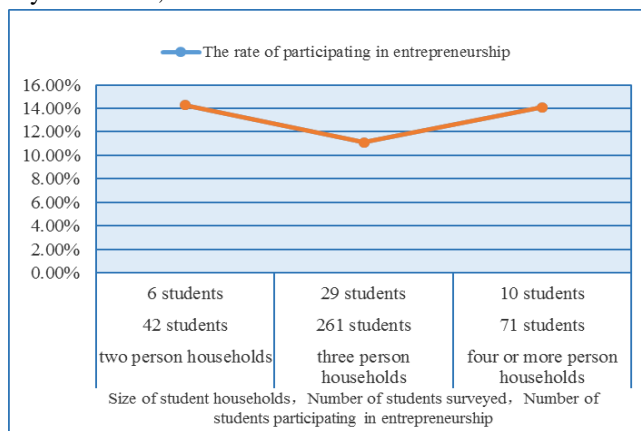


Fig 5: The relationship between family size and participating in entrepreneurship for vocational college students

As the questionnaire survey shown that, 195 students accept school entrepreneurship education while 179 students do not accept school entrepreneurship education. As shown in Figure 5, 31 students accept school entrepreneurship education, who participates in entrepreneurship. However, 15 students do not accept school entrepreneurship education who participates in entrepreneurship. The rate of participating in entrepreneurship respectively is 15.9% and 8.38%. After research, some scholars believe that entrepreneurship education will have obvious adverse effects on students with entrepreneurial experience [8]. The results show that the entrepreneurship rate of students with or without entrepreneurial experience participating in school entrepreneurship education is higher than that of students not participating in school entrepreneurship education. This shows that entrepreneurship education has a positive impact on students.

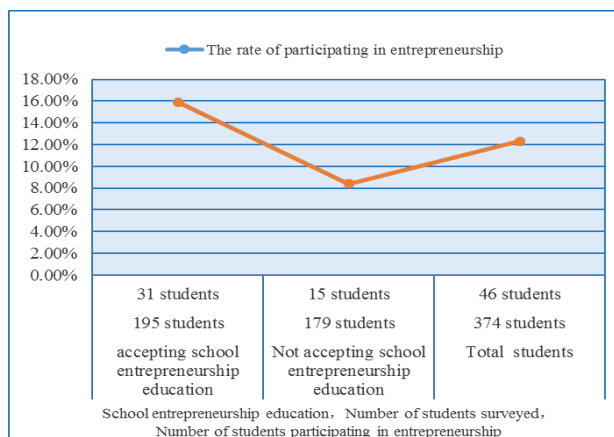


Fig 6: The relationship between entrepreneurship education and participating in entrepreneurship for vocational college students

TABLE II. The summary of chi-square statistics of the original hypothesis 1-6

| Variables | Chi square statistics | df | sig | Critical value | Missing values | Hypothesis test results |
|----------------------------|-----------------------|----|------|----------------|----------------|-------------------------|
| Age group | 24.24 | 4 | 0.05 | 9.49 | 0 | reject H1 |
| education level | 3.48 | 2 | 0.05 | 5.99 | 0 | accept H2 |
| gender | 15.18 | 1 | 0.05 | 3.84 | 0 | reject H3 |
| family income | 12.49 | 4 | 0.05 | 9.49 | 0 | reject H4 |
| family size | 1.17 | 2 | 0.05 | 5.99 | 0 | accept H5 |
| entrepreneurs hipeducation | 4.90 | 1 | 0.05 | 3.84 | 0 | reject H6 |

The summary of chi-square statistics of the original hypothesis 1-6 gives the results of TABLE II. Data shows that the original hypothesis 2 and 5 are valid, so the original hypothesis should be accepted. It shows that education level and family size have no significant influence on the entrepreneurship behavior of higher vocational students. However, the original hypothesis 1, 3 and 4 are not valid, so the original hypothesis should be rejected. It shows that age group, gender, family income and school entrepreneurship education have significant influence on the entrepreneurship behavior of higher vocational students.

According to the hypothesis test results, education level and family size have no significant influence on the entrepreneurship behavior of students. Therefore, it is no longer discussed in the logistic regression analysis.

IV. RESULT

When we analyze the influence of age group, gender, family income and school entrepreneurship education on the entrepreneurship behavior of higher vocational students, students' participation in entrepreneurship is coded for 1 and students' nonparticipation in entrepreneurship is coded for 0.

The variables used in the logistic analysis are defined as follows:

Age, less than 19 years old is coded as 5, 19 years old is coded as 4, 20 years old is coded as 3, 21 years old is coded as 2, and over 21 years old is coded as 1. Gender, coded as 2 for female, 1 for male. Family income, coded 5 for less than 3000 AED, 4 for 3000 to 5000 AED, 3 for 5000 to 7000 AED, 2 for 7000 to 10000 AED, 1 for more than 10000 AED. School entrepreneurship education, coded 2 for accepting school entrepreneurship education, 1 for unaccepting school entrepreneurship education.

In order to make logistic regression analysis to accurately describe the real content reflected by the data, we make a series of scientific tests to ensure the accuracy of the research. Firstly, we test the correlation of the variables determining on the entrepreneurship behavior of higher vocational students. The results show that the correlation coefficients of the variables are less than 0.06. Secondly, the variance expansion components of the variables are less than 2.5 and the tolerances are more than 0.4. It shows that the variables do not exist the

problem of multiple collinearities. TABLE III shows the variable estimation results of the logistic regression model of entrepreneurial behavior of vocational students.

The results of three tests show that gender and family income have more significant effects on the entrepreneurship behavior of higher vocational students than age and school entrepreneurship education.

The gender of higher vocational students has significant effects on the entrepreneurship behavior. 374 questionnaires involve 176 males (47.1%) and 198 females (52.9%). However, among 46 students with entrepreneurial behavior, 34 students are male with the participation rate of 73.9%, while 12 students are female with the participation rate of 26.1%. It seems that males have innate advantages over females in accepting challenges and taking risks bravely. The physical quality, endurance ability and mastery channel resources of females are relatively weak than males. Therefore, the motivation of participating in entrepreneurship for females is insufficient.

TABLE III The variable estimation of logical regression model

| Test | Variables | β | SE | Wald | df | sig | Exp (β) |
|-------------|----------------------------|---------|-------|--------|----|-------|-----------------|
| First test | age | -0.968 | 0.242 | 15.929 | 1 | 0.063 | 0.380 |
| | gender | -1.294 | 0.369 | 12.328 | 1 | 0.047 | 0.274 |
| | family income | 0.322 | 0.138 | 5.479 | 1 | 0.019 | 1.380 |
| | entrepreneurship education | -1.014 | 0.577 | 3.092 | 1 | 0.079 | 0.363 |
| | C | 2.940 | 1.683 | 3.051 | 1 | 0.041 | 18.923 |
| Second test | age | -0.646 | 0.151 | 18.439 | 1 | 0.051 | 0.524 |
| | gender | -1.289 | 0.367 | 12.359 | 1 | 0.036 | 0.275 |
| | family income | 0.354 | 0.138 | 6.635 | 1 | 0.010 | 1.125 |
| | C | 1.334 | 0.797 | 0.176 | 1 | 0.025 | 11.397 |
| Third test | gender | -1.328 | 0.357 | 13.846 | 1 | 0.017 | 0.265 |
| | family income | 0.348 | 0.131 | 7.035 | 1 | 0.008 | 1.417 |
| | C | 1.353 | 0.690 | 3.846 | 1 | 0.000 | 8.258 |

The family income of higher vocational students has significant effects on the entrepreneurship behavior. The entrepreneurial rate of students whose family monthly income is less than 3,000 AED is 13.59%. The entrepreneurial rate of students with a family monthly income of 3,000-5,000 AED per capita was 18.69%. The entrepreneurial rate of students with a family monthly income of 5,000-7,000 AED is 15.28%. The entrepreneurial rate of students with a family monthly income of 7000-10000 AED per capita is 6.15%. Students whose family monthly income is more than 10,000 AED do not participate in entrepreneurship. It shows that students with lower family income may choose to participate in entrepreneurship in order to change financial problems and achieve more income, while students with higher family income do not worry about family economic conditions to participate in entrepreneurship. It means that the most direct motivation of participating in entrepreneurship for students is to pursue economic interests.

V. CONCLUSION

Based on the questionnaire and logistic regression analysis, it is clear that family background or income & size of family, age group, gender, and educational level and school/college entrepreneurship education have different effects on entrepreneurship behavior of higher vocational students. First, gender and family income have a significant impact on students' entrepreneurial behavior. Compared with female students, male students have more entrepreneurial motivation and advantages. Low family income is more likely to encourage students to participate in entrepreneurship and hope to gain benefits; second, school entrepreneurship education has an important positive impact on students' entrepreneurial behavior, and the entrepreneurial knowledge acquired in school is more conducive to the application of entrepreneurial practice. Thirdly, age and family size have little influence on students' entrepreneurial behavior, which also indicates that entrepreneurship breaks through the limitation of age and family structure.

Higher vocational colleges have not changed the demographic characteristics of students' age, gender, education level, family income, and family size, so it just tries to improve the rate of participating in entrepreneurship for higher vocational students by entrepreneurship education [39-42]. This means that it is particularly important to strengthen the entrepreneurial education of students in higher vocational colleges. The employment competitiveness of vocational students is inherently weaker than that of undergraduates. Therefore, deepening the guidance of school entrepreneurship education of vocational colleges and promoting entrepreneurship behavior of vocational students are good ways to promote and realize the employment.

Higher vocational colleges make great efforts in the guidance of school entrepreneurship education and have a positive impact on entrepreneurship behavior of vocational students. However, the strength of education and guidance is insufficient and it needs to be further deepened and strengthened. Therefore, higher vocational colleges should carry out the related work to know the willingness of entrepreneurship and recognize the needs of entrepreneurship for higher vocational students. Higher vocational colleges make great efforts to create an entrepreneurial atmosphere for students, publicize and interpret entrepreneurship policies, set up entrepreneurship guidance courses, establish the practical training bases of entrepreneurship, and provide the opportunities of entrepreneurship practice. Furthermore, higher vocational colleges use appropriate incentives to guide students to implement entrepreneurship project planning and participate in various entrepreneurship competitions. The final purposes of higher vocational colleges are to cultivate entrepreneurial awareness, stimulate entrepreneurial enthusiasm, promote entrepreneurial behavior and enhance entrepreneurial ability for higher vocational students.

VI. DISCUSSION

Based on the questionnaire and logistic regression analysis, to some extent, we only explain the influence of entrepreneurship behavior on vocational college students and reveal the relationship between entrepreneurship behavior of higher vocational students and the variables of age, gender, family income and school entrepreneurship education. However, we can't explain all the determining components and relations of entrepreneurship behavior of vocational students.

In view of the limitations of the components affecting the entrepreneurial behavior of vocational students, further research is needed to break through the limitations in the future. First, it is the sample selection. The research objects of the paper are higher vocational students, not including undergraduates and postgraduates. Therefore, it is impossible to compare the similarities and differences of entrepreneurship behavior among higher vocational students, undergraduates and postgraduates. Second, they are the dynamic components. The paper discusses the influence of social demographic characteristics and school entrepreneurship education on entrepreneurship behavior of higher vocational students. However, there are some dynamic components affecting the entrepreneurship behavior of higher vocational students. In the future, more research methods would be used to study the impact of dynamic components on entrepreneurship behavior on higher vocational students.

REFERENCES

- [1] Virtanen A, Tynjälä P, Eteläpelto A (2014) Components promoting vocational students' learning at work: study on student experiences. *Journal of Education and Work* 27(1): 43-70
- [2] Lortie J, Castogiovanni G (2015) The theory of planned behavior in entrepreneurship research: what we know and future directions. *International Entrepreneurship and Management Journal* 11(4):935-957
- [3] Ozaralli N, Rivenburgh N K (2016) Entrepreneurial Intention: Antecedents to Entrepreneurial Behavior in the USA and Turkey. *Journal of Global Entrepreneurship Research* 6(1): 3
- [4] Eib C, Siebert S (2019) Is female entrepreneurship only empowering for single women? Evidence from France and Germany. *Social Sciences* 8(4): 128
- [5] Kuschel K (2019) Women founders in the technology industry: the startup-relatedness of the decision to become a mother. *Administrative Sciences* 9(2): 30
- [6] Pappas M, Drigas A, Papagerasimou Y, et al. (2018) Female entrepreneurship and employability in the digital era: the case of Greece. *Journal of Open Innovation: Technology, Market, and Complexity* 4(2): 15

- [7] Neck H M, Greene P G (2011) Entrepreneurship education: known worlds and new frontiers. *Journal of Small Business Management*, 49(1): 55-70
- [8] Hernández-Sánchez B R, Sánchez-García J C, Mayens A W (2019) Impact of entrepreneurial education programs on total entrepreneurial activity: the case of Spain. *Administrative Sciences* 9(1):25
- [9] Fayolle A, Gailly B (2015) The impact of entrepreneurship education on entrepreneurial attitudes and intention: hysteresis and persistence. *Journal of Small Business Management* 53(1): 75-93
- [10] Marwan A (2017) ESP teaching challenges in an Indonesian vocational higher institution. *The English Teacher*, 12
- [11] Bae T J, Qian S, Miao C, et al. (2014) The relationship between entrepreneurship education and entrepreneurial intentions: a meta-analytic review. *Entrepreneurship Theory and Practice* 38(2):217-254
- [12] Von Graevenitz G, Harhoff D, Weber R (2010) The effects of entrepreneurship education. *Journal of Economic Behavior & Organization* 76(1): 90-112
- [13] Păunescu C, Popescu M, Duennweber M (2018) Components determining desirability of entrepreneurship in romania. *Sustainability* 10(11): 3893
- [14] Bloch F, Thibaud M, Dugué B, et al. (2010) Episodes of falling among elderly people: a systematic review and meta-analysis of social and demographic pre-disposing characteristics. *Clinics* 65(9): 895-903
- [15] Hamama L (2012) Burnout in social workers treating children as related to demographic characteristics, work environment, and social support. *Social Work Research* 36(2): 113-125
- [16] Sloan L, Morgan J, Burnap P, et al. (2015) Who tweets? Deriving the demographic characteristics of age, occupation and social class from twitter user meta-data. *PloS one* 10(3): e0115545
- [17] Peng C Y J, Lee K L, Ingersoll G M (2002) An introduction to logistic regression analysis and reporting. *The Journal of Educational Research* 96(1): 3-14
- [18] Vodă A I, Florea N (2019) Impact of personality traits and entrepreneurship education on entrepreneurial intentions of business and engineering students. *Sustainability* 11(4): 1192
- [19] King G, Zeng L (2001) Logistic regression in rare events data. *Political Analysis* 9(2): 137-163
- [20] Bursac Z, Gauss C H, Williams D K, et al. (2008) Purposeful selection of variables in logistic regression. *Source Code for Biology and Medicine* 3(1): 17
- [21] Aziz, N., & Aftab, S. (2021). Data Mining Framework for Nutrition Ranking: Methodology: SPSS Modeller. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(1), 85-95.
- [22] Radwan, N., & Farouk, M. (2021). The Growth of Internet of Things (IoT) In The Management of Healthcare Issues and Healthcare Policy Development. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(1), 69-84.
- [23] Cruz, A. (2021). Convergence between Blockchain and the Internet of Things. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(1), 34-53.
- [24] Lee, C., & Ahmed, G. (2021). Improving IoT Privacy, Data Protection and Security Concerns. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(1), 18-33.
- [25] Alzoubi, A. (2021) The impact of Process Quality and Quality Control on Organizational Competitiveness at 5-star hotels in Dubai. *International Journal of Technology, Innovation and Management (IJTIM)*. 1(1), 54-68
- [26] Al Ali, A. (2021). The Impact of Information Sharing and Quality Assurance on Customer Service at UAE Banking Sector. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(1), 01-17.
- [27] Kashif, A. A., Bakhtawar, B., Akhtar, A., Akhtar, S., Aziz, N., & Javeid, M. S. (2021). Treatment Response Prediction in Hepatitis C Patients using Machine Learning Techniques. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 79-89.
- [28] Akhtar, A., Akhtar, S., Bakhtawar, B., Kashif, A. A., Aziz, N., & Javeid, M. S. (2021). COVID-19 Detection from CBC using Machine Learning Techniques. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 65-78.

- [29] Eli, T. (2021). Students Perspectives on the Use of Innovative and Interactive Teaching Methods at the University of Nouakchott Al Aasriya, Mauritania: English Department as a Case Study. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 90-104.
- [30] Alsharari, N. (2021). Integrating Blockchain Technology with Internet of things to Efficiency. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 01-13.
- [31] Ali, N., Ghazal, T.M., Ahmed, A., Ahmad, M., Khan, M.A., Alzoubi, H.M. (2022) Fusion-based supply chain collaboration using machine learning techniques. *Intelligent Automation and Soft Computing*, 31(3), pp. 1671–1687.
- [32] Yanamandra, R and Alzoubi, H M (2022) Empirical Investigation of Mediating Role of Six Sigma Approach in Rationalizing the COQ in Service Organizations. *Operations and Supply Chain Management: An International Journal*, 15 (1). pp. 122-135
- [33] Hanaysha, J.R., Al-Shaikh, M.E., Joghee, S., Alzoubi, H.M. (2021) Impact of Innovation Capabilities on Business Sustainability in Small and Medium Enterprises. *FIIB Business Review*, 11(1), pp. 67–78.
- [34] Joghee, S., Alzoubi, H.M., Dubey, A.R. (2020) Decisions effectiveness of FDI investment biases at real estate industry: Empirical evidence from Dubai smart city projects. *International Journal of Scientific and Technology Research*, 9(3), pp. 3499–3503.
- [35] Mehmood, T. (2021). Does Information Technology Competencies and Fleet Management Practices lead to Effective Service Delivery? Empirical Evidence from E-Commerce Industry. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 14-41.
- [36] Miller, D. (2021). The Best Practice of Teach Computer Science Students to Use Paper Prototyping. *International Journal of Technology, Innovation and Management (IJTIM)*, 1(2), 42-63.
- [37] Khan, M. A. (2021). Challenges Facing the Application of IoT in Medicine and Healthcare. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 39-55. <https://doi.org/10.54489/ijcim.v1i1.32>
- [38] Mondol, E. P. (2021). The Impact of Block Chain and Smart Inventory System on Supply Chain Performance at Retail Industry. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 56-76. <https://doi.org/10.54489/ijcim.v1i1.30>
- [39] Guergov, S., & Radwan, N. (2021). Blockchain Convergence: Analysis of Issues Affecting IoT, AI and Blockchain. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 1-17. <https://doi.org/10.54489/ijcim.v1i1.48>
- [40] Alzoubi, A. (2021). Renewable Green hydrogen energy impact on sustainability performance. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 94-105. <https://doi.org/10.54489/ijcim.v1i1.46>
- [41] Farouk, M. (2021). The Universal Artificial Intelligence Efforts to Face Coronavirus COVID-19. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 77-93. <https://doi.org/10.54489/ijcim.v1i1.47>
- [42] Obaid, A. J. (2021). Assessment of Smart Home Assistants as an IoT. *International Journal of Computations, Information and Manufacturing (IJCIM)*, 1(1): 18-38. <https://doi.org/10.54489/ijcim.v1i1.34>