

ASSESSING MICRO ENTREPRENEUR PERSONALITY TRAITS AND
BEHAVIOURS VIA SPATIAL MEASUREMENT

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ASSESSING MICRO ENTREPRENEUR PERSONALITY TRAITS AND
BEHAVIOURS VIA SPATIAL MEASUREMENT

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DEDICATION

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ABSTRACT

Developing a career in entrepreneurship is very promising, especially when there are various facilities like loan assistance given to new entrepreneurs like micro-entrepreneurs. In applying for the facilities provided, micro-entrepreneurs were required to undergo a specific assessment to evaluate the applicants' financial status and personal traits. Currently, there are no specific objective measurements to measure the personality traits and furthermore the personality traits are subjective and difficult to measure objectively. Therefore, the aim of this research was to explore an objective alternative way to measure micro-entrepreneur's personality traits and behaviours via spatial measurements. The three main objectives for this research were to investigate the weakness in the current micro-entrepreneur personality traits and behaviours measurement used for micro-entrepreneurs, to evaluate the micro-entrepreneur personality traits and behaviours, and to validate the alternative entrepreneur's personality traits and behaviour measurement. To achieve the objectives, fifteen respondents were interviewed to investigate the related personality traits, behaviour, and the weakness of the current approach (Socially Desirable Responding - SDR, bias, and less objective measurement). Based on the initial finding, questionnaires were constructed and distributed to one hundred forty-five respondents, consisting of two categories with fifty-one micro-entrepreneurs and ninety-four evaluators from agencies that provide loans and aid to micro-entrepreneurs, respectively. The microcredit agencies involved are Amanah Ikhtiar Malaysia (AIM), TEKUN Nasional, Lembaga Kenaf dan Tembakau Negara (LKTN), Zakat Institution, MARDI, TERAJU, DUMS, KEDA, MARA, Department of Agriculture, and RISDA. Their responses were analysed using SmartPLS3 statistical analysis techniques and then further validated by interviewing three experts from the microcredit agencies personnel. The main findings indicated that most of the micro-entrepreneur's personality traits could be measured via spatial measurement. Those personality traits were efforts, perseverance, endurance, confidence, seriousness, responsible, creativity and innovation, risk-taker, opportunity-oriented, commitment, and locus of control. However, based on the statistical analysis, it was found that three from the eleven personality traits proposed were suggested to be removed which were confidence (micro-entrepreneur's), responsible (staffs), and risk-taker (both staff and micro-entrepreneur). This removal was also supported by the expert's opinions involved in this research, along with their respective justifications. The findings showed that it is feasible to evaluate an entrepreneur's personality traits and behaviours objectively via spatial measurement. This measurement could support more transparent decision-making, especially for agencies granting aid or loans to potential entrepreneurs. As such, this research could be expanded to other subgroups such as small and medium enterprises and online entrepreneurs. This will benefit the entrepreneurs in the future.

ABSTRAK

Membangunkan kerjaya dalam keusahawanan menjanjikan masa depan yang cerah, terutama sekali apabila terdapat pelbagai kemudahan seperti bantuan pinjaman yang diberikan kepada usahawan baru seperti usahawan mikro. Bagi memohon kemudahan yang disediakan, usahawan mikro perlu menjalani penilaian khusus bagi menilai status kewangan dan ciri-ciri peribadi pemohon. Pada masa kini, tidak ada pengukuran objektif khusus untuk mengukur sifat keperibadian ini dan tambahan pula, sifat keperibadian ini adalah subjektif dan sukar diukur secara objektif. Oleh itu, tujuan penyelidikan ini adalah untuk meneroka cara alternatif yang objektif bagi mengukur sifat dan tingkah laku keperibadian mikro melalui pengukuran spatial. Tiga objektif utama dalam penyelidikan ini iaitu untuk mengkaji kelemahan pengukuran semasa ciri dan tingkah laku keperibadian yang digunakan untuk usahawan mikro, untuk menilai sifat dan tingkah laku keperibadian usahawan mikro, dan untuk mengesahkan pengukuran alternatif sifat keperibadian dan tingkah laku usahawan mikro. Bagi mencapai objektif yang dinyatakan, lima belas responden ditemu ramah untuk mengkaji ciri-ciri keperibadian, tingkah laku, dan kelemahan pendekatan semasa (Maklumbalas Berkeinginan Sosial - MBS, berat sebelah, dan pengukuran yang kurang objektif). Berdasarkan penemuan awal, soal selidik dibina dan diedarkan kepada seratus empat puluh lima responden, yang terdiri daripada dua kategori dengan lima puluh satu usahawan mikro, dan sembilan puluh empat penilai dari agensi yang masing-masing memberikan pinjaman dan bantuan kepada usahawan mikro. Agensi kredit mikro yang terlibat adalah Amanah Ikhtiar Malaysia (AIM), TEKUN Nasional, Lembaga Kenaf dan Tembakau Negara (LKTN), Institusi Zakat, MARDI, TERAJU, Blueprint, KEDA, MARA, Jabatan Pertanian, dan RISDA. Maklumbalas yang diterima dianalisis menggunakan teknik analisis statistik SmartPLS3 dan kemudian disahkan dengan menemu ramah tiga pakar dari kakitangan agensi kredit mikro. Penemuan utama menunjukkan bahawa kebanyakan ciri keperibadian pengusaha mikro dapat diukur melalui pengukuran spatial. Ciri-ciri keperibadian itu adalah usaha, ketekunan, ketahanan, keyakinan, kesungguhan, bertanggungjawab, kreativiti dan inovasi, pengambil risiko, berorientasi peluang, komitmen, dan lokus kawalan. Namun begitu, berdasarkan analisis statistik, didapati bahawa tiga dari sebelas ciri keperibadian yang dicadangkan perlu untuk disingkirkan iaitu keyakinan (usahawan mikro), bertanggungjawab (kakitangan), dan pengambil risiko (baik kakitangan dan usahawan mikro). Penyingkiran ini juga disokong oleh pendapat pakar yang terlibat dalam penyelidikan ini bersama dengan justifikasi masing-masing. Dapatan kajian menunjukkan pengukuran sifat dan tingkah laku keperibadian usahawan secara objektif dapat dilakukan melalui pengukuran spatial. Pengukuran ini dapat menyokong keputusan yang lebih telus, terutama bagi agensi dalam memberikan bantuan atau pinjaman kepada bakal usahawan. Seterusnya, penyelidikan ini boleh dikembangkan ke sub-kumpulan lain seperti perusahaan kecil dan sederhana, dan pengusaha dalam talian. Ini akan memberi manfaat kepada pengusaha pada masa akan datang.

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LIST OF ABBREVIATIONS

AIM	-	Amanah Iktiar Malaysia
AVE	-	Average Variance Extracted
BKRM	-	Bank Kerjasama Rakyat Malaysia Berhad
CGC	-	Credit Guarantee Corporation
CR	-	Composite reliability
DUMS		Program Bantuan Blueprint dan Program Dana Usahawan Mikro Selangor
DV	-	Dependent Variance
f^2	-	Effect Size
FELDA	-	Lembaga Kemajuan Tanah Persekutuan
GIS	-	Geographical Information System
GPS	-	Global Positioning System
ICT	-	Information and Communications Technologies
IV		Independent Variance
JHEOA	-	Jabatan Hal Ehwal Orang Asli
HTMT	-	Heterotrait-Monotrait
KEDA	-	Lembaga Kemajuan Wilayah Kedah
KEJORA	-	Lembaga Kemajuan Johor Tenggara
LKIM	-	Malaysia Fisheries Development Board
LKTN	-	Lembaga Kenaf dan Tembakau Negara
LOC	-	Locus of Control
MAFI		Kementerian Pertanian dan Industri Makanan
MARA	-	Majlis Amanah Rakyat
MARDI	-	Malaysian Agricultural Research and Development Institute
MAVCAP	-	Malaysia Venture Capital Management Berhad
MIDF	-	Malaysian Industrial Development Finance Berhad
MITI	-	Ministry of International Trade and Industry
MOA	-	Ministry of Agriculture and Agro-based Industry
MOSTI	-	Ministry of Science, Technology and Innovation
MTDC	-	Malaysian Technology Development Corporation

PLS	-	Partial Least Squares Analysis
PNS	-	Perbadanan Nasional Berhad
PUNB	-	Perbadanan Usahawan Nasional Berhad
Q^2	-	Predictive Relevance
R^2	-	R square
RISDA	-	Rubber Industry Smallholders Development Authority
SDG	-	Sustainable Development Goals
SDI	-	Spatial Data Infrastructure
SDR	-	Social Desirability Response
SEM	-	Structural Equation Modeling
SME	-	Small and medium-sized enterprise
TERAJU	-	Unit Peneraju Agenda Bumiputera
VIF	-	Variance Inflation Factor

LIST OF SYMBOLS

λ_i	-	Factor Loading
F	-	Factor Variance
Θ_{ii}	-	Unique/Error Variance

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Entrepreneurship has a long history, and many countries have intensified their efforts to encourage their citizens to become entrepreneurs (Ayandibu & Houghton, 2017). Today, community involvement in entrepreneurship is a common phenomenon. Communities are now interested in entrepreneurship because of the high possibility of significant returns if they are successful. However, entrepreneurship also serves excellent challenges before and during their involvement with entrepreneurship. Some reports show that 50% of newly established companies in European economies struggled for the first five years (European Commission Report, 2011). To start a new business or expand their entrepreneurship, potential entrepreneurs need capital. Therefore, the government and the private sector provide various initiatives, loans, aid, and assistance to those interested in starting a business or expanding it. The government and private sectors undertake various assessments to prevent the wastage of initiatives, loans, aid, and assistance. These include applicant financial status, business plan, ability to repay a loan, skill and personality traits.

1.2 Research Background

Malaysia continuously encourages entrepreneurship among its citizens to increase their incomes and boost their economy (Ariff & Abubakar, 2003; Rashid & Ratten, 2020). As entrepreneurship has gained momentum among the public, entrepreneurship research has become diverse in different perspectives and areas. Many researchers have shown that most entrepreneurs should have basic knowledge and skills to survive in their business. Previous studies often emphasize non-spatial information such as skills, products, income, agency role, entrepreneurs' behaviours,

and personality traits that lead to entrepreneur success (Cabrera & Mauricio, 2017; Lafortune, Riutort, & Tessada, 2018; Madondo & Phiri, 2017; Rashid & Ratten, 2020). Nowadays, entrepreneur behaviours and personality traits have become one of the main focuses of many research types as entrepreneurs' personality traits and behaviours are stated as contributors to entrepreneurship success (Karabulut, 2016). As one of the main contributors, many attempts have been made to measure entrepreneurs' social science behaviours, especially social psychology.

Entrepreneur's personality traits and behaviours are recognized as factors influencing our world's formation (space) nowadays (Malecki, 2018), while space usually plays a critical role in influencing entrepreneurs' behaviours (Pryor, Webb, Ireland, & Ketchen, 2016). However, only a few existing research types demonstrate the role and potential spatial data in measuring and analysing entrepreneurs' personality traits and behaviours to support decision-making, especially in granting aid and loans. In contrast, spatial measurement might sound unfamiliar to certain people. Ironically, spatial measurement applications are deeply ingrained in some parts of human life (Mitchel, 2005). Spatial measurement has influenced and contributed to human life development, especially in activities that emphasize space as one of the main contributors to an event, including entrepreneurship (Perchoux, Chaix, Cummins, & Kestens, 2013). For example, people rely on smartphones to search for business addresses and locate a shop. Whether they realize it or not, they are using spatial measurement applications.

Exploring and adopting spatial measurement to assess an entrepreneur's personality traits and behaviours is not as vibrant as other applications because entrepreneur personality traits and behaviours are usually categorized as subjective, abstract, and difficult to measure. Using spatial measurement to measure personality traits might raise a question to the user. Furthermore, entrepreneurs' personality traits and behaviours are often highlighted and viewed as a significant part of the social field, especially psychology, sociology, economics, and anthropology. Entrepreneurs' personality traits and behaviours continuously hover in a specific space (Zehra & Nordqvist, 2020). Undeniably space has affected personality traits and behaviours (Stuetzer et al., 2016) indirectly tied to the earth's geographic features. Spatial

measurement is more outstanding for tangible spatial data-oriented problems such as floods, land management, agriculture, and conserving natural resources (Stehr & He, 2019). This situation has limited spatial measurement ability to evaluate entrepreneurs' personality traits and behaviours as “unpredictable” and “unmeasured objectively” fields. Spatial measurement focuses on technical factors such as product deliveries. However, critical assets, such as personality traits and behaviours, are rarely considered. There is less exploitation of spatial measurement analysis for personality traits and behaviours evaluation (Williams, Thomas, Dunbar, Eagle, & Dobra, 2015). In contrast, the exploration of spatial measurement, which contains spatial elements, can be used to measure the micro-entrepreneur's personality traits based on their behaviours (Ondia, Hengrasmee, & Chansomsak, 2018). With the evolution of technologies, some aspects can be explored, exploited, and contribute to better decision-making for application or knowledge, especially spatial measurement.

1.3 Problem Statement

Entrepreneurship is one of the options for individuals to become an employer in their own business. Entrepreneurship has become one area that has attracted many parties, such as government agencies, the private sector, and researchers. Therefore, providing capital and aid to potential or existing entrepreneurs helps them start or expand their businesses. However, before approving the application, applicants need to go through several assessments. These assessments are required to investigate whether the applicants are eligible and capable of repaying the capital and aid provided. Furthermore, personality assessment is also included as one of the evaluations to assess the qualifications of applicants. According to Brandstätter (2011), personality is emphasized as the critical value in entrepreneurship success or continuity.

A personality assessment is a way of evaluating an individual personality. Personality evaluation is not a straightforward task because personality evaluation involves a non-fixing method. The method relies on different human perspectives (De-Juan-Ripoll et al., 2018; Youyou, Kosinski, & Stillwell, 2015). Several tools and

methods measure entrepreneur personalities: self-reports, informant reports, personality questionnaires, evaluator observation, interviews, Big Five-Factor Model, and spatial methods (Riungu, Peterson, Beeco, & Brown, 2018). Psychologists and social researchers quickly criticize these assessment method's flaws, even though these methods are used widely (Baumeister, Vohs, & Funder, 2007; Hammersley, 2013; Rosenbaum & Valsiner, 2011; Uher, 2013, 2015). For the self-report applicants and informant reports, the information submitted may expose inaccuracies and distortion. These inaccuracies are Social Desirability Response (SDR), where applicants are perceived to be faking their response to present a favourable image of themselves or their friends. Griffith and Peterson (2011) and Van de Mortel (2008) stated that applicants tend to give a fake answer that could benefit them (Honkaniemi, Tolvanen, & Feldt, 2011). The tendency to fake their answers poses a severe challenge with conducting self-report methods, particularly questionnaires. For example, when faced with the question, "Do you think you are an honest and responsible person?", an applicant can be suppressed by the stigma that entrepreneurs must have a positive and trustful personality to succeed in their business. Thus, the applicant tends to forge and fake the answer to give a higher mark for this question. Therefore, the response and results obtained from a survey itself are likely to be inaccurate. Sjöberg (2015) also discusses an individual's tendency to give a fake answer with self-report personality tests. Faking response frequently occurs, especially in high-stakes environments (selection of employee dismissal), and probably occurs in the interview (Roulin, Bangerter, & Levashina, 2014).

The evaluator observation and interview methods are frequently highlighted to contain biases (Uher & Visalberghi, 2016). Evaluator observation may lead to bias because this assessment depends on policy agency, evaluator experience, and the assessment situation. The evaluator may give a high score to all applicants who have personalities favoured by the evaluator or their mood and perspective. Usually, two formats are used in an interview, which are structured and unstructured. The interview panel usually uses a structured interview method to have an equal chance of submitting information accurately and consistently assessing it. This technique decreases bias (Hogan, Barrett, & Robert, 2007). However, bias and error assessment may occur in a structured interviewee procedure (Norashadymohd, Muhammad Aziz, Eftahmoh, Haniza, & Nor Farahwahida, 2016). For example, the interviewer may give a high

score to any candidate who fulfils the essential requirement, such as tidy appearance and other characteristics that the interviewers may prefer.

In some cases, interviewers prefer an unstructured interview because it is more exciting and simpler to implement (Phellas, Bloch, & Seale, 2011). However, the situation makes the interview too subjective, which leads to lower accuracy of the assessment, and thus this method is not reliable in assessing entrepreneur personality traits. Furthermore, Jiun-Hao, Chi-Cheng, Shu-Nung, and Chaoyun (2016) highlighted that self-reported scales are exposed to common method bias in their research. Therefore, several steps are offered to reduce this bias, such as necessary measures, selected instruments, and feedback (Malhotra, Kim, & Patil, 2006; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

As personality traits and behaviours are subjective, ‘unmeasurable,’ difficult to measure in quantitative measurement (metric number), there is less research on this matter. As personality traits have been highlighted as critical factors in entrepreneurship, there is an attempt to measure objectively with the previous method. The result cannot generate scientific quantifications or capture behaviours (personality assessments and observations) (Michell, 1999; Uher & Visalberghi, 2016). These assessments are considered subjective quantifications. Passion and tenacity seemed most promising in theoretical entrepreneurship; no previous quantitative tests used these variables to predict entrepreneurship performance (Baum & Locke, 2004). Besides, personality assessment instruments are too subjective (Baran, 2018). In general, personality is not easy to assess.

Measurement of entrepreneur personality traits and behaviours using spatial data is limited (Alessandretti, Lehmann, & Baronchelli, 2018; Kwan, 2000). At the moment, most personality traits measurement focuses on spatial elements such as time and location. Furthermore, the measurement uses a vast personality test, such as the Big Five Personality test. However, this personality test is too general to define an entrepreneur's personality traits (Mei et al., 2017; Murugesan & Jayavelu, 2017). On the other hand, there are possibilities that personality traits can be measured by utilizing and manipulating other spatial elements such as distance, pattern, direction,

area, and network. Spatial data containing spatial elements can be utilized to observe, categorize, and quantify the micro-entrepreneur behaviours, movement, and actions. These elements are measurable as they can be measured in metric numbers. Therefore, this measurement approach will enable entrepreneurs' personality traits and behaviours to be measured spatially and objectively.

1.4 Research Questions

The main questions for this research are:

1. What are the weaknesses in the current entrepreneur's personality traits and behaviours measurement?
2. How can micro-entrepreneur's personality traits and behaviours be objectively measured?
3. How can alternative micro-entrepreneur's personality traits and behaviours measurement using spatial measurement be validated?

1.5 Research Aim

This research aims to explore an objective alternative way to measure micro-entrepreneurs' personality traits and behaviours via spatial measurement.

1.6 Research Objectives

The objectives of this research are as stated:

1. To investigate the weakness in current micro-entrepreneur personality traits and behaviours measurement used for micro-entrepreneurs by interviewing the microcredit staff.
2. To evaluate the micro-entrepreneur personality traits and behaviours via spatial measurement using statistical analysis techniques
3. To validate the alternative entrepreneur's personality traits and behaviours measurement.

1.7 Scope of Research

The research aims to explore an objective measurement for entrepreneurs' personality traits and behaviours via spatial measurement. This research studied only offline entrepreneurs in micro-level entrepreneurship. This research is limited to micro-entrepreneurs (mainly Orang Asli dan Malay) that already set up or have a business. The research also only involves several agencies providing loans and aid to micro-entrepreneurs. The agencies involved are Amanah Ikhtiar Malaysia (AIM), TEKUN Nasional, Lembaga Kenaf dan Tembakau Negara (LKTN), Zakat Institution, MARDI, TERAJU, DUMS, KEDA, MARA, MAFI, and RISDA. This research includes several spatial elements: location, distance, including length, width, height, depth, area including spatial extent, directions including orientation patterns, network, and time. In this finding, only several personality traits are included: proactive efforts, perseverance, endurance, seriousness, risk-taker, confidence, responsible, creativity, innovation, opportunity oriented, commitment, and locus of control (LOC).

1.8 Research Approach

In this research, a preliminary study consists of a literature review, site visit, and interview to identify the main problems that need to be investigated and researched. Several topics were studied to fulfil the requirement of this research. The first topic studied is entrepreneurship, including the main subtopic micro-

entrepreneurs, micro-entrepreneurs' personality traits, behaviours, methods to evaluate micro-entrepreneurs, and current personality traits and behaviours measurement weaknesses. Another topic studied is the spatial measurement method, which is necessary to carry out in this research.

Phase 2 involves the site visit to several micro-entrepreneur's villages and interviews with the agency staff that provides micro-entrepreneurs loans and aid. The personality traits that are evident in influencing micro-entrepreneur success identification are carried out in this phase. After all the selected personality traits were identified, the next step was to determine behaviours reflected from each personality trait. Lastly, the spatial data involved in each behaviour were identified based on interviews and literature review.

Phase 3 presents the initial findings, including the behaviours reflected from the personality traits based on previous research and staff interviews. Another initial finding is spatial elements integrated into this behaviour.

Phase 4 is concentrated on designing the questionnaire to validate the finding in phase 3. After the questionnaire was carried out, the questionnaire distribution and collection process were carried out in five days among selected respondents. The questionnaire was collected and stored in a softcopy medium before it was processed and analysed in SmartPLS3.

This phase consists of validating results and analysis based on the final finding obtained from SmartPLS 3. The SmartPLS 3 results were validated through an interview with 2 AIM staff and 1 Tekun Nasional staff.

Lastly, the final phase involves discussion and a thesis write-up. This research is documented in the form of a five-chapter thesis. The chapters start by presenting the literature, methods, findings analysis, discussion, and this thesis was finally completed with the conclusion. The overall flow of the research approach is summarized in Figure 1.1.

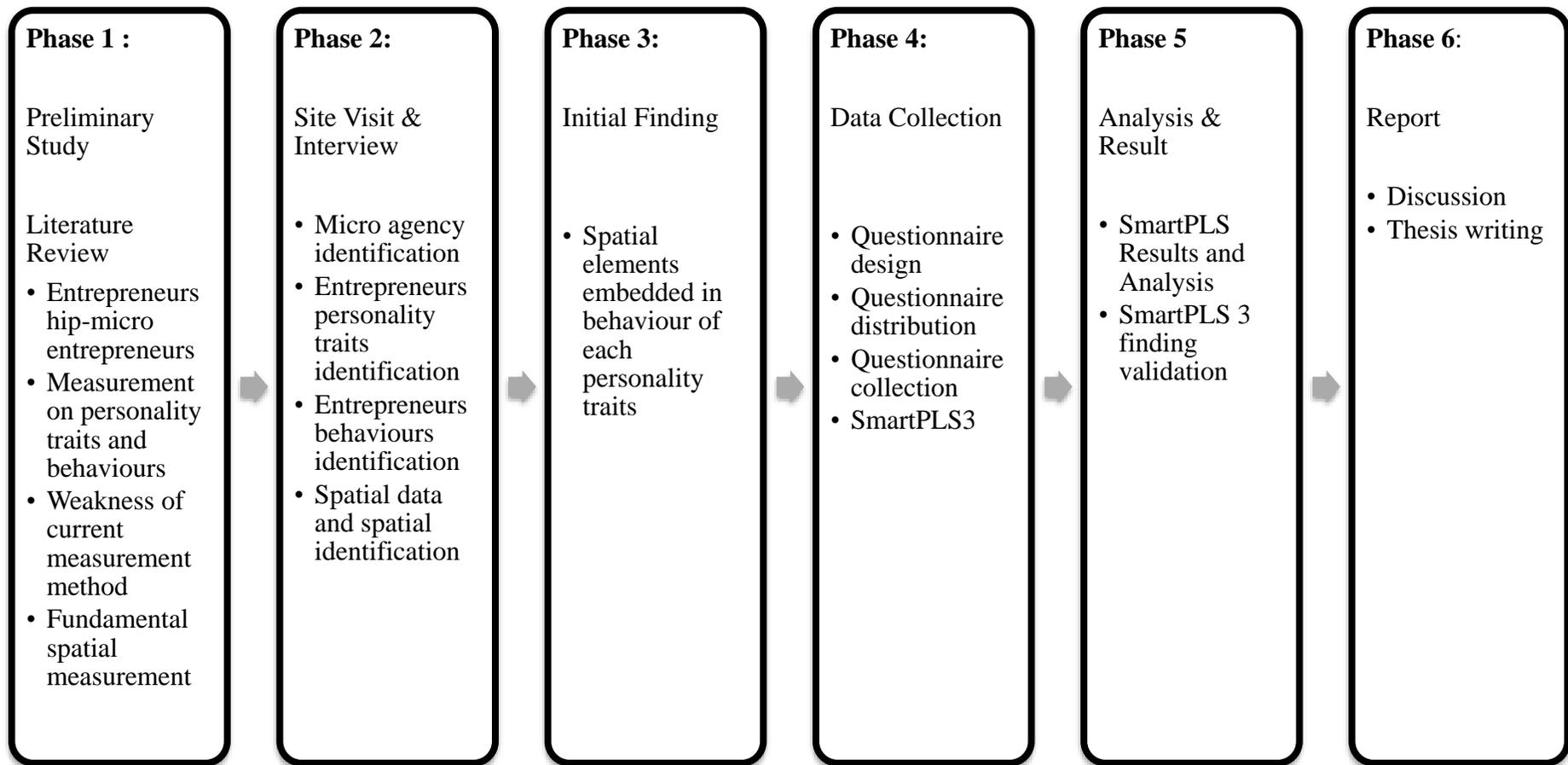


Figure 1.1 Research flowchart

1.9 Importance of the Research

This research focused on micro-entrepreneur from a different perspective. Usually, various researchers have focused on personality traits and behaviours measurement from the social method such as self-report questionnaires, which is suffering from critical limitation as personality psychologists were slow to embrace alternatives for some time (Boyd & Pennebaker, 2017). Viewing personality traits and behaviours from different perspectives and methods can diversify personality and social psychology knowledge. Nowadays, they are more open to integration as the world evolves in the digital era (Snyder & Deaux, 2012) due to the availability of various related data. Additional information can improve the understanding of human personality traits and behaviours. Understanding human personality traits and behaviours can predict the future, especially entrepreneurship, which plays a critical role in most countries' economic growth.

The previous research focuses on the broad personality traits category, Big Five (Alessandretti et al., 2018), using spatial measurement. However, this personality traits category is too big to define entrepreneur behaviours. For micro-entrepreneurs, specific personality traits are a crucial factor in sustaining their business and other factors. Micro-entrepreneurs usually have less skilled human capital resources with a low education level (Mohd Thas Thaker & Mohamed, 2013). They also lack a financial budget, so what is left with them is the optimistic personality that could sustain entrepreneurship. This measurement that focuses on particular personality traits can help highlight their personality trait as their strength to sustain the business. People can fake their responses and bluff their actions, but the outcome can tell how much their behaviours contributed to their business. However, the current methods used to measure personality traits and behaviours are subjective and open to bias. This alternative objective measurement is explored to evaluate this particular entrepreneur's personality trait to give the potential entrepreneur a fair opportunity.

Research emphasizes micro-entrepreneur's personality traits and behaviours measurement from the spatial method, which is that spatial measurement is minimal. There is less evidence of spatial measurement that measures particular micro-

entrepreneur personality traits and behaviours to the best of the researcher's knowledge. This newly explored measurement method will illuminate an alternative method in measuring personality traits objectively compared to the current method that focuses on the social method. Besides, this research will allow the initial exploration of using the spatial method or spatial measurement to measure personality traits and behaviours objectively.

Subsequently, the results obtained from this research presented a possibility to measure personality traits and behaviours via spatial measurement. Undoubtedly, this information will benefit microcredit, especially those involved in micro-entrepreneur. These agencies can consider spatial measurement as complementary ways to identify the potential entrepreneur with the current method. This combination method can avoid the wastage of aid and loans by individuals who are not serious about entrepreneurship. As a field that stands out in psychology, sociology, and anthropology, personality traits and behaviours are usually viewed and solved from a social perspective.

1.10 Thesis Structure

This thesis is divided into five chapters. Chapter 1 provides an introduction that describes the research's subject matter and the problem statement. The problem statement is justified, and overviews of the research objectives, research questions, and importance have been included.

Chapter 2 presents a literature review supporting and connecting entrepreneurship, micro-entrepreneurs, personality traits, behaviours, spatial measurement, spatial data, and spatial elements.

Chapter 3 provides an overview of the research methods, including the research workflow and methods used to complete this research.

Chapter 4 embraces the initial findings and discussion on the questionnaire's findings and the SmartPLS3 result.

The final chapter consists of a summary and a conclusion that sum up the whole research. This chapter also presents recommendations for future research.

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LIST OF PUBLICATIONS

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1. Nawawi, N. M.& Ujang, U. (2020) Entrepreneur Personality Traits and Behaviours Measurement Using Spatial Measurement. *International Journal of Advanced Research*. **(indexed in CrossRef)**

Indexed Conference Proceedings

1. Nawawi, N. M., Ujang, U., Azri, S., & Choon, T. L. (2019). A Review on Measuring Entrepreneurs' Social Behaviour Via Spatial Analysis Techniques. *International Archives of The Photogrammetry, Remote Sensing & Spatial Information Sciences*. <https://doi.org/10.5194/isprs-archives-XLII-4-W16-481-2019>. **(indexed by SCOPUS)**