

Examining The Relationship Between Need For Success And Independence Towards The Entrepreneurial Intentions Among Universities Students

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Abstract

The university needs to play a role as a tertiary institution providing good entrepreneurial facilities and infrastructure to produce more entrepreneurs (Shah & Soomro, 2017). By identifying the program's appropriate type and content, the university can enhance the existing entrepreneurial development modules to make them more attractive and attract more students to participate. The aim of this study is to identify entrepreneurial programs and activities for the university to encourage students' interest in starting a business. The study used stratified sampling to approach target respondents and test the path coefficient results. Structured questionnaires were distributed among the final year students in the UniKL business school, and received 403 responses for data analysis. The findings revealed that the need for success greatly influences entrepreneurial intention. The desire to succeed in life gives one a high motivation and enthusiasm to force them to act towards the goals they desire. Better performance is always led by a high need for achievement, which is one likely to be intrinsically motivated to strive for excellence. The study provides new insights into students' entrepreneurial development modules. This knowledge could assist to make them more attractive and attract more students to participate and encourage them to produce more entrepreneurs with others where best to target business attention with limited resources.

Introduction

Entrepreneurial development has also been enriched by involving higher education students by exposing them to entrepreneurial activity. Students are encouraged to pursue entrepreneurial subjects as one way to nurture them into entrepreneurship (Shamsudin et al., 2021).

Additionally, the Ministry of Higher Education (KPT) recently launched the Institution for

Entrepreneurship Development in Higher Education Institutions in 2010. The entrepreneurship development body aims to produce graduates with entrepreneurial thinking and attributes to increase the number of graduates involved in the entrepreneurship (Al Mamun et al., 2018). It is also part of their mission to cultivate the entrepreneurship as a career and shaping Higher Learning Institutions (HLI) academics, researchers, and administrators who have an entrepreneurial

mindset (Hsuan et al., 2021; Jamaludin et al., 2016).

In general, efforts and initiatives to incorporate entrepreneurial values and skills in HLIs can be divided into (3) the main components of awareness, culture and empowerment, as well as entrepreneurship awareness (Bignotti & le Roux, 2020). These components are implemented through students' involvement in compulsory credit courses throughout their studies and programs involving collaboration with entrepreneurial agencies (Monllor & Soto-Simeone, 2019). Students will be exposed to entrepreneurship basics such as entrepreneur definitions, entrepreneurial advantages, marketing, sales, etc. Students will be evaluated by how they solve problems presented through a case study and give their ideas through a class presentation (Shamsudin et al., 2021).

Recent reports indicated that many university graduates face difficulty getting jobs due to industry and the economy's slow growth (Tomy & Pardede, 2020). Graduates are either not working or working outside their field to continue living.

Entrepreneurial motivation is very important because it is a key push factor for the entrepreneur to work hard and achieve the target to become a successful entrepreneur. Motivation is also necessary to help the entrepreneur overcome difficulties and find solutions to problems (Tognazzo et al., 2017).

This study will identify entrepreneurial programs and activities for the university to encourage students' interest in starting a business. The university needs to play a role as a tertiary institution providing good entrepreneurial facilities and infrastructure to produce more entrepreneurs (Shah & Soomro, 2017). By identifying the program's appropriate type and content, the university can enhance the existing entrepreneurial development modules to make them more attractive and attract more students to participate.

Literature Review

To understand how entrepreneurial intention is the main role that determines an individual to become an entrepreneur (Oliveira & Rua, 2018), the main thing that needs to be understood is the factors that influence entrepreneurial intention. Understanding the factors that affect entrepreneurial intentions will allow higher learning institutions to concentrate on the most significant influencing factors that enable students to become entrepreneurs (Van Gelderen et al., 2008). Many studies have been conducted globally and contain various types of factors that influence students' entrepreneurial intentions. The elements used in these studies are different depending on the objectives of each study (Joensuu-Salo et al., 2020).

The independent variables or factors used in studying entrepreneurial intentions related to university students are entrepreneurial motivation, need for success, and independent and economic motivation. In this study, entrepreneurial motivation is the main factor that will be studied, which also involves other factors, as mentioned above. Despite the positive relationship between the independent variables and entrepreneurial intention, previous studies only based on the internal factor (Santos & Liguori, 2019). This study focuses on external factors like entrepreneurial education or training that can help these students improve their entrepreneurial intentions and convince them to start a business.

Entrepreneurial Intention

Entrepreneurial intentions include a courage to start a firm or work for oneself (Bazan et al., 2020). Besides, it is also a personal type of effort to venture into business creation (Fietze & Boyd, 2017). (Bazan et al., 2020) defines entrepreneurial intention as the states of mind that direct attention, experience and action toward a business concept. (Pruett et al., 2009) describes that entrepreneurial intentions are linked between entrepreneurs as individuals and the context within which a venture is created.

The entrepreneurial intention has been used in many past studies in studying a person's actions to become an entrepreneur (Monllor & Soto-Simeone, 2019). Studies on entrepreneurial intention are also conducted on various groups among school students, universities, community groups and more to identify things that can help them start a business. It is essential to conduct this entrepreneurial intention related study so that those responsible for the area's concerns can improve the environment's quality that can support entrepreneurial activities (Ritz et al., 2019; Huridi et al., 2020).

Some colleges are making an attempt to foster an entrepreneurial spirit among their students. As a result, students gain hands-on experience while also learning in a realistic and practical setting (Shamsudin et al., 2021). These organizations not only create an entrepreneurial environment but also serve as a resource for students interested in starting their own businesses. Meanwhile, universities began to examine initiatives and programs that promote entrepreneurship among their students. It is expected that students will take part in university events that foster entrepreneurial spirit. There are several opportunities and platforms given by colleges to assist students in their entrepreneurial endeavours.

Need for Success

The need for success indicates the personal responsibility for outcomes. People who have a strong desire for success are more likely to work hard to meet their own personal standards and objectives, which may be seen as a type of self-empowerment (Chhabra et al., 2020). It was also brought out that a strong demand for success higher levels of productivity than one with a low need for achievement since success produces intrinsic happiness (McClelland, 2013).

Self-empowerment may also be viewed as a need for success. It is more probable that they will be inspired to work hard and get emotionally attached in their task, when one has a strong desire to succeed (Lee et al., 2021).

Past studies show that an individual with a strong desire for success produce better levels of performance and quality than others with a lower need for success (Kebaili et al., 2017).

Business causes entrepreneurs to face various risks and challenges that can test their resilience, whether they want to continue the business or not. Need of success drives those who have a great need for achievement to exhibit their abilities in conquering challenging challenges while maintaining high standards (Shah & Soomro, 2017). The desire for success incorporates a number of attributes, including accepting personal responsibility for solution to issues; establishing reasonable attainment objectives; taking measured risks; and seeking tangible feedback regarding performance. In addition, it was argued that a person's desire for success included being inventive, anticipating the future, and remaining steadfast during adversity (McClelland, 2013).

Need for Independence

There are some similarities between the need for independence and autonomy (Bizri et al., 2019). Still, independence is more appropriate to be defined as the circumstance of not relying on others for support, help, or supplies. If autonomy is more associated with the power to control something but independence is more not to want to depend on something and prefer to move freely without control (Ojiaku et al., 2018). Independence is also often associated with making decisions about something that makes one want to work alone (Fuller & Pickernell, 2018).

Besides, individuals with these attributes prefer to control their own time to have more flexibility to manage personal life and the freedom to adapt their work approach (A scale). It has been one of the factors influencing entrepreneurial intentions in previous studies. It has been identified as one of the important factors in the early stages of entrepreneurship (Hassan & Shamsudin, 2019).

All entrepreneurs see establishing a firm, no matter how difficult or hazardous (Salem et al., 2019). It may be as a path to "life, liberty and the pursuit of happiness." According to a (Purnomo, 2019), the ability to make your own decisions is viewed as the most valuable quality of an entrepreneur (Kadir & Shamsudin, 2019). Nearly 90% of those polled said that having the freedom to make your own decisions was essential. Having greater flexibility to strike a better work-life balance was close behind. The results, not the causes, are what matter: new jobs and increased productivity (Iakovleva et al., 2013).

Entrepreneurial Training

One of the initial discussions in the study of entrepreneurship is whether entrepreneurs can be taught or not (Tomy & Pardede, 2020). This discussion has created two positions: researchers who support "entrepreneurs are born" and support that "entrepreneurs can be taught" (Pruett et al., 2009). Entrepreneurship training can be defined as a deliberate and systematic effort to change or develop knowledge, skills through learning experiences to influence an individual's intention to start a business. The earliest investment that an entrepreneur needs to invest is not cash capital but the knowledge used as an initial guide to starting a business (Fietze & Boyd, 2017). The business has various risks. It can be reduced through entrepreneurial training that can identify the necessary and unnecessary steps to be taken.

Entrepreneurship training has become an essential tool in new business development. The government has created several courses to teach about entrepreneurship (Santos & Liguori, 2019). This entrepreneurial training is also not just a single event but is a long process and involves several series (Shamsudin et al., 2021).

From the perspective of entrepreneurial development in Higher Learning Institutions (HLI), awareness to provide entrepreneurship training started a decade ago involving efforts from the Government (Tehseen et al., 2019) and

participation from society (Ali et al., 2021; Jamaludin et al., 2016). Most colleges and universities have introduced their entrepreneurship courses or training to provide exposure and cultivate entrepreneurship (Saber & Hamdan, 2019). Universiti Kuala Lumpur (UniKL) creates the subject of Introduction to Entrepreneurship, which covers theoretical topics and applies it in practical form through the internal activities. Students are also involved in various other activities such as seminars, summits, training, camps, and others to become entrepreneurs

Methodology

This study's population is based on the students of higher learning institutions involved in entrepreneurship programs. This final year degree students are usually involved in various entrepreneurial activities and have sufficient business knowledge. This experience and expertise made them understand the survey questions and give a good response. They achieved the objectives of the study. Data collection using online questionnaires distributed through Google form survey. The sample data selected from current students in the UniKL business school. Stratified sampling used to approach target respondents to distribute the web survey link. The sample size for this study was 375 (Krejcie et al., 1996), and 450 questionnaires were distributed to the target respondents. The sample of this study consisted of students from UniKL. Four hundred and fifty (450) questionnaires were distributed to them, and 403 questionnaires were returned. However, 13 of the data were rejected based on the filter questions, and the total usable data for the analysis was 390.

Findings

Respondents' demographics.

The results indicate that almost 70% of respondents were female, and 30% were male. There are no specific reasons for the gap between gender, but the female was normally more participative in attending surveys and

helping others. Past research on gender participation in the survey revealed that female was more supportive than male (Marcus & Schütz, 2005; Smith, 2008). The result also indicates that most ages are between 21 and 22 years old. The age reflects the final year students of the Diploma and first or second year of the degree program. The highest participation was from business faculties, while the lowest was engineering faculties. More respondents from private universities were active in

promoting entrepreneurial activities led by the student clubs, university effort, and curriculum embedded in the program structures. 45% of respondents were very certain they wished to be an entrepreneur, while another 40% probably agreed. Only 2.5% were very confirmed that they would not be an entrepreneur. 97% of respondents were willing to explore and learn to develop their entrepreneurial intentions compared to a very small percentage of rejection of the idea of being entrepreneurs.

Table 2. Descriptive analysis.

Constructs	Mean	Std. Deviation	Minimum	Maximum
Entrepreneurial Intention	4.21	0.891	1	5
Need For Success	4.27	0.813	2	5
Need For Independence	3.64	1.036	1	5
Entrepreneurial Training	4.23	0.861	1	5

Descriptive statistics for entrepreneurial intentions, need for success, need for independence and entrepreneurial training are presented in Table 2. The mean of entrepreneurial intention is 4.21, with a standard deviation of 0.891. For need for success, the mean is 4.27, with a standard deviation of 0.813. whereas mean for need for independence is 3.64 with a standard deviations of 1.035. Entrepreneurial training obtained a mean of 4.23, with a standard deviation of 0.861.

Tables 3 and 4 show that the findings of the measurement model were statistically acceptable in terms of reliability, convergent validity, and discriminant validity.

A PLS model analysis is provided through a two-step approach (Ramayah et al., 2016). The

main and mediating outcomes are examined using the PLS technique. The first measurement is related to the validity and reliability followed by the structural model assessment. The coefficients and loadings were determined using a bootstrapping technique in accordance with Hair et al. (2017). (Joseph F. Hair et al., 2014) reported that the factor loadings, composite reliability, and average variance extracted were used to assess the measurement model's convergent validity (AVE). Table 3 shows that the items' factor loadings all surpassed 0.7 (J. F Hair et al., 2017). Cronbach alpha, CRs and AVE value was reported to be above the cut-off values of 0.7 and 0.5, respectively (Joseph F. Hair et al., 2012).

Table 3. Convergent validity

Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
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Entrepreneurial Intention	Entint 1	0.854	0.919	0.937	0.711
	EntInt 2	0.848			
	Entint 3	0.802			
	Entint 4	0.853			
	Entint 5	0.876			
	Entint 6	0.825			
Need For Success	NFS 1	0.795	0.855	0.892	0.58
	NFS 2	0.811			
	NFS 3	0.781			
	NFS 4	0.736			
	NFS 5	0.724			
	NFS 6	0.720			
Need For Independence	NFI 1	0.623	0.753	0.83	0.552
	NFI 2	0.747			
	NFI 3	0.801			
	NFI 4	0.788			
Entrepreneurial Training	EntTra 1	0.911	0.961	0.937	0.711
	EntTra 2	0.930			
	EntTra 3	0.940			
	EntTra 4	0.931			
	EntTra 5	0.879			
	EntTra 6	0.903			

Each factor's discriminant validity was assessed using the AVE square root. In order to obtain discriminant validity, the AVE square root must be greater than the correlation between the components in the model (Ramayah et al., 2016). The significance of bold, (see Table 4), is that the reflective construct entrepreneurial intention has a value of 0.843, entrepreneurial training has a value of 0.916, need for independence has a value of 0.743 and need for success has a value of 0.762 for the square root

of its AVE. Generally, the reflective constructs of the bold are all higher than the correlations of these constructs with other latent variables in the path model, therefore indicating all constructs are valid measures of unique concepts.

The analysis of this study revealed that the empirical outcome of the hypotheses related to the need for success and independence towards the students' entrepreneurial intentions.

Table 4. Fornell-Larker discriminant validity

	Entrepreneurial Intention	Entrepreneurial Training	Need For Independence	Need For Success
Entrepreneurial Intention	0.843			
Entrepreneurial Training	0.563	0.916		
Need For Independence	0.405	0.422	0.743	

Need For Success	0.725	0.600	0.445	0.762
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Structural models conclude with a test of path coefficients to determine the strength of the correlation between independent and dependent variables. A bootstrap method was used to estimate standard errors and t-statistics in this study. As can be seen in Table 5, the pathway coefficients and bootstrapping results were calculated. The results show that the hypothesis H1 is acceptable ($\beta = 0.584$, $t = 9.583$, $p < 0.05$). Such results indicates clearly a strong need for success is an important motivator for aspiring entrepreneurs and lead to the entrepreneurial intentions. The statistical data indicated that the demand for success had a substantial impact on entrepreneurial intentions. The conclusion drawn from this study is that those who have a greater desire for success are more likely to start their own businesses. Thus, H1 has been accepted.

On the other hand, this result revealed that need for independence does not improve the relationship towards entrepreneurial intentions ($\beta = 0.067$, $t = 1.484$, $p > 0.05$). A similar conclusion was drawn by prior researchers who found insignificant relationship between need for independence and entrepreneurial intentions. thus H2 is not supported. This means that the hypothesis between need for independence towards entrepreneurial intentions is not significant. Based on the result, H2 is rejected.

This research also supports the direct relationship between entrepreneurial training towards entrepreneurial intentions ($\beta = 0.184$, $t = 3.545$, $p < 0.05$. Based on the results, H3 is accepted.

Table 5. Hypothesis testing.

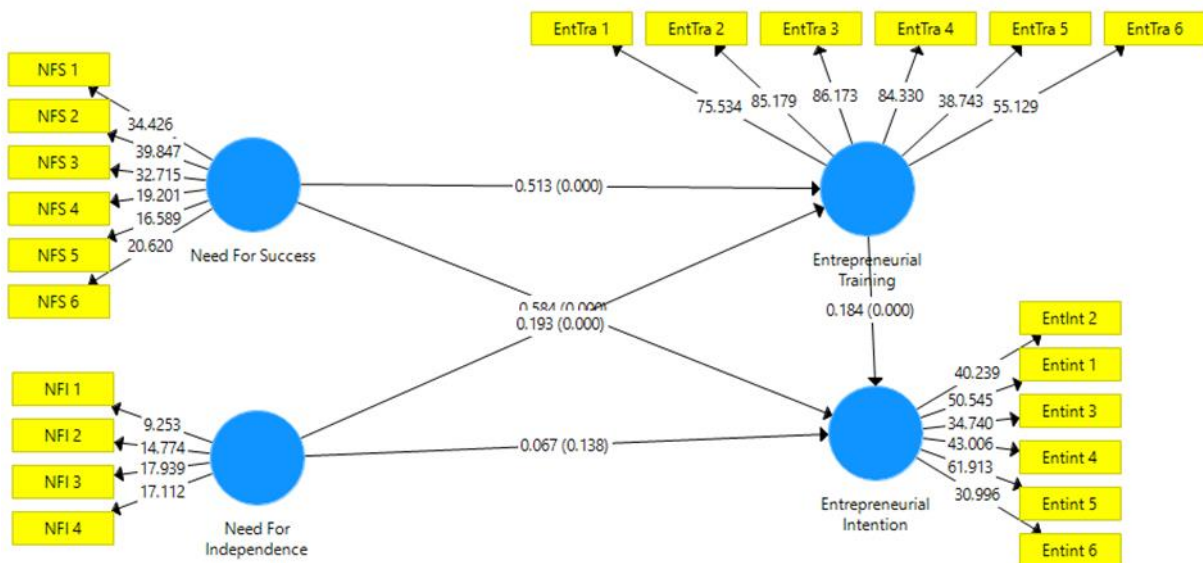
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Need For Success → Entrepreneurial Intention	0.584	0.585	0.061	9.583	0.000
Need For Independence → Entrepreneurial Intention	0.067	0.068	0.045	1.484	0.138
Entrepreneurial Training → Entrepreneurial Intention	0.184	0.186	0.052	3.545	0.000
Need For Independence → Entrepreneurial Training → Entrepreneurial Intention	0.036	0.036	0.012	3.058	0.002

Need For Success → Entrepreneurial Training → Entrepreneurial Intention	0.095	0.097	0.034	2.784	0.006
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As presented in Table 5, bootstrapping results regarding the mediating effect of entrepreneurial training on the link between need for success and need for independence towards entrepreneurial intentions show that the both of the indirect measurement influence of need for success and need for independence on entrepreneurial intentions through entrepreneurial training as mediator was ($\beta =$

0.036, $t = 3.058$, $p < 0.05$) and ($\beta = 0.095$, $t = 2.784$, $p < 0.05$) thus indicating that entrepreneurial training significantly mediates the relationship between need for success and need for independence towards entrepreneurial intentions. Based on the above results, H4 and H5 which are related the mediator assesment are acceptable.

Figure 1. Measurement analysis output



Discussion and Conclusion

Based on the Theory of Planned Behavior (TPB) and previous research on entrepreneurial intention, this study investigates the factors affecting entrepreneurial intention among university students. In other words, understanding the factors of students starting a business is the focus of this study. Entrepreneurial intention begins with an awareness in the mind that directs attention and

action to a business concept. Entrepreneurship in this study refers to the activities and ecosystems that have been created in institutions of higher learning.

Based on the results, there is a significant influence directly to the intention from; the need for success towards entrepreneurial intentions. The study found that the need for success greatly influences entrepreneurial intention. The desire to succeed in life gives one a high

motivation and enthusiasm to force them to act towards the goals they desire. Better performance is always led by a high need for achievement, which is one likely to be intrinsically motivated to strive for excellence.

As for the need for independence, the results showed that it did not significantly influence entrepreneurial intention directly and the hypothesis for this variable was rejected. entrepreneurship training which is a mediator between all need for success and need for independence variables on entrepreneurial intention has a mediation effect on both towards entrepreneurial intention.

The results revealed that need for success are paralel with past researchers but the need for independence seems to be against from few recent researchs (Agolla et al., 2019; Bazan et al., 2020; Politis et al., 2016; Pruett et al., 2009). Further study can reinvestigate the factor of need for independence with perhaps new mediator or an analysis with potential moderators towards entrepreneurial intentions. Different geographical, culture and conomic background could influence different perceptions and results towards developing the entrepreneurial intentions among the universities students and fresh graduates.

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References

1. Agolla, J. E., Monametsi, G. L., & Phera, P. (2019). Antecedents of entrepreneurial intentions amongst business students in a tertiary institution. *Asia Pacific Journal of Innovation and Entrepreneurship*, 13(2), 138–152. <https://doi.org/10.1108/apjie-06-2018-0037>
2. Al Mamun, A., Ibrahim, M. D., Yusoff, M. N. H. Bin, & Fazal, S. A. (2018). Entrepreneurial leadership, performance, and sustainability of micro-enterprises in Malaysia. *Sustainability* (Switzerland). <https://doi.org/10.3390/su10051591>
3. Ali, A. M., Shamsudin, M. F., Ali, A. M., Ishak, M. F., & Esa, S. A. (2021). The Use of Social Media Application as a Factor Influencing the Students' Decisions-Making to Enrol at Private Higher Education Institutions using Smart PLS. *Journal of Information Technology Management*, 13(3), 187–195. <https://doi.org/10.22059/JITM.2021.83237>
4. Bazan, C., Gaultois, H., Shaikh, A., Gillespie, K., Frederick, S., Amjad, A., Yap, S., Finn, C., Rayner, J., & Belal, N. (2020). Effect of the university on the social entrepreneurial intention of students. *New England Journal of Entrepreneurship*, ahead-of-p(ahead-of-print). <https://doi.org/10.1108/neje-05-2019-0026>
5. Bignotti, A., & le Roux, I. (2020). Which types of experience matter? The role of prior start-up experiences and work experience in fostering youth entrepreneurial intentions. *International Journal of Entrepreneurial Behaviour and Research*. <https://doi.org/10.1108/IJEER-10-2019-0577>
6. Bizri, R., Hammoud, J., Stouhi, M., & Hammoud, M. (2019). The entrepreneurial university: a proposed model for developing nations. *Journal of Management Development*, 38(5), 383–404. <https://doi.org/10.1108/JMD-11-2018-0347>
7. Chhabra, S., Raghunathan, R., & Rao, N. V. M. (2020). The antecedents of entrepreneurial intention among

- women entrepreneurs in India. *Asia Pacific Journal of Innovation and Entrepreneurship*, 14(1), 76–92. <https://doi.org/10.1108/apjie-06-2019-0034>
8. Fietze, S., & Boyd, B. (2017). Entrepreneurial intention of Danish students: a correspondence analysis. *International Journal of Entrepreneurial Behaviour and Research*, 23(4), 656–672. <https://doi.org/10.1108/IJEBR-08-2016-0241>
 9. Fuller, D., & Pickernell, D. (2018). Identifying groups of entrepreneurial activities at universities. *International Journal of Entrepreneurial Behaviour and Research*, 24(1), 171–190. <https://doi.org/10.1108/IJEBR-03-2017-0096>
 10. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM) (2nd Ed)*. SAGE Publications.
 11. Hair, Joseph F., Hult, J. G. T. M., Ringle, C., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) - J* - Google Books. SAGE Publications.
 12. Hair, Joseph F., Ringle, C. M., & Sarstedt, M. (2012). Partial Least Squares: The Better Approach to Structural Equation Modeling? *Long Range Planning*, 45(5–6), 312–319. <https://doi.org/10.1016/j.lrp.2012.09.011>
 13. Hassan, S., & Shamsudin, M. F. (2019). Measuring the effect of service quality and corporate image on student satisfaction and loyalty in higher learning institutes of technical and vocational education and training. *International Journal of Engineering and Advanced Technology*, 8(5), 533–538. <https://doi.org/10.35940/ijeat.E1077.0585C19>
 14. Hsuan, J., Jovanovic, M., & Clemente, D. H. (2021). Exploring digital servitization trajectories within product–service–software space. *International Journal of Operations and Production Management*, 41(5), 598–621. <https://doi.org/10.1108/IJOPM-08-2020-0525>
 15. Huridi, M.H., Jamaludin, A. & Abdullah Hashim, R. (2020). Investigating a Globalised Business Environments on Export Performance. *International Journal of Psychosocial Rehabilitation*, Vol. 24 (4).
 16. Iakovleva, T., Solesvik, M., & Trifilova, A. (2013). Financial availability and government support for women entrepreneurs in transitional economies: Cases of Russia and Ukraine. *Journal of Small Business and Enterprise Development*, 20(2), 314–340. <https://doi.org/10.1108/14626001311326752>
 17. Jamaludin, A., Abdul Razak, M.Y., Mohd Hazli, M.R., Salwa, C.M., & Zawiah, A.M. (2016). *Introduction to entrepreneurship*. 2nd Ed. Kuala Lumpur, Malaysia: Universiti Kuala Lumpur-Oxford Fajar.
 18. Joensuu-Salo, S., Viljamaa, A., & Varamäki, E. (2020). Do intentions ever die? The temporal stability of entrepreneurial intention and link to behavior. *Education and Training*, 62(3), 325–338. <https://doi.org/10.1108/ET-03-2019-0053>
 19. Kadir, B., & Shamsudin, M. F. (2019). A case study analysis of typhidot: An example of market-oriented R & D commercialization in Malaysia. *International Journal of Financial Research*, 10(5), 75–81. <https://doi.org/10.5430/ijfr.v10n5p75>
 20. Kebaili, B., Al-Subyae, S. S., & Al-Qahtani, F. (2017). Barriers of entrepreneurial intention among Qatari

- male students. *Journal of Small Business and Enterprise Development*, 24(4), 833–849. <https://doi.org/10.1108/JSBED-11-2016-0186>
21. Krejcie, R., V.Morgan, & W., D. (1996). (1970) “Determining sample Size for Research Activities”, *Educational and Psychological Measurement*. *International Journal of Employment Studies*, 18(1), 89–123.
22. Lee, G., Lamba, N., & Shih, H. A. (2021). In Reply to McClelland and Watson. In *International Journal of Radiation Oncology Biology Physics*. <https://doi.org/10.1016/j.ijrobp.2020.12.060>
23. McClelland, J. L. (2013). Incorporating rapid neocortical learning of new schema-consistent information into complementary learning systems theory. *Journal of Experimental Psychology: General*. <https://doi.org/10.1037/a0033812>
24. Monllor, J., & Soto-Simeone, A. (2019). The impact that exposure to digital fabrication technology has on student entrepreneurial intentions. *International Journal of Entrepreneurial Behaviour and Research*. <https://doi.org/10.1108/IJEER-04-2019-0201>
25. Ojiaku, O. C., Nkamnebe, A. D., & Nwaizugbo, I. C. (2018). Determinants of entrepreneurial intentions among young graduates: perspectives of push-pull-mooring model. *Journal of Global Entrepreneurship Research*, 8(1). <https://doi.org/10.1186/s40497-018-0109-3>
26. Oliveira, A., & Rua, O. L. (2018). From intention to entrepreneurial action: Assessing the impact of the barriers on the creation of new organizations. *RAUSP Management Journal*, 53(4), 507–534. <https://doi.org/10.1108/RAUSP-07-2018-0039>
27. Politis, K., Ketikidis, P., Diamantidis, A. D., & Lazuras, L. (2016). An investigation of social entrepreneurial intentions formation among South-East European postgraduate students. *Journal of Small Business and Enterprise Development*, 23(4), 1120–1141. <https://doi.org/10.1108/JSBED-03-2016-0047>
28. Pruett, M., Shinnar, R., Toney, B., Llopis, F., & Fox, J. (2009). Explaining entrepreneurial intentions of university students: A cross-cultural study. *International Journal of Entrepreneurial Behaviour and Research*, 15(6), 571–594. <https://doi.org/10.1108/13552550910995443>
29. Purnomo, B. R. (2019). Artistic orientation, financial literacy and entrepreneurial performance. *Journal of Enterprising Communities*, 13(1–2), 105–128. <https://doi.org/10.1108/JEC-09-2018-0065>
30. Ramayah, T., Ignatius, J., Leen, J. Y. A., & Chiun, L. M. (2016). Discriminant analysis. In *Probability and Statistics: A Didactic Introduction*. <https://doi.org/10.4324/9781351033909-29>
31. Ritz, W., Wolf, M., & McQuitty, S. (2019). Digital marketing adoption and success for small businesses: The application of the do-it-yourself and technology acceptance models. *Journal of Research in Interactive Marketing*, 13(2), 179–203. <https://doi.org/10.1108/JRIM-04-2018-0062>
32. Saberi, M., & Hamdan, A. (2019). The moderating role of governmental support in the relationship between entrepreneurship and economic growth: A study on the GCC countries. *Journal of Entrepreneurship in Emerging Economies*, 11(2), 200–216. <https://doi.org/10.1108/JEEE-10-2017-0072>

33. Salem, M. A., Shawtari, F. A., Shamsudin, M. F., Manochehri, N. N., Al Blooshi, S. G., & Alyafei, K. (2019). Structural equation modelling of the relationship between TQM practices and organizational commitment in higher educational institutions. *Polish Journal of Management Studies*, 19(2), 331–342.
<https://doi.org/10.17512/pjms.2019.19.2.28>
34. Santos, S. C., & Liguori, E. W. (2019). Entrepreneurial self-efficacy and intentions: Outcome expectations as mediator and subjective norms as moderator. *International Journal of Entrepreneurial Behaviour and Research*.
<https://doi.org/10.1108/IJEER-07-2019-0436>
35. Shah, N., & Soomro, B. A. (2017). Investigating entrepreneurial intention among public sector university students of Pakistan. *Education and Training*, 59(7–8), 841–855.
<https://doi.org/10.1108/ET-11-2016-0168>
36. Shamsudin, M. F., Alias, M. N., Majid, Z. A., Zandi, G., & Mohammad, M. A. (2021). Does the Support System Mediate the Relationship between University Roles and Entrepreneurial Intentions among University Students? *Journal of Information Technology Management*, 13(3), 41–54.
<https://doi.org/10.22059/JITM.2021.83>
37. Tehseen, S., Ahmed, F. U., Qureshi, Z. H., Uddin, M. J., & Ramayah, T. (2019). Entrepreneurial competencies and SMEs' growth: the mediating role of network competence. *Asia-Pacific Journal of Business Administration*, 11(1), 2–29.
<https://doi.org/10.1108/APJBA-05-2018-0084>
38. Tognazzo, A., Gianecchini, M., & Gubitta, P. (2017). Educational context and entrepreneurial intentions of university students: An Italian study. *Contemporary Issues in Entrepreneurship Research*, 7, 47–74.
<https://doi.org/10.1108/S2040-724620170000007008>
39. Tomy, S., & Pardede, E. (2020). An entrepreneurial intention model focussing on higher education. *International Journal of Entrepreneurial Behaviour and Research*.
<https://doi.org/10.1108/IJEER-06-2019-0370>
40. Van Gelderen, M., Brand, M., Van Praag, M., Bodewes, W., Poutsma, E., & Van Gils, A. (2008). Explaining entrepreneurial intentions by means of the theory of planned behaviour. *Career Development International*, 13(6), 538–559.
<https://doi.org/10.1108/13620430810901688>