Entrepreneurial competence is defined as an individual characteristic, such as knowledge, skills, motives, traits, social roles, and self-images that can result in a new creature. Entrepreneurial readiness is defined as a readiness or preparedness of an individual in pursuing the business. Therefore, the aim of the study is to measure the level of entrepreneurial competence and entrepreneurial readiness among the medical students and its association with the sociodemographic factors. A cross-sectional study was conducted on 284 medical students at a private university. The data were collected using a self-administered questionnaire adapted from previous studies. The percentage of respondents who have a high level of entrepreneurial competence is 95%. For entrepreneurial readiness, 17% of the respondents were not ready, while 62% of them needed to re-evaluate themselves before starting any entrepreneurial activity. Only 21% of the respondents were ready to start any entrepreneurial activity. The gender, age, family income, and involvement in entrepreneurial projects are statistically significant to the level of entrepreneurial competence \( (p=0.01, p<0.001, p<0.001, \text{and } p=0.01, \text{respectively}) \). The family background, marital status, age and involvement in entrepreneurial projects are statistically significant to the level of entrepreneurial readiness. \( (p=0.02, p=0.01, p=0.01, \text{and } p<0.001, \text{respectively}) \). The level of entrepreneurial competence is mostly high among medical students, but most of them are not ready or need a re-evaluation before starting any entrepreneurial activity. The age and involvement in the entrepreneurial projects were associated with the level of entrepreneurial competence and entrepreneurial readiness.

**Keywords:** Entrepreneurial Competence; Entrepreneurial Readiness; Medical Students; Private university; Malaysia.
1. Introduction

An entrepreneur is a creator who implements changes in the economy by introducing a new product or new technique of production (Cuervo et al., 2007). Entrepreneurship gives meaning to an activity that involves discovery, analysis, and exploitation of an opportunity to develop new products and services; it organises ways, markets, processes, and materials that did not exist in the past (Griffin-El, 2014). Entrepreneurial competence is characterised as individual features such as expertise, skills, motives, characteristics, social roles, and self-images that can lead to a new creature (Mamabolo et al., 2017). There is a study on the components of entrepreneurial skills, which focuses on three main attributes, namely attitudinal, behavioural, and managerial skills (Kochadai, 2012). Attitudinal competency is a representative of a hypothetical set up on the likes and dislikes of individuals (Davis, 2007). Behaviour competency is a characteristic that has a causal relationship with the effective or superior performance in handling the business (Kochadai, 2012) Managerial competency is an ability to direct the staff and define the outcome and create products that have the best function using the cheapest way (Kochadai, 2012).

Entrepreneurial readiness is defined as an individual’s readiness to pursue the business. Depending on the degree of the approaches by the manufacturer, customer, and shareholder, there are three major readiness sectors, such as readiness for technology, business readiness, and readiness for management (Douglas & Shepherd, 2002). Technology readiness is important to create a new venture, which is up-to-date according to the current technology (Candra & Nasution, 2014). Besides technology readiness, market readiness is also an important sector for entrepreneurs. Entrepreneurs should always be ready to deal with the market’s needs. Entrepreneurs should think about whether the market is ready to accept a new venture, or are they ready to change their suppliers (Douglas & Shepherd, 2002). Management readiness is the entrepreneur’s readiness in handling tasks or funds for the new venture. It is believed that management is the key to become a successful entrepreneur (Edward, 2004).

The new economy allows businesses to emerge and exert pressure to compete effectively on a person with a higher level of skill (Boyles, 2012). Carnegie Institute of Technology reported that 85 per cent of the financial success was because of the skills that include the personality and ability in communicating, negotiating, and leading (Jensen, 2012). In the current era, students are planning for jobs in other businesses. Only a small percentage of graduates become successful entrepreneurs after graduation. Their entrepreneurial ability and entrepreneurial readiness tend to be poor or lack in the medical field compared to successful entrepreneurs from other courses (Brijlal, 2011).

Hence, this study aims to measure the level of entrepreneurial competence and readiness for entrepreneurship among the medical students and their associations with sociodemographic factors at a private university in Shah Alam, Malaysia.

2.0 Methodology of Study

A cross-sectional study was conducted on 284 medical students at a private university in Shah Alam, Malaysia. The sampling method of the study was convenience sampling. The data was collected by self-administered questionnaire adapted from previous studies. The
questionnaires for entrepreneurial readiness from the small business administration (Entrepreneurship Readiness Assessment, 2009) and entrepreneurial competence were obtained from the article, “Attempt of Assessment of the Level of Entrepreneurial Competence among Students of Medicine and Health Sciences” (Iwanow et al., 2017).

The questionnaires have three parts: 1) Part A contains eight questions for the sociodemographic factors; 2) Part B contains 23 questions for the level of entrepreneurial competence; and 3) Part C has 25 questions for the level of entrepreneurial readiness. The ethical approval for this study was obtained from the Research Management Centre (RMC) of the university. The respondents’ information were protected for their human rights. A signed consent form was distributed to each respondent as proof of their agreement in participating in this study. The respondents were informed that their participation should be voluntary, and it is their choice to withdraw anytime during the study process. The response data for questionnaires were entered into the Statistical Package for Social Sciences (SPSS) version 25.0. The chi-square test and independent t-test were conducted to study the relationship between entrepreneurial competence and readiness with the sociodemographic factors. Data summarisations are presented in table forms.

3.0 Result

A total of 284 respondents participated in this study. Table 1 shows the results for the demographic information of the respondents. This study has a total number of 59 male respondents (20.8%) and 225 female respondents (n=225, 79.2%). The highest number of respondents is as follows: Malay (n=165, 58.1%), followed by Indians (n=101, 35.6%), Chinese (n=10, 3.5%), and others (n=8, 2.8%). A total number of 145 respondents (51.1%) were MBBS students, and 139 respondents (48.9%) were BMS students. In terms of marital status, a total of 278 respondents (97.9%) are single, and six respondents (2.1%) are married. About 134 respondents (47.2%) are from entrepreneurial family background, and 150 respondents (52.8%) are from non-entrepreneurial family background. In this study, the highest number of respondents (n=165, 58.1%) are involved in entrepreneurial project, and some of them (n= 119, 41.9%) are not involved in any entrepreneurial projects. The mean age for the respondents is 22.03 (SD=1.944, min=18, and max=31). The mean amount for family income is RM 7,379.11 (SD=7,801.22, min=800, and max=50,000).

Tables 1: Sociodemographic Factors of respondents (n = 284)

| Sociodemographic Factors | FREQUENCY (n) | PERCENTAGE (%) |
|--------------------------|---------------|----------------|
| Gender                   |               |                |
| Male                     | 59            | 20.8           |
| Female                   | 225           | 79.2           |
| Race                     |               |                |
| Malay                    | 165           | 58.1           |
| Chinese                  | 10            | 3.5            |
| Indian                   | 101           | 35.6           |
| Others                   | 8             | 2.8            |
| Course                   |               |                |
| MBBS                     | 145           | 51.1           |

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Table 2 shows the frequency of the level of entrepreneurial competence. A total number of 269 respondents (94.7%) have a high level of entrepreneurial competence, and 15 respondents (5.3%) have a low level of entrepreneurial competence. Table 3 shows the frequency of the level of entrepreneurial readiness. A total number of 49 respondents (17.3%) are not ready to pursue any entrepreneurial activity, 175 respondents (61.6%) need to re-evaluate themselves before they can pursue any entrepreneurial activity confidently, and only 60 respondents (21.7%) are ready to start on any entrepreneurial activity.

Table 2: The level of Entrepreneurial competence

| Level of entrepreneurial competence | No of respondent |
|------------------------------------|------------------|
|                                    | Frequency (n)    | Percentage (%) |
| High level                         | 269              | 95             |
| Low level                          | 15               | 5              |

Table 3: The level of Entrepreneurial competence
Table 3: The Level of Entrepreneurial Readiness.

Table 4 shows the chi square test of independence that compares the sociodemographic factors and the level of the entrepreneurial competence. A significant interaction was found for the level of entrepreneurial competence with gender ($\chi^2 (1) = 10.20, p = 0.010$), entrepreneurial project ($\chi^2 = 6.427, p = 0.011$), age ($\chi^2 (13) = 33.385, p = 0.001$), and family income ($\chi^2 (30) = 51.220, p = 0.009$). A non-significant interaction was found for the level of entrepreneurial competence with race ($\chi^2 = 4.019, p = 0.214$), family background ($\chi^2 (1) = 0.204, p = 0.624$), marital status ($\chi^2 = 1.588, p = 0.208$), and course ($\chi^2 (1) = 0.507, p = 0.476$).

Table 4: Association Between the Level of Entrepreneurial Competence and The Sociodemographic Factors

| Sociodemographic Factors       | Level of entrepreneurial competence | $\chi^2$ (df) | P-value |
|--------------------------------|------------------------------------|---------------|---------|
|                                | High level (n (%)) | Low level (n (%)) |               |
| Gender                         | Male | 51 (18%) | 8 (3%) | 10.20  | 0.01* |
|                                | Female | 218 (77%) | 7 (2%) |         |       |
| Race                           | Malay | 156 (55%) | 9 (3%) | 4.02   | 0.21  |
|                                | Chinese | 8 (3%) | 2 (1%) |         |       |
|                                | Indian | 97 (34%) | 4 (1%) |         |       |
|                                | Others | 8 (3%) | 0 (0%) |         |       |
| Family background              | Entrepreneurial | 126 (45%) | 8 (3%) | 0.20  | 0.62  |
|                                | Non-entrepreneurial | 143 (50%) | 7 (2%) |         |       |
| Course                         | MBBS | 136 (48%) | 9 (3%) | 0.51  | 0.48  |
|                                | BMS | 133 (47%) | 6 (2%) |         |       |
| Marital status                 | Single | 264 (92%) | 14 (5%) | 1.59  | 0.21  |
|                                | Married | 5 (2%) | 1 (1%) |         |       |

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Table 5 shows the chi square test of independence that compares the sociodemographic factors and the level of entrepreneurial readiness. A significant interaction was found for the level entrepreneurial readiness with the family background ($\chi^2 (2)= 7.489, p=0.024$), marital status ($\chi^2=11.851, p=0.01$), entrepreneurial project ($\chi^2 =11.748, p= 0.003$), and age ($\chi^2 (df)=45.053(26), p=0.012$). A non-significant interaction was found for the level of entrepreneurial readiness with gender ($\chi^2 (2)=4.954, p= 0.084$), race ($\chi^2=8.681, p=0.150$), course ($\chi^2(2)=1.617, p=0.446$), and family income ($\chi^2 (60)=72.079, p=0.136$).

Table 5: Association Between the Level Entrepreneurial Readiness and The Sociodemographic

| Sociodemographic Factors         | Level of entrepreneurial readiness | $\chi^2$ (df) | P-value |
|----------------------------------|-----------------------------------|---------------|---------|
|                                  | Not ready | Re-evaluate | Ready    |          |
| Gender                           | Male      | 14 (5%)     | 29 (10%) | 16 (6%)  |
|                                  | Female    | 35 (12%)    | 146 (51%)| 44 (16%) |
| Race                             | Malay     | 23 (8%)     | 110 (39%)| 32 (11%) |
|                                  | Chinese   | 4 (1%)      | 3 (1%)   | 3 (1%)   |
|                                  | Indian    | 21 (7%)     | 57 (20%) | 23 (8%)  |
|                                  | Others    | 1 (1%)      | 5 (2%)   | 2 (1%)   |
| Family background                | Entrepreneurial | 18 (6%) | 79 (28%) | 37 (13%) | 7.49 (2)  | 0.02* |
|                                  | Non-entrepreneurial   | 31 (11%) | 96 (34%) | 23 (8%)  |            |       |
| Course                           | MBBS      | 28 (10%)    | 90 (32%) | 27 (10%) | 1.62 (2)  | 0.45  |
The level of entrepreneurial skills among the medical students in the private university is remarkably high. More than 90% of the medical students in this study have a high level of entrepreneurial skills. One-fifth of the medical students had effectively attempted a business activity. The other three-fifths of the medical student will test them back again.

The finding of this study shows that the level of entrepreneurial competence has a significant relationship with gender. However, previous studies have a different outcome in which males and females have somewhat the level of competences (Endi Sarwoko, 2015). The results for the significance of entrepreneurial project involvement and the level of entrepreneurial competence are consistent with Ismail et al. (2015) that entrepreneurial exposure or education gives rise in the level of entrepreneurial competence of an individual. Zali et al. (2018) reveal that age is a factor that affects entrepreneurial competence, which supports the result of the study on the significance of age with entrepreneurial competence. Family income also shows an association with the level of entrepreneurial competence, which is stated by Moradi and Saeedikiya (2016) that low family income negatively influences the level of entrepreneurial competence of an individual.

On the other hand, there is no significant association between race, family background, course, and marital status with the level of entrepreneurial competence. Alam et al. (2015) stated that there is a significant interaction between race and self-efficacy, which is a trait of entrepreneurial competence, and they disclose that creativity, innovation, and exposure in business are low among Malay entrepreneurs than Chinese entrepreneurs. Additionally, individuals from an entrepreneurial family have better competence as they were well-prepared with skills and knowledge in entrepreneurial activities than individuals from non-entrepreneurial background (Littunen & Hyrsky, 2000). Wickramasinghe and De Zoyza (2009) stated that marital status has an in-dependable relevance to the competency needed in entrepreneurial aspects. The previous study also stated that courses have no significance to the entrepreneurial-related competency (Sánchez, 2011).
The findings of this study show a significant interaction between the level of entrepreneurial readiness and family background, marital status involvement in the entrepreneurial projects, and age. However, the previous study does not support the significance of family background and entrepreneurial readiness; hence, there is no impact on student’s entrepreneurial preparation from the entrepreneurial family background as skills can be obtained by education (Peng et al., 2013). On the other hand, Sandhu et al. (2011) stated that married students tend to avoid entrepreneurial activities. A previous study concluded that more entrepreneurial projects experience could increase the urge to starting entrepreneurial activities (Politis & Landström, 2002).

Otherwise, there is no association between gender, race, course, and family income with the level of entrepreneurial readiness. A previous study revealed that gender and entrepreneurial aim or readiness showed no relation (Marvin et al., 2014). Keong (2008) supports the result of this study by concluding that entrepreneurial readiness, entrepreneurial intention, and self-efficacy have no association with ethnicity or race. However, Othman et al. (2013) stated that universities need to have entrepreneurial educations to encourage students to start their entrepreneurial activities. Findings of a previous study rejected the statement that family income has a high relation to entrepreneurial readiness (Hidayat, 2018).

5.0 Conclusion

The level of entrepreneurial competence is mostly high among medical students. While not all the medical students are seemed to be ready to pursue the entrepreneurial activity. Most of them needs a re-evaluation before starting any entrepreneurial activity. The age and the involvement in entrepreneurial are the main factors that have an association with both Entrepreneurial Competence and Readiness.

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