



Entrepreneurial Tool and its Explication in the Development of University-based Entrepreneurial Ecosystem: Evidence from Malaysia

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Abstract: The researchers employed a Constructivist grounded theory approach to demystify the essence of Entrepreneurial tool in the development of University-based entrepreneurial ecosystem (U-BEE) in Malaysian universities. In order to provide a substantive propositional scaffold for future researchers, this study qualitatively explored the intrinsic role of technological tools in explicating the complexities surrounding the development of substantive University-based entrepreneurial ecosystem in context. Methodologically, interview and observational data were garnered in 3 stages, identifying 56 initial categories and 13 macro-themes. The credence of this research was validated plausibly following the dicta of the originator of the Constructivist grounded theory and by members' check. The researchers elucidated in detail respondents' perceptions of entrepreneurial tools in relation to the complexities surrounding UBEE development, and a grounded 2-component model of the paradigmatic composite composition of the respondents' perception empirically emerged in-situ, including entrepreneurial tool and entrepreneurial adaptation. The emergence of these dimensions explicates the intricate mesh mechanisms enveloping the development of UBEE in the ambience of the research. The research implications in relation to future theoretical development are dutifully discussed.

Keywords: Constructivism, Entrepreneurial ecosystem, University-Based entrepreneurial ecosystem.

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Introduction

Entrepreneurial ecosystem, a nascent field in entrepreneurship literature, demands global attention (Isenberg, 2014) and scholars have had concerns over its lacks of substantive theories for the development of university-based entrepreneurship ecosystem that is inductively and iteratively grounded in data (Ekundayo, 2013; Samuel, Salleh&Hanif, 2018). There are plausible insights and conjectures that warranted contextual and indigenous research, especially about the role of entrepreneurial tools in the development of university-based entrepreneurial ecosystem in Asean context. Therefore, garnering data from successfully developed university-based entrepreneurial ecosystem practices in the developed countries would prove substantially enlightening to some extent, but, as this study shows, does not yield an encompassing solution. Intrinsic pre-conditions amongst actors of entrepreneurial ecosystem are difficult to set and administer due to differing pecuniary motives (Humphreys et. al., 2007; Humphrey, 2013; Goldstein & Tyfield, 2017) and operational values, therefore, the researcher's substantive research approach is inevitable in the research context.

This research emphasises the centrality of technological adoption and the cardinality and precedence of technological tools over technological adaptation. Entrepreneurial constitutes and

creates links and interactions that enables other institutional infrastructures and other entrepreneurial mechanisms.

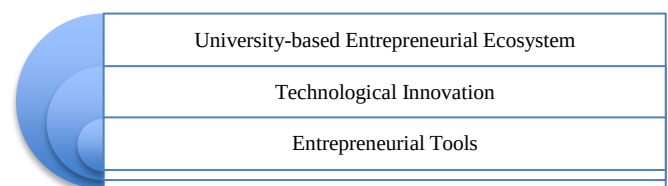


Figure 1. The Role of Entrepreneurial tools in the development of University-based Entrepreneurial Ecosystem.

The figure above shows that technological innovation commences with mobilizing existing tools. The increasing demand for social-technical perspectives in the research process calls for innovative tools. The dimension of technological tool has had empirical challenges in terms of the development of the entrepreneurial ecosystem and is only amenable in a complementary role. The complementary role played by technological tool gives rise to effective technological knowledge, vastly known as technological push. From the perspective of this research, the varying classifications of technological tools actively aids entrepreneurial orientation and financial preferences, contrary to the arguments of entrepreneurial identity. However, this research clearly demonstrates that technological tools increasingly enhances startup

decision and is critical to the development of university-based entrepreneurial ecosystem. In support of this research, the findings of Kyprianou and Nikiforou (2016) state that technology tools or effective digitization aid interconnected system modelling and the aim of a university-based entrepreneurial ecosystem could easily be realized. Therefore, an entrepreneur could easily discover and make use of entrepreneurial opportunities for the development of entrepreneurship ecosystem.

Problem Statement

The tenor of entrepreneurial research is currently beyond hypothetical falsification and deductive quantification, there is increasing demand for an in-depth inductive research that exclusively explicates the nuances and dimensional dichotomies. This research employs vast qualitative enquiry for modeling an entrepreneurial paradigm for the development of a robust university-based entrepreneurial ecosystem in Malaysian context. Generally, researchers focus on the deductive entrepreneurial challenge but the subject of entrepreneurial tool is best unraveled substantively and indigenously. This research shows poor technical profiling and this requires inductive methodological approach that can significantly explicate the complexities surrounding the role of entrepreneurial tools in relation to the development of university-based entrepreneurial ecosystem.

The Aim of Research

This paper inductively explicates the complexities surrounding the role of entrepreneurial tools in the development of university-based entrepreneurial ecosystem in Malaysian universities. This research is a part of governmental support for university's entrepreneurship.

Method of Research

The current investigation involved interviews, documentary evidence and direct observations. The number of respondents was 10 entrepreneurial directors and facilitators of ten (10) public and private universities in Malaysia selected by using purposive sampling method. The researchers employ a semi-structured questionnaire in moderating the interview. The semi-structured questionnaire covered socio-technical information of the respondents.

The selection of key informants purposively including entrepreneurial directors, facilitators and staff focused on the socio-technical conditions of the universities and the orientation of the respondents was in accordance with the dicta of Constructivist grounded theory as originated by Charmaz. Constructivist grounded theory births and enhances openness to all conceivable

theoretical conjectures, thus promoting the emergence of tentative abstractions of data (Charmaz, 2006) and the rigorous analytic edge of Constructivist grounded theory facilitates the emergence of substantive and indigenous paradigm that could aid future contextual generalizations (Charmaz & Mitchell, 2001).

Analysis and Discussion

This study, as seen in Figure 2 shows that Public universities in Malaysia have better access to entrepreneurial tools than private university, and this percentage is around 68.04% compared to Private universities (31.96%). This result also supports findings from renowned journals of technology readiness index of South Americans settling in the United States. Specifically, Pens et. al. (2017) recently analyzed and examined the data of over 100 Brazilian entrepreneurs in the United States and reported the significance of technology innovation in the development of entrepreneurship. However, the research showed an innate relationship in differing ambience may not resonate with the result in a pre-defined competitive context (Buganza & Verganti, 2009; Carlgren, Rauth & Elmquist, 2016).

Table 1. Matrices of Technological Innovation

Technological Innovation
422 : Online business is a major advantage
423 : Platforms for free mentoring and consultation
424 : Policies build our programs and infrastructure
425 : Produce holistic graduate
426 : Programs and training must be sustained
427 : Progress is updated and evaluated through the database
428 : Provide basic niche training
429 : Rural entrepreneurship programs
430 : Several seminars helps form entrepreneurial mindset
431 : Simulation develops students' interest and understanding
432 : Students are immersed in a series of awareness program
433 : Technology-based monitoring system
434 : The result and impact of these programs is more important
435 : The tools were developed based on school's characteristics
436 : Training students using the platform of other successful students
437 : Using the technologies that are available with others

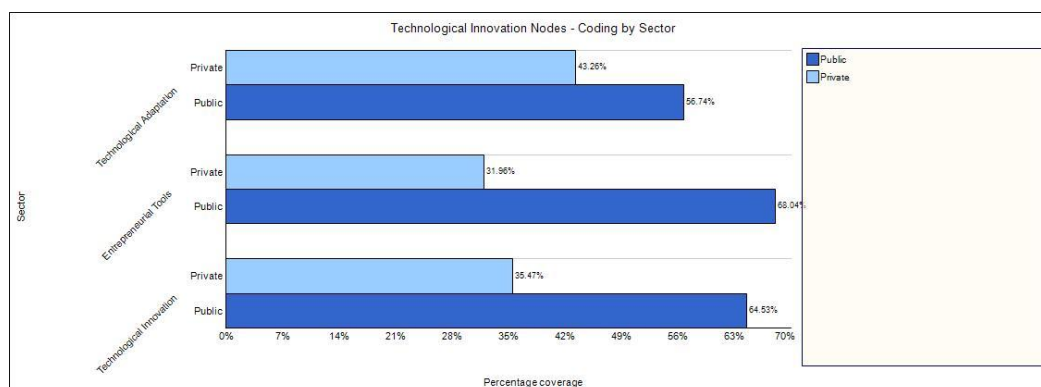


Figure 2. Technological Innovation by Sector

This research also confirms Messeni, Petruzzelli and Savino (2015) research about the significant relationship of technological innovation and the development of entrepreneurship. They also posited further that organizational domain, especially universities should open up to wider influences for competitive advantage.

Whereas, this research shows that there are questionable premises in the rise of entrepreneurship tools and the social economy and researchers have considered the influence of entrepreneurial tools from varying perspectives, which are: Resource acquisition, underpinning technological opportunity and entrepreneurial process (Davidsson, 2015). Prior research highlighted and established entrepreneurial tool with entrepreneurial opportunity and activities (Lichtenstein, 2016) and some have also posited

positive relationship between entrepreneurial tools and entrepreneurial process and resources (Gruber, Mcmillan& Thompson, 2012; Klyver&Schenkel, 2013; Davidsson, 2015; Bhawe, Rawhouser& Pollack2016). The complementary perspectives inherent in extant studies support the result of this research that entrepreneurial tool attributes to the success of entrepreneurial ecosystem. The research also buttresses the claims of MacInnis (2011) that entrepreneurial tools aid the descriptive characterizations of concept, and this invariably differentiates theory from practice. The researchers have observed in support of this research the practical implication of the MacInnis (2011) claims and its axiomatic contextual significance.

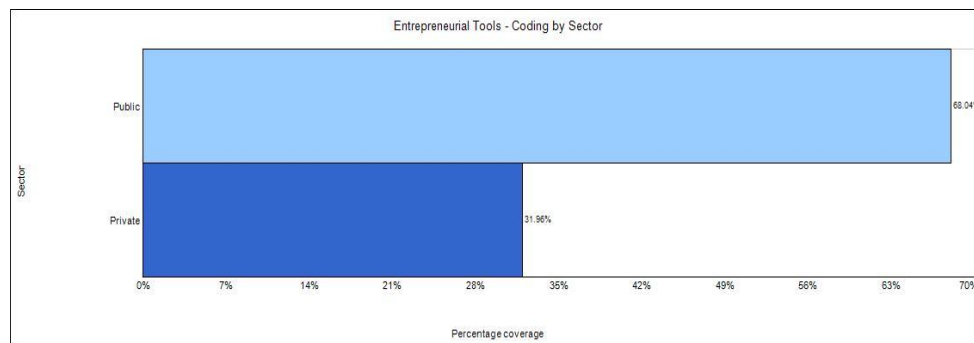


Figure 3. Entrepreneurial Tool by Sector

In line with the result of this research, as seen in Figure 3, Engineering-based university has access to entrepreneurial tools than Management-based university, and this percentage is around 44.29% compared to Private universities (31.96%). Some of the respondents' experiences clearly demonstrate this verity:

We need platforms to perform...(Informant 7)

Connections are not readily available... (Informant 13)

Well...some of the universities are trying to provide good technological facilities (Informant 17)

Many of us have blogs and are waiting for start-up capital (Informant 14)

I have internet connections, at least on my phone, but no support from the university (Informant 19).

Two Propositions: Two propositions clearly emerged from the informants' transcribed coded interview:

(i) "Entrepreneurial tools ensure sustainability". This indicates that entrepreneurial tool is positively related to entrepreneurial behavior.

(ii) "Tools help to create value beyond available resources". This indicates that entrepreneurial tools influences entrepreneurial development.

Two Contextual Issues:

(i) Necessity of entrepreneurial tools in relation to the development of entrepreneurial ecosystem.

(ii) Necessity of utilizing entrepreneurial tools to create value beyond available resources.

The result of the research of Mosey, Guerrero, and Greenman (2017) categorically buttressed this research which stated that entrepreneurial tools would continue to advance and missing features would continually bring a decline in entrepreneurial development and, in line with the result of this research, lack of detailed characterization of technological entrepreneurship leads to difficulty in the conceptual determining of entrepreneurial boundaries (Ferreira et. al, 2016) and this invariably affects entrepreneurial readiness, therefore, they further argued that a broad-spectrum conceptualization should be espoused, combining entrepreneurial tools and entrepreneurial ecosystem. On the other hand, Beckman et. al., (2012) focus on the innovative typologies of entrepreneurial tools and advancement is not solely dependent on conceptualizations, an assertion that does not accurately align with the result of this research. Some of the questions related to entrepreneurial tools this research answered are:

- Does university entrepreneurship bring about innovations in entrepreneurial tools in their spheres of operation? How do governmental policies regulate emerging entrepreneurial ecosystem?
- What tools do entrepreneurs employ to main competitive advantage in emerging university-based entrepreneurial ecosystems? What are the differences in entrepreneurial tools? When do entrepreneurs use tools advantageously?

Conclusion

This research builds the evidence base for entrepreneurial tool as a strategic instrument that is critical to the growth of the nation's economy. Therefore, this research caters for the substantive derivation of entrepreneurial dimensional tool and this aids the development of university-based entrepreneurial ecosystem. Hence, this study develops Malaysian university-based

entrepreneurial ecosystem and entrepreneurial dimension (tools) necessary for fostering its sustenance was empirically validated.

The substantive and systematically approach to developing university-based entrepreneurial ecosystem in Malaysia is a pioneering work and the researchers endeavored to build testable construct that would assist future researchers to objectively further entrepreneurial claims in the research context. This seminal contribution to the field of entrepreneurship and business computing would expand the horizon of entrepreneurial endeavor in Malaysia, and, would significantly orchestrate new insights for researching university-based entrepreneurial ecosystem in an Asean context.

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