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## Nascent Entrepreneurial Behaviour Among Medical Students in Malaysia: The Role of Sociodemographic Factors

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### ABSTRACT

Entrepreneurship is a viable option for young doctors looking for careers beyond patient care. Nascent entrepreneurial behaviour is said to predict future entrepreneurship. To understand whether medical students possess an entrepreneurial spirit, this research aimed to assess nascent entrepreneurial behaviour among students at a private medical school in Malaysia and the sociodemographic factors influencing it. A quantitative approach with a cross-sectional survey design was employed. The data were collected from 318 medical students selected by a disproportionate stratified random sampling technique. The respondents rated their nascent entrepreneurial behaviour on a 13-item self-administered questionnaire. The responses obtained were analysed using descriptive and inferential statistical tests. Medical students in Malaysia showed moderately low levels of nascent entrepreneurial behaviour. Among the sociodemographic factors, gender and marital status significantly influenced nascent entrepreneurial behaviour among the medical students. The year of study, ethnicity and family income were insignificant. The low level of nascent entrepreneurial behaviour among medical students in Malaysia implies that they are likelier to be job seekers than job creators. Therefore, higher education institutions across the globe need to foster entrepreneurial values in all students, irrespective of their chosen field of study. An understanding of the sociodemographic factors that influence nascent entrepreneurial behaviour will help policymakers plan remedial steps to inculcate an entrepreneurial mindset among medical students.

**Keywords:** *Nascent entrepreneurial behaviour, Entrepreneurship, Medical students, Sociodemographic factors, Malaysia*

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## INTRODUCTION

A single job for life is no longer a reality. Many doctors are looking for alternative careers (1–4). The COVID-19 pandemic has made matters worse with its impact on medical education (5). Limited patient contact has led to decreased work performance of medical students, resulting in an increase in their stress levels (6). Entrepreneurship or self-employment is a viable option for them. In addition to creating wealth for oneself and one's family, entrepreneurship provides an avenue for doctors to contribute to the field of medical innovations directed at patient-centred care (7). To take up entrepreneurship, medical students need to supplement their clinical knowledge with business skills (8). Educators in many Western medical schools have incorporated courses to inculcate management and innovative skills in their students (9, 10). However, similar initiatives to foster entrepreneurial values in all students, irrespective of their chosen field of study, are not seen across the globe. In Malaysia, the Malaysian Qualification Agency has included entrepreneurial skills as one of the programme outcomes for all undergraduate courses (11). To accomplish this, many Malaysian universities have introduced entrepreneurial activities on their campuses. However, entrepreneurship does not have a place in the formal medical curriculum, which primarily focuses on skills needed for patient care. A substantial gap exists in the literature on the opinions of medical students regarding entrepreneurship (10). The theoretical foundation for predicting entrepreneurial behaviour is traditionally based on the theory of planned behaviour, which states that intentions are strong predictors of any planned behaviour (12). Therefore, most studies focusing on student entrepreneurship have measured their entrepreneurial intentions (13–15). However, recent empirical evidence reveals that entrepreneurial intentions rarely culminate in new venture creation (16). Scholars therefore recommend looking beyond mere intentions (17).

Hence, this research investigated nascent entrepreneurial behaviour among medical students.

Nascent entrepreneurial behaviour refers to activities that follow intentions but precede the actual new venture creation (18, 19). These specific activities signify the seriousness of the individual taking up entrepreneurship as a career in the future (20). Individuals “who not only say they are currently giving serious thought to the new business, but also are engaged in at least two entrepreneurial activities, such as looking for facilities and equipment, writing a business plan, investing money, or organising a start-up team” are nascent entrepreneurs (21, p. 43). Few studies are available in the literature assessing nascent entrepreneurial behaviour among the student population and none assessing it among medical students. Furthermore, scholars believe that sociodemographic and cultural factors influence entrepreneurial behaviour (16, 22, 23). Therefore, this research aimed to identify the level of nascent entrepreneurial behaviour among medical students in Malaysia and to study the sociodemographic factors influencing it.

## METHODS

### Study Setting and Population

This study was conducted in a private medical school in Malaysia that offers an outcome-based curriculum over five years. Entrepreneurial education is not incorporated into the curriculum, but students are encouraged to participate in the graduate employability skills programme offered by the university. The cohort of the 2020 academic year was selected for this study.

### Research Design

A quantitative approach with a cross-sectional survey design was employed as it was the most economical method to collect data from a large population with the least

researcher interference. The data were collected using a questionnaire with close-ended questions.

### Sample Design

The student directory of the 2020 cohort formed the sample frame. A sample size of 318 was calculated using the Krejcie-Morgan table with due consideration for non-responders. A disproportionate stratified random sampling technique was used to select participants from the sample frame. The student population was divided into three strata: final year, clinical (3rd and 4th) years and preclinical (1st and 2nd) years. All the final-year medical students were selected as they were on the verge of making a career choice, accounting for 37% of the sample. Another 33% was drawn from the clinical years, while the remaining 30% came from the preclinical year medical students. The data were collected from April to September 2021.

### Research Instrument

The questionnaire was developed by adapting items from previous studies (24, 25). The questionnaire had two sections. The first section collected information on the respondents' sociodemographic characteristics, such as gender, ethnicity, marital status and family income. The second section had 13 items assessing the respondents' nascent entrepreneurial behaviour on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). These items were evaluated by five academic experts for content validity. Minor modifications were made to avoid ambiguity in the language. The questionnaire was pilot tested with 30 medical students who were not part of the present study population, and reliability analysis was conducted. The Cronbach's alpha was above the threshold of 0.7, indicating good internal consistency among the questionnaire items (26). To evaluate the level of nascent entrepreneurial behaviour, the mean score interpretation method described by Othman (27) was

adapted. According to this scoring rubric, a mean score of 1.00 to 2.00 suggests a low level, 2.01 to 3.00 is moderately low, 3.01 to 4.00 is moderately high and 4.01 to 5.00 is high.

### Ethical Considerations

Ethical approval to conduct this research was obtained from the university's ethical committee prior to the data collection. All the participants were informed about the objectives of the research, assured that their participation in this survey was voluntary and that their anonymity would be maintained. Their informed consent was obtained prior to the survey.

### Data Analysis

The collected data were screened for missing values, outliers and invalid entries and analysed using SPSS software version 26 (IBM Corp., Armonk, NY, US). The focus of the analysis was to test the impact of sociodemographic variables on the nascent entrepreneurial behaviour of the study population. Hence, a linear regression analysis was conducted. For all the analyses performed, a value of  $p < 0.05$  was considered statistically significant.

## RESULTS

A total of 318 students answered the questionnaire. The respondents' profiles were as shown in Table 1, with 68.30% females. Furthermore, 54.09% were Malays, 39.62% were Indians, 2.52% were Chinese, and 3.77% were others. Most students (98.10%) were single. With respect to family income, the majority (68.24%) had a monthly income of <RM10,000, while the rest had higher family incomes. Females outnumbered males in all five years of study. The female preponderance in Malaysian universities is well documented (28). Although all three major ethnic groups in Malaysia were represented in this sample, a larger proportion of Indians can

be explained by the greater representation of this ethnic group in the sample frame. The unmarried status among 98.10% of the sample could be attributed to this study being conducted on undergraduate students whose average age was less than 25 years, while the mean age at marriage in Malaysia is 28 years for males and 27 for females (28).

The data were normally distributed with calculated skewness between  $-2$  and  $+2$  and kurtosis between  $-7$  and  $+7$  (29). The calculated mean score for each of the items measuring nascent entrepreneurial behaviour ranged from 2.3 to 2.8 on the five-point scale, as shown in Table 2. These mean values denoted moderately low levels of nascent entrepreneurial behaviour among the study population (25, 27).

**Table 1:** Demographic profile of the study population (n = 318)

Demographics		Year of study					Total	%
		1	2	3	4	5		
Gender	Male	23	16	8	23	31	101	31.70
	Female	26	33	38	31	89	217	68.30
Ethnicity	Malay	32	22	20	37	61	172	54.09
	Chinese	1	3	1	0	3	8	2.52
	Indian	14	21	21	16	54	126	39.62
	Others	2	3	4	1	2	12	3.77
Marital status	Single	49	49	45	54	115	312	98.10
	Married	0	0	1	0	5	6	1.90
Household income (RM)	<10,000	26	32	35	36	88	217	68.24
	10,000–25,000	22	10	10	13	26	81	25.47
	25,000–50,000	0	5	1	5	5	16	5.03
	>50,000	1	2	0	0	1	4	1.26
Total		49	49	46	54	120	318	100.00

**Table 2:** Mean score for the items measuring nascent entrepreneurial behaviour among the study population

Code	Item	Mean	SD
EB 1	I often hang out with entrepreneurs.	2.777	0.984
EB 2	I often read books/magazines related to business.	2.701	0.971
EB 3	I often surf the internet looking for business opportunities.	2.874	0.881
EB 4	I often engage in business online.	2.777	0.821
EB 5	I regularly attend social gatherings which provides opportunities to meet people related to business.	2.544	0.639
EB 6	I frequently visit trade exhibitions because it allows me to get ideas and identify business opportunities.	2.541	0.897
EB 7	I regularly participate in entrepreneurship workshops organised by the university.	2.506	0.990

(Continued on next page)

**Table 2:** (Continued)

Code	Item	Mean	SD
EB 8	I regularly participate in seminars/entrepreneurship courses organised by the universities.	2.453	0.842
EB 9	I regularly run a part-time business at the university.	2.374	0.936
EB 10	I often review strategic locations to start a business.	2.597	0.988
EB 11	I am often involved in sales related activities organised by the university.	2.538	0.971
EB 12	I often seek advice from government or private agencies about entrepreneurial opportunities.	2.387	0.972
EB 13	I often seek advice from family and friends in the same field as my prospective business.	2.843	0.977
Overall EB		2.663	0.913

**Table 3:** The impact of sociodemographic factors on the nascent entrepreneurial behaviour among the medical students

Demographic	n	Mean	Beta (95%CI)	R <sup>2</sup>	Adjusted R <sup>2</sup>	p-value	
Gender	Male	101	3.029	0.528 (0.279, 0.672)	0.108	0.085	<0.01
	Female*	217	2.483				
Ethnicity	Malay*	172	2.702	-0.541 (-0.789, 0.430)	0.013	0.003	0.589
	Chinese	8	2.509				
	Indian	126	2.654				
	Other	12	2.122				
Year of study	1	49	2.764	0.041 (-0.173, 0.495)	0.009	-0.004	0.504
	2	49	2.793				
	3	46	2.554				
	4	54	2.653				
	5*	120	2.657				
Marital status	Single*	312	2.632	0.180 (0.092, 1.765)	0.035	0.029	<0.01
	Married	6	3.936				
Household income (RM)	<10,000*	217	2.687	-0.682 (-0.700, 0.141)	0.005	-0.004	0.496
	10,000–25,000	81	2.599				
	25,000–50,000	16	2.668				
	>50,000	4	2.115				

Note: \*Group with the maximum number of participants was taken as the reference.

### **Influence of Sociodemographic Factors on the Nascent Entrepreneurial Behaviour of Medical Students**

Linear regression analysis was performed to study the impact of the sociodemographic factors (independent variables) on nascent entrepreneurial behaviour (dependent variable). The results are shown in Table 3.

Gender had a significant impact on the nascent entrepreneurial behaviour scores ( $b = 0.528$ ,  $p < 0.01$ ). Males were found to exhibit greater nascent entrepreneurial behaviour than their female counterparts. Similarly, marital status also had a statistically significant impact on the nascent entrepreneurial behaviour of the medical students ( $b = 0.180$ ,  $p = 0.01$ ), with the married students showing more intent for an entrepreneurial career. However, the ethnicity of the participants, their family income and year of study did not have a significant impact on their nascent entrepreneurial behaviour. Furthermore, the predictive accuracy ( $R^2$ ) of the two sociodemographic variables with a significant impact on nascent entrepreneurial behaviour was calculated. Gender with  $R^2 = 0.108$  and marital status with  $R^2 = 0.035$  denoted weak predictive value for the nascent entrepreneurial behaviour of medical students, as the  $R^2$  values were less than 0.25 (30). Nevertheless, the results show that gender accounted for 10.80% of the variance in nascent entrepreneurial behaviour, while marital status predicted 3.50% of the variance in nascent entrepreneurial behaviour among the medical students.

### **DISCUSSION**

To promote entrepreneurial behaviour, higher educational institutions target students from business, engineering, and vocational courses for both training and assessment of entrepreneurial skills, while students pursuing medicine are largely ignored (31, 32). With the aim of filling in

this gap, the current study assessed nascent entrepreneurial behaviour among medical students. A key finding was that their mean nascent entrepreneurial behaviour score was moderately low. This result mirrors observations by researchers across the globe (33–36). It underlines the harsh reality that medical students have poor entrepreneurial drive which may be due to the lack of robust entrepreneurial courses in medical education (37).

A student's career choice in general and entrepreneurial behaviour in particular is believed to be influenced by various social and cultural factors (38–40). The results of the present study revealed that gender had a significant impact and accounted for 10.80% of the variance in nascent entrepreneurial behaviour among medical students. Males exhibited greater nascent entrepreneurial behaviour than females, with a statistically significant difference in the mean score. Traditionally, entrepreneurial activity has been considered a masculine behaviour (41, 42). The ability to secure finance and take financial risks has mainly been attributed to men (43, 44). In the Asian scenario, scholars believe that greater entrepreneurial self-efficacy among males leads to higher entrepreneurial behaviour (45–47). According to role congruity theory, females are believed to have lower attitudes, subjective norms and perceived behaviour control compared to their male counterparts (48). This role incongruence may lead to females underestimating their capacity, decreasing their self-confidence, and resulting in less nascent entrepreneurial behaviour among female medical students.

Malaysia has a multicultural population with a majority of Malays followed by Chinese, Indians and other indigenous ethnic groups (49). Cultural values are believed to influence an individual's behaviour (50). However, in the present study, no significant difference in the respondents' nascent entrepreneurial behaviour based on their ethnic background was observed, which echoes the findings of previous scholars

(51). With similar ethnic backgrounds in Singapore, Wang and Wong's (2004) research reported that although students of Chinese descent had better business knowledge, it did not transform into higher entrepreneurial behaviour (52).

Most respondents in this study were single which is in line with previous findings on Malaysian undergraduate students (53). Married individuals in the present study demonstrated higher mean scores on nascent entrepreneurial behaviour, which echoes the findings of earlier researchers, who reported higher entrepreneurial attitudes among married individuals (54, 55). Sandhu et al. (47) argue that although married students with their multiple commitments are averse to risk, they are more mature in their thinking, which inclines them towards entrepreneurship. Furthermore, the regression analysis also revealed that the marital status of an individual accounted for 3.50% of the variance in nascent entrepreneurial behaviour among the medical students.

With respect to family income, a vast majority of the students (68.24%) hailed from families with a monthly income of <RM10,000. Based on family income, no significant difference was noted in the mean scores of nascent entrepreneurial behaviour among the participants. The regression analysis revealed that students from families with higher family incomes had less nascent entrepreneurial behaviour. Wang and Wong (52) agree that entrepreneurial interest is mainly based on an individual's drive and not on a family's financial support. Hence, among the sociodemographic factors studied, only gender and marital status had a significant impact on the respondents' nascent entrepreneurial behaviour.

## CONTRIBUTIONS AND LIMITATIONS OF THE STUDY

This research study is the first comprehensive study on the nascent entrepreneurial behaviour of medical students in a developing country. Hence, it contributes to the body of knowledge on students' nascent entrepreneurial behaviour. Second, this study's findings could prove helpful for future researchers to conduct similar research in other countries and cultures. Third, by investigating the role of sociodemographic factors influencing nascent entrepreneurial behaviour among medical students in a multicultural Asian country, it may help in recruiting suitable candidates for entrepreneurial skills training. However, the authors would like to acknowledge some limitations. The inferences of the study were drawn based on the results obtained from a self-administered questionnaire. A mixed-method approach would be more appropriate in future studies to obtain in-depth information. Marital status was not equally distributed among the sample. To authenticate the present study's findings, the authors suggest comparing nascent entrepreneurial behaviour among a larger population of married and unmarried student groups in the future. Additionally, the sample was drawn from a single medical school, which may limit generalisation of the results. Further research on a larger sample of medical students from different institutions across the country is suggested.

## CONCLUSION AND IMPLICATIONS OF THIS STUDY

Medical students demonstrated moderately low nascent entrepreneurial behaviour. The results posit a need for entrepreneurial courses to be incorporated into the medical curriculum. Initially, it could be offered

as an elective for those medical students with an interest in business. With greater knowledge in innovation and managerial skills, they would be more confident in opening private clinics as well as exploring alternative careers in healthcare as managers or as physician-innovators. Thereby, the private sector could share the burden of the government in providing quality healthcare to all citizens. Gender and marital status had a statistically significant impact on nascent entrepreneurial behaviour. Though these sociodemographic variables cannot be manipulated to bring about the desired entrepreneurial behaviour among the study population, they could be useful while planning strategies to enhance entrepreneurship among medical students.

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## ETHICAL APPROVAL

This study was approved by the Management and Science University Ethical Board (MSU-RMC-02/FR01/01/L1/015).

## REFERENCES

1. Labarda MP. Career shift phenomenon among doctors in Tacloban City, Philippines: lessons for retention of health workers in developing countries. *Asia Pac Fam Med*. 2011;10(1):13. <https://doi.org/10.1186/1447-056X-10-13>
2. Cutting J, Adil Salim Elbakri S, Adams HL, Jaunoo S. A national survey of medical student career ambitions. *Bull R Coll Surg Engl*. 2020;102(1):44–7. <https://doi.org/10.1308/rcsbull.2020.44>
3. Brady C, Zarb M. Medical students opinions on the inclusion of non-traditional skills in the curriculum. *J Entrep Educ*. 2018;21(2):152.
4. Deall C., Ghosh S. Demystifying the specialty training application process. *BMJ*. 2016;355.
5. Theoret C, Ming X. Our education, our concerns: The impact on medical student education of COVID-19. *Med Educ*. 2020;54(7):591–2. <https://doi.org/10.1111/medu.14181>
6. Meo SA, Abukhalaf AA, Alomar AA, Sattar K, Klonoff DC. COVID-19 pandemic: impact of quarantine on medical students' mental wellbeing and learning behaviors. *Pak J Med Sci*. 2020;36(COVID19-S4):S43–8. <https://doi.org/10.12669/pjms.36.COVID19-S4.2809>
7. Gonzalo JD, Caverzagie KJ, Hawkins RE, Lawson L, Wolpaw DR, Chang A. Concerns and responses for integrating health systems science into medical education. *Acad Med*. 2018;93(6):843–9. <https://doi.org/10.1097/ACM.0000000000001960>
8. Gonzalo JD, Dekhtyar M, Hawkins RE, Wolpaw DR. How can medical students add value? Identifying roles, barriers, and strategies to advance the value of undergraduate medical education to patient care and the health system. *Acad Med*. 2017;92(9):1294–301. <https://doi.org/10.1097/ACM.0000000000001662>
9. Niccum BA, Sarker A, Wolf SJ, Trowbridge MJ. Innovation and entrepreneurship programs in US medical education: a landscape review and thematic analysis. *Med Educ Online*. 2017;22(1):1360722. <https://doi.org/10.1080/10872981.2017.1360722>
10. Watson A, MacDowell C, Khodorov G, Tartaglia J, Weber P. Assessing entrepreneurial characteristics of healthcare students participating in an entrepreneurial-medicine curriculum [version 2]. *MedEdPublish*. 2018;7(2):101. <https://doi.org/10.15694/mep.2018.0000101.2>

11. Malaysian Qualifications Agency (MQA). Malaysian qualification framework. 2nd ed. 2017 [cited 2021 Jul 21]. Available from: <https://www.mqa.gov.my/new/document/mqf/2021/MQF%20Ed%202%2002102019%20updated%2017022021.pdf>
12. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process.* 1991;50(2):179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
13. Jwara N, Hoque, M. Entrepreneurial intentions among university students: a case study of Durban University of Technology. *Acad Entrep J.* 2018; 24(3):1–19.
14. Atiya T, Osman Z. The effect of entrepreneurial characteristics on the entrepreneurial intention of university students in Oman and Sudan. *Entrep Sustain Issues.* 2021;8(4):217–34. [https://doi.org/10.9770/jesi.2021.8.4\(12\)](https://doi.org/10.9770/jesi.2021.8.4(12))
15. Farrukh M, Khan AA, Shahid Khan M, Ravan Ramzani S, Soladoye BSA. Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy. *World J Entrep Manag Sustain Dev.* 2017;13(4):303–17. <https://doi.org/10.1108/WJEMSD-03-2017-0018>
16. Bogatyreva K, Edelman LF, Manolova TS, Osiyevskyy O, Shirokova G. When do entrepreneurial intentions lead to actions? the role of national culture. *J Bus Res.* 2019;96:309–21. <https://doi.org/10.1016/j.jbusres.2018.11.034>
17. Al-Jubari I, Hassan A, Liñán F. Entrepreneurial intention among University students in Malaysia: integrating self-determination theory and the theory of planned behavior. *Int Entrep Manag J.* 2019;15(4):1323–42. <https://doi.org/10.1007/s11365-018-0529-0>
18. Belchior RF, Lyons R. Explaining entrepreneurial intentions, nascent entrepreneurial behavior and new business creation with social cognitive career theory – a 5-year longitudinal analysis. *Int Entrep Manag J.* 2021;17(4):1945–72. <https://doi.org/10.1007/s11365-021-00745-7>
19. Carter NM, Gartner WB, Reynolds PD. Exploring start-up event sequences. *J Bus Ventur.* 1996;11(3):151–66. [https://doi.org/10.1016/0883-9026\(95\)00129-8](https://doi.org/10.1016/0883-9026(95)00129-8)
20. McGee JE, Peterson M, Mueller SL, Sequeira JM. Entrepreneurial self-efficacy: refining the measure. *Entrep Theory Pract.* 2009;33(4):965–88. <https://doi.org/10.1111/j.1540-6520.2009.00304.x>
21. Aldrich HE, Martinez MA. Many are called, but few are chosen: an evolutionary perspective for the study of entrepreneurship. *Entrep Theory Pract.* 2001;25(4):41–56. <https://doi.org/10.1177/104225870102500404>
22. Šubić R, Braje IN, Žagi K. Family background and financial literacy as a prerequisite for entrepreneurial intention of university students. In: Šimurina J, Braje IN, Pavić I, editors. *Proceedings of FEB Zagreb 10th International Odyssey Conference on Economics and Business; 2019 Jun 12–15; Opatija, Croatia. Zagreb, Croatia: Faculty of Economics and Business, University of Zagreb; 2019; 678–89.*
23. Mai NK, Nguyen HA. The factors affecting entrepreneurial intention of the students of vietnam national university — a mediation analysis of perception toward entrepreneurship. *J Econ Bus Manag.* 2016;4(2):104–11. <https://doi.org/10.7763/JOEBM.2016.V4.375>

24. Gieure C, Benavides-Espinosa M del M, Roig-Dobón S. The entrepreneurial process: the link between intentions and behavior. *J Bus Res.* 2020;112:541–8. <https://doi.org/10.1016/j.jbusres.2019.11.088>
25. Othman N, Othman NH. Relationship between entrepreneurial intentions and entrepreneurial career choice behavior among university students. *J Bus Econ.* 2015;6(1):179–86. [https://doi.org/10.15341/jbe\(2155-7950\)/01.06.2015/017](https://doi.org/10.15341/jbe(2155-7950)/01.06.2015/017)
26. Sekaran U, Bougie R. *Research methods for business: a skill building approach.* Hoboken, NJ: John Wiley & Sons; 2016.
27. Othman N. Keberkesanan program keusahawanan remaja di sekolah menengah. PhD diss., Universiti Putra Malaysia; 2002.
28. Department of Statistics Malaysia. Marriage and divorce. 2023 [cited 2023 Dec 4]. Available from: <https://www.dosm.gov.my/portal-main/release-content/marriage-and-divorce-malaysia->
29. Byrne BM. *Structural equation modeling with Mplus: basic concepts, applications, and programming.* 1st ed. New York: Routledge; 2013.
30. Ghasemy M, Teeroovengadam V, Becker JM, Ringle CM. This fast car can move faster: a review of PLS-SEM application in higher education research. *High Educ.* 2020;80:1121–52. <https://doi.org/10.1007/s10734-020-00534-1>
31. Iwanow L, Panczyk M, Zarzeka A, Cieślak I, Jaworski M, Gotlib J. Attempt of assessment of the level of entrepreneurial competence among students of medicine and health sciences – a pilot study. *ICERI2017 Proceedings.* 2017;1:2227–30. <https://doi.org/10.21125/iceri.2017.0648>
32. Bakheet AH. Relationship between attitudes and intentions for business start-up: A case of Omani university and college students. *Acad Entrep J.* 2018;24(2):1–10.
33. Safari Y, Tahmasby F, Karamafrooz MJ. Assessment of Entrepreneurial Skills and Its Association with Social Intelligence in Students of Kermanshah University of Medical Sciences. *Educ Res Med Sci.* 2013;2(2):59–63.
34. Wu J, Wu L. Evaluation of medical college students' entrepreneurial skills and its relationship with social intelligence. *Open J Soc Sci.* 2019;7(4):13–23. <https://doi.org/10.4236/jss.2019.74002>
35. Kohlhaas A, Zwierlein R, Steinhäuser J, Strumann C, Goetz K. Considerations towards management competencies and their associations with becoming self-employed in a future career – a cross-sectional study with medical students in Germany. *Beiträge zur Hochschulforschung.* 2021;4:114–29.
36. Ma Y-B, Bai Z. Research and practice mode of China's innovation and entrepreneurship education. *Tsinghua J Educ.* 2015;36(6):99–103.
37. Li Y, Shen W, Lv Y. Quality evaluation of entrepreneurship education in chinese medical colleges—from the perspective of student cognition. *Front Psychol.* 2020;11:1093. <https://doi.org/10.3389/fpsyg.2020.01093>
38. Kazi AS, Akhlaq A. Factors affecting students' career choice. *J Res Reflect Educ.* 2017;2(2):187–96.
39. Belas J, Gavurova B, Schonfeld J, Zvarikova K, Kacerauskas T. Social and economic factors affecting the entrepreneurial intention of university students. *Transform Bus Econ.* 2017;16(3):220–39.
40. Lee CD. Reconceptualizing race and ethnicity in educational research. *Educ. Res.* 2003;32:3–5.
41. Bakri AA, Mehrez A. Factors influencing entrepreneurial intentions among Arab students. *Int J Entrep.* 2017;21(3):1–17.

42. Israr M, Saleem M. Entrepreneurial intentions among university students in Italy. *J Glob Entrep Res.* 2018;8:20. <https://doi.org/10.1186/s40497-018-0107-5>
43. Haus I, Steinmetz H, Isidor R, Kabst R. Gender effects on entrepreneurial intention: a meta-analytical structural equation model. *Int J Gend Entrep.* 2013;5(2):130–56. <https://doi.org/10.1108/17566261311328828>
44. Hytti U. Contextualizing entrepreneurship in the boundaryless career. *Gend Manag.* 2010;25(1):64–81. <https://doi.org/10.1108/17542411011019931>
45. Arshad M, Farooq O, Sultana N, Farooq M. Determinants of individuals' entrepreneurial intentions: a gender-comparative study. *Career Dev Int.* 2016;21(4):318–39. <https://doi.org/10.1108/CDI-10-2015-0135>
46. Ranwala RS. Difference of entrepreneurial intention among male and female undergraduates. *AIMS Int J Manag.* 2020;14(1):43–51. <https://doi.org/10.3390/joitmc4030027>
47. Sandhu MS, Sidique SF, Riaz S. Entrepreneurship barriers and entrepreneurial inclination among Malaysian postgraduate students. *Int J Entrep Behav Res.* 2011;17(4):428–49. <https://doi.org/10.1108/13552551111139656>
48. Eagly AH, Karau SJ. Role congruity theory of prejudice toward female leaders. *Psychol Rev.* 2002;109(3):573–98. <https://doi.org/10.1037//0033-295X.109.3.573>
49. Sulaiman NFC, Akhir NHM, Hussain NE, Jamin RM, Ramli NH. Data on the impact of socioeconomic status on academic achievement among students in Malaysian public universities. *Data Br.* 2020;31:106018. <https://doi.org/10.1016/j.dib.2020.106018>
50. Berry JW, Poortinga YH, Segall MH, Dasen PR. Cross-cultural psychology: research and applications. Cambridge, England: Cambridge University Press; 2002.
51. Devi A, Ghazi HF, Ariffin IA, Yajid MSA. Level of entrepreneurship competence and readiness among medical students in a private university in Shah Alam, Malaysia. *J Entrep Bus.* 2020;8(1):85–94. <https://doi.org/10.17687/jeb.v8i1.452>
52. Wang CK, Wong P-K. Entrepreneurial interest of university students in Singapore. *Technovation.* 2004;24(2):163–72. [https://doi.org/10.1016/S0166-4972\(02\)00016-0](https://doi.org/10.1016/S0166-4972(02)00016-0)
53. Al-Naggar RA, Bobryshev YV, Mohd Noor NAB. Lifestyle practice among Malaysian university students. *Asian Pac J Cancer Prev.* 2013;14(3):1895–903. <https://doi.org/10.7314/APJCP.2013.14.3.1895>
54. Tamizharasi G, Panchanatham N. An empirical study of demographic variables on entrepreneurial attitudes. *Int J Trade Econ Finance.* 2010;1(2):215–20. <https://doi.org/10.7763/IJTEF.2010.V1.40>
55. Savitha CM, Shankara MH. Factors contributing to entrepreneurial behaviour of rural and urban women. *Int J Farm Sci.* 2014;5(2):217–23.