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The Effect of Talent- and Knowledge Management on the Performance of SMEs: Evidence from Malaysia

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Dedication

بسم الله الرحمن الرحيم

In the name of Allah, The most Gracious The most Merciful.

This thesis is especially dedicated to

…my beloved husband, Ahmad Firdaus Mohd Nor

…my beloved sons, Ibrahim Adham and Muhammad Khalid

…my beloved parents, Abu Hasan Ali and Sharifah Durah Meor Ishak

…my beloved parents in law, Dato' Mohd Nor Idrus and Datin Ruhana Abdullah

…my beloved siblings Shalida, Nuraishah, Mohd Aliff Nai'm,

Ilyana Bazlin, Zatul Iffah, Hazirah, Mohd Hadhri, Mohd Syahir,

and my family and friends.

ABSTRACT

The role of Talent-Management (TM) and Knowledge-Management (KM) in organisational performance has received increased attention across a number of disciplines in recent years. Determining the impact of TM and KM on organisational performance especially financial and innovation performance is important for the future of small-and-medium-sized enterprises (SMEs). There is a growing body of literature that recognises the importance of TM and TM for sustainable competitive advantages. Although TM,KM and their consequences are important, they are nonetheless understudied, which have led to some concern about these issues especially in an emerging country like Malaysia. As such, this PhD thesis has empirically tested the relationship between TM and KM and their effects on organisational performance. In addition, this study has also examined the interaction effect of senior managements' perception of the strategic importance of HR on the aforementioned relationships in a multi-industry sample of 144 Malaysian SMEs. It has used the resource-based view theory in its framework to place more emphasis on the ability of managers to drive better performance from the strategic human capital resources available to them. Supported by the too-much-of-a-good thing effects in management, the results have indicated inverted U-shape curvilinear relationships of TM–KM strategies and organisational performance. Furthermore, the results have also suggested that senior management's emphasis on strategic HR would have its primary interaction effects on KM strategy implementation and financial performance relationship. However, the positive influence has been positively significant at low level of senior managements' attention. This finding has shown the capability of Malaysian SMEs in implementing both of these strategies and underscored the importance of senior management in emphasising the importance of strategic human capital resources.

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Chapter 1 **INTRODUCTION**

Talent and knowledge are two unique resources, which are described by Barney (1991) as resources that are valuable, rare, inimitable, and non-substitutable (VRIN). These characteristics meet the resource-based view theory (RBT) criteria which are considered as strategic resources that can generate economic value and sustainable competitive advantage. These two strategic resources are based on individual knowledge, skills, abilities and other unit-level capacities (Coff 2002) that need to be accessible for unit-relevant competitive advantage (Ployhart et al. 2014). Mobilising human capital resources collectively emphasises the need for effective talent management (TM) practices and knowledge management (KM) strategies for sustainable performance.

The relationship between strategic resources and performance is largely under-researched (Sirmon et al. 2007). Having the right type of human capital allocated efficiently to pivotal positions is of high strategic importance to most organisations (Boudreau & Ramstad 2005a). Talent is broadly conceptualised to include human capital, which is highly valuable and unique to the organisation. Such a conceptualisation is the most popular in the field of TM, especially when RBT is utilised (Gallardo-Gallardo et al. 2015). This PhD study sought to explore the link between TM and KM, and their effects on organisational performance, paying particular attention on how specific TM practices and KM strategy would contribute to enhancing an organisation's sustainable competitive advantage.

It has been clearly evident from the literature that human resource (HR) practices substantially and positively affect organisational performance (Hitt et al.

2001). However, Wright and Gardner (2003: 312) have provided evidence that HR practices are at least 'weakly related to firm performance'. The strength of the relationship is related to the bundle of HR practices implemented in the organisations. The right combination of practices would indeed have significant positive relationship with organisational performance.

By contrast, the literature has offered less theoretical and empirical guidance about how strategic resources can negatively influence organisational performance. In essence, RBT researchers emphasise the effects of strategic resources that fulfil the VRIN criteria on performance but tend to ignore the organisation (O) element in this relationship where managerial roles has an important influence in sustaining competitive advantages. In their quantitative review of human capital and performance, Crook et al. (2011: 452) conclude that understanding the point at which, "human capital begins to diminish and lose its value" is a critical direction for strategy research. The organisation characteristic from the VRIO framework (Barney 1995) is posited to have positive influence whenever human capital begins to diminish and lose its value in the organisation. This particular PhD research therefore aimed to examine the effect of "organisation" (O) characteristic through the perception of senior management on the strategic importance of HR on TM and KM strategy, and performance curvilinear relationship.

Although strategic resources are important for enhancing organisational performance, it has not been fully understood how much resource is really required for sustaining a competitive advantage (Barney & Arikan 2001; Newbert 2007). Advocates of the 'too-much-of-a-good-thing' (TMGT) effect in management posit that "all seemingly monotonic positive relations reach context specific inflection points after

which the relations turn asymptotic and often negative, resulting in an overall pattern of curvilinearity" (Pierce & Aguinis 2013: 313). In similar vein, this study was undertaken to test the presence of such curvilinear relationships between the management of strategic human capital resources, namely, talent and knowledge on organisational performance in the context of smaller organisations, that is, medium-sized enterprises (SMEs) in Malaysia.

Furthermore, RBT research has not studied the effects of managerial and organisational practices on resource management (Sirmon et al. 2007). Although it is expected that strategic resources and performance are related, the strength of the relationship is enhanced or weakened by important moderating factors (Crook et al. 2008; Crook et al. 2011). Such factors include, for example, senior management's perception of the strategic importance of HR (Greer et al. 2015; Mihalache et al. 2012).

As such, this study would highlight the role of senior management in transforming and organising resources, namely, talent and knowledge, for value creation, thus contributing to our understanding of the relationship between the management of resources and the creation of value from a RBT perspective. In general, such an understanding would still be embryonic. In addition, this study would also extend 'resource orchestration' arguments by theorising the ability of small organisations to translate TM and KM into heightened performance. This ability would be dependent on their capacity to develop and leverage critical organisational level capabilities through senior management's perception about the importance of HR. The present study sought to offer new insight by specifically considering the moderating influence of managers' perceptions about the importance of strategic resources in the relationship between TM and KM on organisational performance. Exploring managers'

perceptions about the strategic importance of HR would help us to better understand the nature of the curvilinear relationship between TM and KM with SME's organisational performance. Hence, the researcher in the present study argued that senior management's perceptions of the strategic importance of HR would play an important moderating role in influencing an organisation's ability to mobilise their limited resources successfully and to achieve higher return. In its exploration of this specific moderating variable, the present research sought to provide an insight on how the optimal level of TM and KM may vary at low, moderate and high senior management's perceptions.

1.1   Area of Study

The study aimed to investigate TM and KM and their relationships with financial and innovation performance of Malaysian medium-sized enterprises (SMEs). The analysis was based on quantitative correlational, ordinal least squares (OLS) analysis and would utilise SPSS PROCESS Macro for more in-depth conditional moderation analysis. With regard to the need to account for two types of performance measures, as suggested by Crook et al. (2008), this study used the following two separate constructs of organisational performance: (i) financial performance; and (ii) innovation performance. Furthermore, this PhD research also employed three different measures for innovation performance. The first measure was obtained from the online survey sent to respondents. The second and the third measures of innovation performance were obtained from the secondary data of 1-INNOcert rating given by SMECorp, that is, the Malaysian government body managing the SMEs. Although studies have recognised innovation performance as one important dependent variable, research has yet to

systematically investigate the effect of TM and KM on three different relevant innovation performance measures.

Particular attention was paid to testing the interaction effect of senior management's perception of the importance of strategic Human Resources (HR) on the above-mentioned relationships. Exploring these relationships in the specific context of medium-sized enterprises, which would often result in difficulty in consistently managing their resources efficiently, may offer new insights on the importance of strategic talent and knowledge management. The possibility of curvilinear relationships between research antecedents and organisational performance was also tested. Advancing our understanding of this relationship would lead to important theoretical insights regarding the importance of effectively managed TM and KM strategies in the context of resource-constrained organisational settings.

1.2   What is Talent?

The definition of talent is important for a robust implementation of TM in the organisations. Talent is a valuable resource that can be nurtured, developed and exploited for the benefits of the organisations. Some previous studies on TM seldom start with the important discussion of what is talent. There are several definitions of the term 'talent' in most dictionaries. The Cambridge dictionary (2008) defines talent as "(someone who has) a natural ability to be good at something, especially without being taught". As a noun, talent is considered as 'natural ability'. On the other hand, Oxford dictionary offers two definition of talent; (1) natural aptitude or skill, (2) as a former weight and unit of currency, used especially by the ancient Romans and Greeks.

Oxford dictionary (2015) defines talent as 'capital' to reflect the etymology of the word 'talent'. Historically, the word of talent age thousands of years old and has been used differently by different people and locality. In the 19th century, 'talent' was viewed as being embodied in talented and ability and in the 21st century, 'talent' is being translated as 'capital' that leads to the term 'human capital' used by HRM scholars (Tansley 2011). Since the root of 'human capital' came from the word 'talent', this etymology proofs a link between talent and human capital theory. In one of the current literature review, Gallardo-Gallardo et al. (2015) found that most of TM literature utilising RBT framework always equate talent to 'human capital' that is highly valuable and unique (Lepak & Snell 1999).

Explaining the definition of talent in the context of the study would be very important in order to understand the TM practices implemented. This is because no universal definition of talent would be applicable to all types of organisations. Therefore, in this section, the definition of talent is explored to identify the most suitable definition that fits the context of medium-sized enterprises. The compilation of definitions of 'talent' found in the HRM literature is presented in the following table.

Table 1.1: Definitions of talent in HRM literature

References	Definitions of Talent
(Nijs et al. 2014)	Talent can be operationalised as ability and an affective component which function as necessary preconditions for achieving excellence which, in turn, can be operationalized as performing better than others. *Working definition;* Talent refers to systematically developed innate abilities of individuals that are deployed in activities they like, find important, and in which they want to invest energy. It enables individuals to perform excellently in one or more domains of human functioning, operationalised as performing better than other individuals of the same age or experience, or as performing consistently at their personal best.

Ross (2013)	Talent is about having greater ability leading to increased success and greater results when compared to others and that the priority is to identify and differentiate those who have the greater ability.
Boudreau (2013)	"Talent" is considered both as embodied in the person as they exist today (play to the strengths), or embodied in how the person might be further developed (enhances the areas of weakness).
Ulrich and Smallwood (2012:60)	"Talent" = competence [knowledge, skills and values required for todays' and tomorrows' job; right skills, right place, right job, right time] × commitment [willing to do the job] × contribution [finding meaning and purpose in their job]" (p. 60)
Bethke-Langenegger (2012:3)	"we understand talent to be one of those worker who ensures the competitiveness and future of a company (as specialist or leader) through his organisational/job specific qualification and knowledge, his social and methodical competencies, and his characteristic attributes such as eager to learn or achievement oriented"
Elegbe (2010)	Talent is a situation specific by relating it with the surrounding and context. It has to be socially defined due to the existence via behaviour.
Silzer and Dowell (2010:14)	"..in some cases, 'the talent' might refer to the entire employee population."
González-Cruz et al. (2009:22)	"A set of competencies that, being developed and applied, allow the person to perform a certain role in an excellent way." (p 22; translation ours)
Silzer & Church (2009: 379)	Definition of talent ; talent is conceptualized as a potential implying that talent represents "the possibility that individuals can become something more than what they currently are"
Edward and Lawler (2008)	Talent as selected people who contribute to the success of the organisation where they improve the overall performance.
Chuai et al (2008)	Inclusive and exclusive approach in talent definition.
Cheese, Thomas and Craig (2008: 46)	"Essentially talent means the total of all experience, knowledge, skills and behaviours that a person has and brings to work."
Stahl et al. (2007:4)	"A select group of employees - those that rank at the top in terms of capability and performance - rather than entire workforce".
Tansley et al. (2007:8)	"Talent consists of those individuals who can make a difference to organizational performance, either through their immediate contribution or in the longer-term by demonstrating the highest level of potential."
Ulrich (2007:3)	"Talent equals competence (able to do job) times commitment (willing to do the job) times contribution (finding meaning and purpose in their work)"
Ingham (2006)	Different organisations will have different set of talent definition depending on the type of companies and business strategies.
Tansley, Harris, Stewart, and Turner (2006:2)	"Talent can be considered as a complex amalgam of employees' skills, knowledge, cognitive ability and potential. Employees' values and work preferences are also of major importance."
Lewis & Heckman (2006:141)	"(…) is essentially a euphemism for 'people'"

(Lepak & Snell 2002)	Employees who possess human capital that is rated high both on value and on uniqueness are identified as the 'talent' of an organization.
Ulrich, (2001), (2006:32)	Talent as a combination of competence, commitment, and contribution (Ulrich 2006). "Competence deals with the head (being able), commitment with the hands and feet (being there), contribution with the heart (simply being)"
Buckingham and Vosburgh (2001:21)	"Talent should refer to a person's recurring patterns of thought, feeling, or behaviour that can be productively applied."
Michaels et al. (2001).	Talent can be defined as 'the sum of a person's abilities … his or her intrinsic gifts, skills, knowledge, experience, intelligence, judgement, attitude, character, and drive. It also includes his or her ability to learn and grow".
Williams (2000:35)	"Describe those people who do not or other of the following: regularly demonstrate exceptional ability - and achievement - either over a range of activities and situations. Or within a specialized and narrow field of expertise; consistently indicate high competence in areas of activity that strongly suggest transferable, comparable ability in situations where they yet to be tested and proved to be highly effective, i.e. potential."

Note: Adapted and update from Gallardo-Gallardo, E., Dries, N. & González-Cruz, T.F., 2013. What is the meaning of "talent" in the world of work? *Human Resource Management Review*, 23(4), pp.290–300.

The discussion on the definition of the word *talent* can be separated into two perspectives. The first perspective is the definition of talent in the context of the world of work as elaborated by Gallardo-Gallardo et al. (2013). They have grouped different theoretical approaches to talent into 'object' (i.e., talent as natural ability; talent as mastery; talent as commitment; talent as fit) versus 'subject' approaches (i.e., talent as all people; talent as some people), as illustrated in Figure 1.1 below.
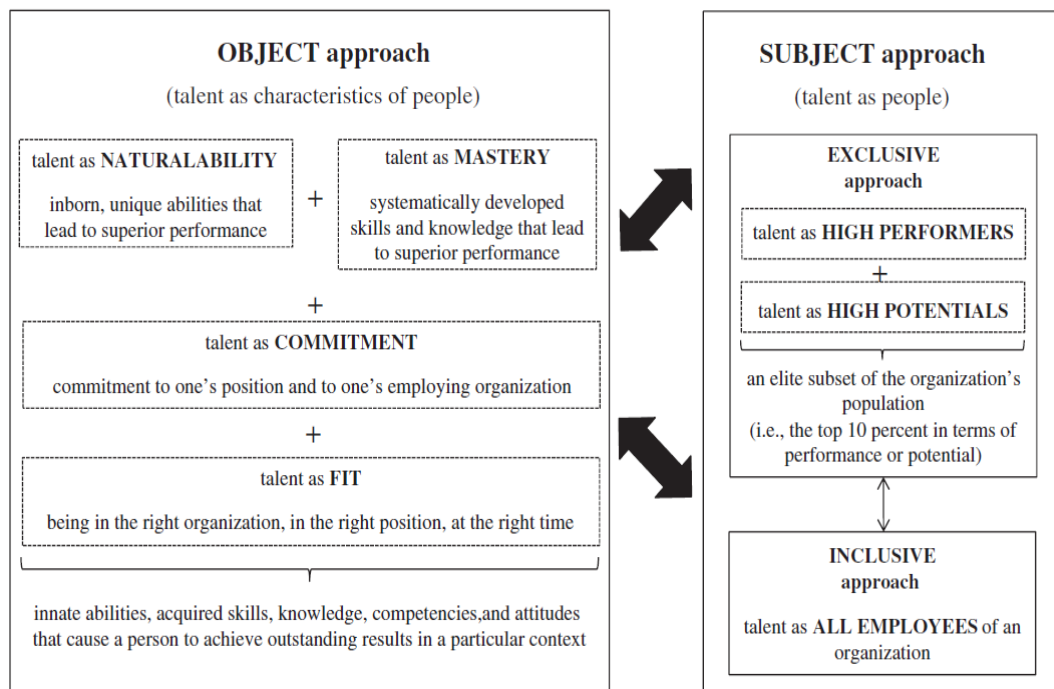
Figure 1.1: Framework for the Conceptualisation of Talent within the World of Work.

The object approach defines talent as *characteristics of people*. Many literatures conceptualise talent as the characteristics of individual employees. Within this object approach to talent, Gallardo-Gallardo et al. (2013) come out with four meanings of talent as: (i) Natural Ability, (ii) Mastery, (iii) Fit, and (iv) Fit.

First, conceptualising *talent as natural ability* will affect the TM practices in the organisations whereby talent according to this approach is viewed as unique and cannot be developed or trained; instead, the organisations need to focus on the enablement of talent. The second definition, that is, *talent as mastery*, contradicts with the definition of *talent as natural ability* in the object approach. The belief held in this approach is that talent can be developed by deliberate practices and by learning from experiences. According to this approach, talent is always made not born.

The third meaning of talent in the object approach focuses on commitment. This approach can be operationalised as commitment to the work and to the organisation. The commitment to one's work means the focus and attention directed towards the given responsibilities. Meanwhile, the commitment to one's organisation means that the employee is willing to invest energy to achieve organisational goals.

The fourth and final definition in the object approach is *talent as fit* in which talent is found or placed in the right organisation, the right position, and at the right time. Talent should be defined and operationalised depending on the organisation's culture, environment, and type of work (Pfeffer 2001). Hence, it is an important approach to strategically putting the right people to the right positions (Collings & Mellahi 2009).

Meanwhile, on the other spectrum, the subject approach defines *talent as people*. This approach is further divided into inclusive and exclusive talent applicable in TM. For the inclusive subject approach, all people are considered talent. Thus, everyone in the organisation can bring added value to the organisation and is considered to be talented. By contrast, the exclusive subject approach does not view all people but only some of them to be considered as talent. In other words, talent refers to the people who are considered the elite subset of the organisation's population, that is, the top 10 percent in terms of performance potential. Most of the time, the exclusive subject approach views talent as high performers and high potentials.

The exclusive approach to talent has drawn some critiques from researchers in this area of study. These critiques revolve around five issues. First, the performance appraisal processes are prone to biasness as the evaluation processes would be done by

the superior (i.e., managers or line supervisors) (Pepermans et al. 2003). Second, the performance of employees varies depending on the tasks performed and certain conditions. For example, under different condition and within better environment, one employee might be able to perform as good as another employee (Netessine & Yakubovich 2012). Third, it is not quite accurate to assume that past performance would predict future performance as often being used as the chosen criteria in recruitment process (Martin & Schmidt 2010). Fourth, the exclusive talent approach will reduce the motivation of the non-talented employees and their self-esteem. In addition, it will also increase the sensitivity of the talented employees towards feedback and fear of failure (McNatt 2000). Finally, the allocation of rewards to high performers will cause resentment towards colleagues and reduce the non-talented employees' loyalty towards the organisation (Delong & Vijayaraghavan 2003).

Likewise, the inclusive approach to talent also has its drawbacks. The inclusive talent approach assumes that all employees are talented and have the potential positive qualities which will be good for the organisation. Most organisations will focus on the strengths of the employees. Critiques have claimed that one-sided focus on the strengths of the employees can turn them into weaknesses. Kaiser & Overfield, (2011) have shown evidence that ironically, managers who just focus on maximizing the natural talents rather than attempting to correct the weaknesses turn the strengths into weaknesses. The belief that all employees are talented with stable strength will create a strong fixed mind-set among the employees. They will believe that talent is born instead of made and once they fail in accomplishing a certain task, they will relate it to the lack of innate characteristics. This will make the employees become easily discouraged and cause them to avoid facing challenge (Dweck 2012).

Moreover, in certain conditions, organisations do need to find the right talent for the right positions (Collings & Mellahi 2009) as rare skills and technical knowledge are scarce. Thus, the inclusive talent approach is irrelevant for organisations that are involved in healthcare (Powell et al. 2013) and for technical engineers (Kim et al. 2014; Zheng et al. 2008). These scarcely available talents will be competitively hunted by those organisations as explained in the war of talent (CIPD 2009).

The second perspective that explains the definition of talent is elaborated from Meyers et al. (2013) point of view which define talent as either innate or acquired. They have answered the following questions: *Is talent an innate construct, is it mostly acquired, or does it result from the interactions between (specific levels of) nature and nurture components?* The definitions of talent can be mapped on a continuum ranging from completely innate to completely acquired talent. Figure 1.2 is a graphic representation of this continuum. The left of the continuum illustrates the arguments that place the greatest emphasis on innate features while the right continuum shows the central arguments in favour of talent acquisition by considering training, development and experience that contribute to excellent performance. The variance in talent is explained by nurture for more than 50 percent. The middle continuum portrays the arguments supporting the nature-nurture interactions as the basis of talent (Meyers et al. 2013).
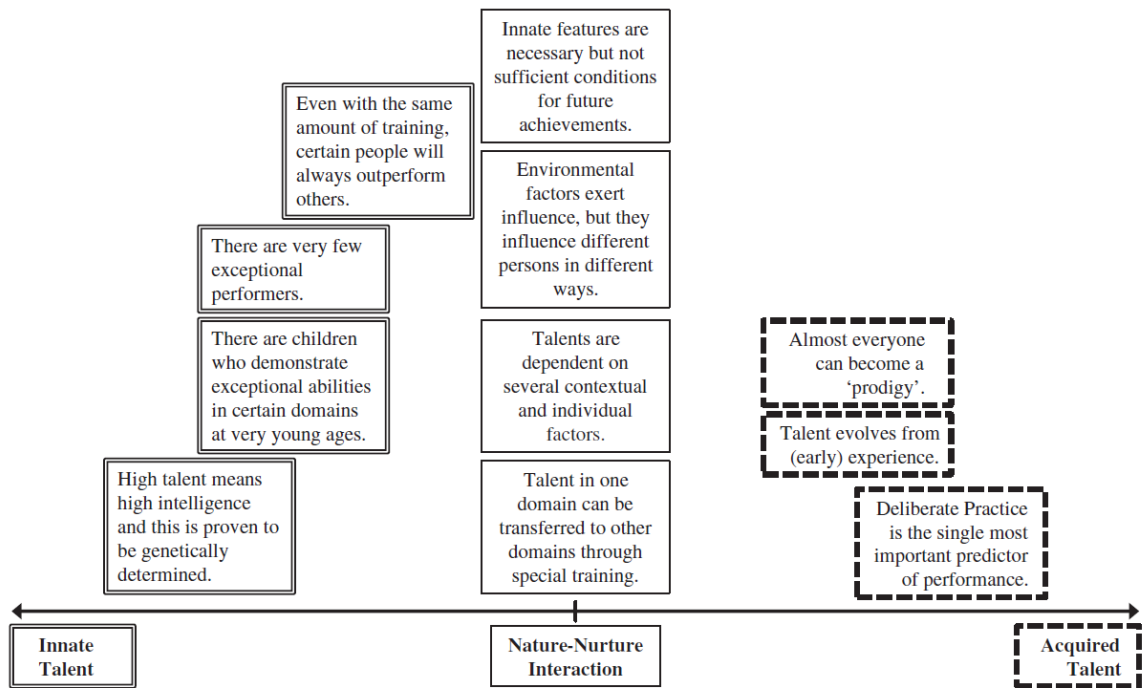
Adapted from Gallardo-Gallardo, E., Dries, N. & González-Cruz, T.F., 2013. What is the meaning of "talent" in the world of work? *Human Resource Management Review*, 23(4), pp.290–300.

Figure 1.2: Common Arguments Regarding Talent Mapped on the Innate-Acquired Continuum.

Meyers et al. (2013) have also explained the five most prominent approaches to talent within the different literature streams: (talent as) giftedness, individual strength, (meta-) competency, high potential, and high performance. *Talent as giftedness* originates from education science domain in which much research revolves around children and adolescents. There is still on-going debate on this approach about nature versus nurture interaction and highly exclusive in the implementation. *Talent as strength* stems from the positive psychology science domain and also has the same population of interest (i.e., children and adolescents). This approach to talent is more on innate basis, yet to some extent, it is developable and inclusive in nature.

Meanwhile, the other three approaches to talent are rooted in the HRM science domain. First, the (meta-) competency approach to talent has working adults as the population of interest. The belief held in this approach is that while knowledge and

skills can be developed, abilities and some other personal characteristics are innate. In the inclusive-exclusive debate, knowledge and skills are positioned rather inclusively whereas in the case of abilities, they are positioned rather exclusively. Second, *talent as potential* also originates from the HRM science domain. The population of interest are the working adults who are mostly younger workers and mainly based on innate factors but can and need to be developed. This approach is rather an exclusive approach to talent. Third, *talent as performance* is an approach which focuses on the working adults. This approach is mostly exclusive in nature as it links talent with performance.

This innate-acquired continuum holds important implications for the application of TM practices. Meyers et al., (2013) provide practical guidelines as to where organisations' definition of talent might be positioned on the innate-acquired continuum. The aspects of TM that are taken into account are identification of talent, training and development, succession planning, retention management and recruitment. Once a position on the innate-acquired continuum has been determined based on the type of talent that is needed, implications for TM can be derived. Meyers et al. (2013) have proposed that the innate talent assumption implies TM with strong focus on identification and retention of talent. Hence, only the innate talent is developed in the context of TM. The notion of innate talent is supported by the resource-based view of firms' theory (RBT). RBT holds the notion that organisations can derive competitive advantage from resources that are valuable, rare, inimitable, and non-substitutable (Barney 2001), and these criteria apply to innate talent. Furthermore, the notion of innate talent is linked to specific suggestions for dealing with talented employees once they are identified or recruited.

If the talent is assumed to be at the acquired talent continuum, it can be developed through training. The main difference between TM under the assumption of acquired talent versus that of the innate talent is that there is greater inclusiveness in the former approach. Thus, TM in this context places less emphasis on the talent identification and recruitment. The rationale of the inclusive TM is that all employees can become high flyers in terms of their performance.

The last dimension on the innate-acquired continuum is *talent resulting from nature-nurture interactions*. In the assumption of *talent as the product of the environmental factors*, the interaction perspectives are the practical implications towards talent. Research on talent transfer conducted by Bullock et al. (2009) has shown that talent in the domain can be transferred to other domains in a relatively short amount of time with limited efforts. The same applies to innate talent features that have to be identified for successful talent transfer. When defining talent as the product of nature-nurture interactions, talent identification benefits from the assessment of factors that reflect the ability to learn.

The innate-acquired continuum provides an in-depth theoretical review on the nature of talent and connecting the findings about talent with organisational TM. The different definitions of the term 'talent' entail different consequences for TM practices. According to Collings & Mellahi (2013), the question of "Talent − innate or acquired?" is a micro-level question that is important to be answered. It presents a comprehensive overview of the differing perspectives on talent, that is, innate versus acquired, and the implications towards the design of TM practices. This is aligned with the assumption that talented people produce outstanding performance that helps organisations achieve competitive advantage. Collings and Mellahi have further commented on the issue of

inclusiveness elaborated in the paper and addressed the issue of the lack of exclusivity of talent. They have also considered the role of context and its implications on talented individuals' performance. The commentary made by Collings and Mellahi on the inclusive and exclusive talent links the discussion with the second perspective of talent.

In summary, both perspectives in defining talent support a sound theoretical basis for the growth of TM as a research field. These types of contribution are needed because TM has been criticised for its lack of focus (Lewis & Heckman 2006). However, these two perspectives on the definitions of talent also create some tensions in TM literature. These will be discussed in this section.

Firstly, there is much debate in answering the question of "what (who) is talent?" This centres on the two approaches, namely, the object and the subject approaches to defining talent. In practical sense, the main issue revolves around what TM should manage. Other issues being debated include: is it *the people* or *the knowledge, skills and abilities of the talented people*? The discussion on the object approach are mostly issues related to the competence management whilst for the subject approach, the issue of knowledge management is raised.

Secondly, talent has been argued from the inclusive versus exclusive viewpoints. The debate centres on the predominance of talent in the population of the organisation. Thus, for the HR managers, knowing which principle they should follow in allocating their resources (i.e., employees) is essential. The discussion on talent, whether innate or acquired, has clearly indicated that the inclusive perspective is more strength-based approach compared to the exclusive perspective where workforce differentiation is implemented.

The third issue in the literature of talent is the innate versus the acquired perspectives. In other words, the debate is about whether talent can be taught and learned. In this debate, concerns are raised on how organisations manage the issue of labour market scarcities. If talent is believed to be innate, then the TM practices will be focusing on selection, assessment, and identification. By contrast, if talent can be acquired, then the TM practices will be directed more towards talent development and learning.

Another key point of discussion in the literature of talent is the ability or motivation of the talent. In this regard, the debate is on input versus output of the talent. On the one hand, if management focuses on the input, thus the TM practices will be focusing on effort and motivation of employees. On the other hand, the management can also just concentrate on the output such as the performance, achievement and results of the work.

Finally, the question "Is talent conditional on its environment?" has also sparked the discussion on whether talent is transferable or context-dependent. Thus, another question is raised: *Should organisations recruit externally or internally?* Practical implications for TM practices would be, if talent is transferable, then function of recruitment is important. By contrast, if talent is context-dependent, the issue of fit occurs. For example, most new employees will undergo probation for a certain period before being confirmed as a permanent employee to identify the suitability of the new employees with the organisation.

All the above questions have justified that the issue of talent and TM need more empirical evidence to enhance our knowledge on this topic. The appropriate definition

of talent will influence the type of TM practices that are being implemented in the organisation. It is obvious from the literature review that specific context and environment have a huge influence in deciding the type of talent and the relevant TM practices. Therefore, the present research was designed to contribute towards the enhancement of knowledge related to talent and TM practices.

1.3   Talent Management

There is a growing body of literature that recognises the importance of TM (Lewis & Heckman 2006; Collings & Mellahi 2009; Nijs et al. 2014; Gallardo-Gallardo et al. 2015). An indication of such increasing interest in TM within the academic community is the rising number of publications on TM for the past ten years. The most recent bibliometric and content analysis was done on 139 articles published from 2006 to 2014 by Gallardo-Gallardo et al. (2015). They have concluded that the TM field is in its expanding phase with most articles published in the following publications: *Journal of World Business, International Journal of Human Resource Management, Human Resource Management Review, Human Resource Management Journal, Management Decision, Harvard Business Review, Asia Pacific Journal of Human Resources* and *Personnel Review*. In their review, it has been indicated that the number of publications in journals with high impact factor has increased sharply since 2011. Hence, this increasing academic interest in TM had provided an impetus for the development of the present PhD research which was conducted from 2014 until 2016.

The claim that TM is a field of inquiry with a distinct lack of empirical research is questionable as most of the articles reviewed in Gallardo-Gallardo et al.'s (2015) content analysis were empirical in nature. Because of the emerging nature of TM research, qualitative research is the most commonly used methodological approach,

which is based predominantly on semi-structured interviews and case studies (Kim et al. 2014; Garavan 2012). This exploratory method is important in helping the conceptualisation development of this field in its early stages. Nevertheless, since then, the field of TM has entered its expanding phase, with an increasing number of studies using mixed-methods appearing in the literature (Powell et al. 2013). Yet, despite progress in the proliferation of research methods in the field, the use of quantitative methods in research remains sparse. The relatively small number of post-2010 quantitative studies have utilised logistic regression (Dries et al. 2012), cluster analysis (Lopez et al. 2011; Festing et al. 2013) and hierarchical regression (Harris et al. 2012).

Existing TM research confirms the importance of environmental context in influencing the management of talented employees. The Anglo-Saxon perspective has dominated research in TM ever since McKinsey consultants' seminal work (1997) to capture the 'war of talent' in the US. Their work has provided a valuable insight on the importance of TM, which has initiated more research from beyond the US context. To date, TM research has been published by researchers from 35 different countries with the US leading the ranking with the highest number of publications, followed by the UK (Gallardo-Gallardo et al. 2015). However, the locations where the data were collected or the contexts of these studies have shown that India is most prevalent, followed by the UK and the US, China, Belgium, Australia, and Spain. Notably, most authors publishing scholarly work on TM are from the UK, followed by the US, Australia, the Netherlands, Belgium and Ireland. The drive to publish TM research findings is based on different international settings and context is a testament to the importance of TM for organisational performance.

As the field moves to adolescence, insight from beyond the Anglo-Saxon context like such as the European (Collings et al. 2011) and Asia Pacific perspectives (McDonnell et al. 2012) contribute to the emergence of TM as a growing field. The emergence of the European perspectives on TM gives different insights into the conceptualisation and understanding of TM (Collings et al. 2011). It has been noted that more than 50% of the data collected in TM research comes from Europe (i.e., the UK, Belgium, Spain, Ireland, the Netherlands, Switzerland, Sweden, Poland, Italy, France, and Germany). Publications on TM from the Asia Pacific region have also started to emerge (McDonnell et al. 2012) with studies from the Asian contexts conducted mainly in India and China and also in Lebanon, Iran, Jordan, Saudi Arabia, Singapore and Thailand. Interestingly, the findings in this field to date have suggested that traditional western approaches seem to be working in a non-western culture. For example, studies in China (Hartmann et al. 2010; Zhang & Bright 2012) and India (Cooke et al. 2014) have shown that cultural fit and values influence the TM practices implemented. Research from different regions captures different TM issues and contributes to the development of this field.

1.4   What is Knowledge?

"Knowledge is a multifaceted concept with multi-layered meanings" (Lewin &

Nonaka 1994: 15)

The traditional epistemology defines knowledge as "justified true belief" that emphasises three important components of "truthfulness", "belief" and "justification". Freeman (2001: 250), in his paper entitled *'IS Knowledge: Foundations, Definitions and Applications'* defines knowledge as 'information that has been validated and is thought to be true'. On the other end of the spectrum, Baskerville and Dulipovici

(2006:100) have arguably covered everything about knowledge in their definition: 'knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight', and is distinguished from information (quoting from Wiig 1993) 'by the addition of ''truths, beliefs, perspectives and concepts, judgements and expectations, methodologies and know-how'''.

Table 1.2: Definitions of knowledge as summarised by Mingers (2008).

References	Definitions of Knowledge
(Van der Spek & Spijkervet 1997)	Knowledge is that which enables us to assign meaning to data.
(Wiig 1993)	Knowledge consists of truths, beliefs, concepts, judgements and expectations.
(Earl 1994)	Knowledge is tested, validated, and codified information.
(Miller at al. 1997)	Concentrate on what the knowledge is about and specify know-what, know-why, know-how, know- who and experiential knowledge that can involve any of the others.
(Blackler 1995)	Drawing on Collins (1993), focuses on where the knowledge is situated and distinguishes between knowledge that is embrained (cognitive), embodied (perceptual), encultured (social), embedded (systematized) and encoded (formal or symbolic).
(Stenmark 2001; Tsoukas & Vladimirou 2001)	Refer to the distinction between tacit knowledge and focal knowledge originated by Polanyi (1958) and popularized by Nonaka & Takeuchi (1995).
(Alvesson &Karreman 2001: 995)	Knowledge 'is an ambiguous unspecific and dynamic phenomenon, intrinsically related to meaning, understanding and process and there- fore difficult to manage'.
(Marshall and Sapsed 2000:12)	Emphasise the 'importance of considering knowledge not simply as a stable and unproblematic object that can be effectively decontextualized and freely circulated, but

	as a complex, dynamic, and situated series of processes'.
(Jakubik 2007)	Identifies four emerging views of knowledge: the ontological view, which is concerned with the nature and location of knowledge; the epistemological view, which is particularly concerned with the production and justification of knowledge; the commodity view, which sees knowledge as a resource for the organization; and the community view, which focuses on knowledge as a social construction.

The variety in the definitions that exist has sparked the debate on the three important concepts that are used interchangeably, namely, data, information and knowledge. These three concepts will be discussed in this section.

Data, either in singular or plural form, can be defined as information of any form on which a computer programmes operates, and it is distinguished from any contrasting form by the fact that it is organised in a structured, repetitive and often compressed way (Dictionary of Computing 1996: 8). This definition is too narrow, as data does not necessarily have to be processed by a computer. Therefore, another comprehensive definition of data from organisational context perspective is: "a representation of facts, concepts or instruction in a formalised manner in order that it may be communicated, interpreted or processed by human or automatic means" (Longley & Shain 1986:81). Hence, data is important, as it is the essential raw material for the creation of information.

According to Davenport and Prusak (2000:3), "data becomes information when its creator add meaning". Data is said to be raw and meaningless until it is processed into information, which is more meaningful. However, knowledge is more than information. In KM literature, it is common to draw up a ladder from *data* to

information to *knowledge* – what Tuomi (1999) refers to as the knowledge hierarchy. To give some examples, for Davenport and Prusak (1998) *data* are discrete facts about the world, which in themselves are meaningless and *information* is data that has been processed or interpreted within a particular context to inform or reduce uncertainty while *knowledge*, as defined by Grover and Davenport (2001), refers to information that is even more valuable because of the addition of insight, experience, context or interpretation.

In summary, Mingers (2008) suggests three general problems that exist in the theories of knowledge, from the definition of knowledge to all the emerging views of knowledge. First, a large number of publications have not defined what knowledge means and have opted for the "simplistic and unquestioning view of knowledge". Second, some authors have not acknowledged the different forms of knowledge and have not made the distinctions between data, information, knowledge, and 'knowing'. Third, surprisingly, as noted by Mingers (2008), none of the reviewed literature considers the relation of knowledge to the truth.

1.5 Knowledge Management

The concept of knowledge management (KM) was first introduced by Nonaka (1991). In recent years, KM has been recognised as a key instrument for the improvement of organisational effectiveness and performance. The term knowledge-creating organisation has led to the discussion on how to manage employees' knowledge so that it can be the source of a sustainable competitive advantage. Furthermore, the theory proposed by Nonaka and Takeuchi (1995) on organisational knowledge creation conceives knowledge as the main ingredient of sustainable competitive advantage. Likewise, studies have suggested that there is a positive effect of knowledge and

learning systems on innovation processes and outcomes (Lewin & Nonaka 1994; Alegre et al. 2011). Fundamentally, KM consists of the creation and application of knowledge as the most strategically important resource at an organisation's disposal (Grant 1996). However, static KM practices are not sufficient to achieve better financial or innovation performance on a continuous basis. Static KM practices tend to lead to better performance for only a limited period of time. Therefore, it is also important that the implemented KM strategy is inimitable in order to sustain a long-run competitive advantage. Hence, besides being strategic, the organisation also needs a KM dynamic capability in order to adapt and renew this KM practice configuration so that superior performance can be sustained.

The field of KM is unique in a sense that it overlaps with many other fields such as human resource management (HRM), performance management, accounting, philosophy, and information technology (Ragab & Arisha 2013). The overlap between KM and HRM is based on the fact that "people" are the main drivers of KM (Yahya & Goh 2002). Thus, the alignment of TM and KM are possible as both of these management practices have always been part of the responsibilities of the human resource department in the organisation. KM is defined as the organised process of creating, capturing, storing, disseminating, and using knowledge within and between organisations to maintain competitive advantage (Lewin & Nonaka 1994; Davenport & Prusak 1998). Unlike the controversy surrounding the definition of TM, there is a general consensus on the definition of KM. Another appropriate definition of KM is as "[a] conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organisational performance" (O'Dell et al., 1998:156). This definition is in line

with the definition of strategic TM, which implies that the right knowledge should go to the right people at the right time, so that people could share and transform information into action in ways that can sustain the competitive advantage of the organisation and elevate organisational performance.

TM articles with a KM orientation are typically interested in identifying and assessing organisational-level interactions that can facilitate knowledge-intensive organisations in fully exploiting the organisations' human resources in order to maximise innovation capabilities (Gallardo-Gallardo et al. 2015). For example, Whelan et al. (2010) use a knowledge-intensive setting for analysing a case study that applies the principle of TM (i.e., the research and development division of a medical device company) to identify the characteristics of key employees in the knowledge flow network. In a follow up study, Whelan & Carcary (2011) describe a framework on how managing key talent contributes to KM. Essentially, they argue that, in managing people, the elements of talent and knowledge management are very much inter-related. KM strategy focuses on a humanistic approach, as the creation of knowledge implies an intense process of interaction, which is characterised by the transfer of both tacit and explicit knowledge (Nonaka & Takeuchi 1995). As a consequence, top management should nurture a knowledge-friendly culture throughout the organisation and the HR department needs to be responsible for communicating the benefits of an effective KM strategy on performance.

1.6   Perceived Strategic Importance of Human Resource

The moderating variable in this study is the perceived strategic importance of human resource. This variable examined the relationship between top management's views on the strategic importance of employees and the level of attention given for strategic

human resources in the organisations. Rooted in RBT, the attention-based view theory explains how the behaviour of an organisation is influenced by how the attention of decision makers is distributed. RBT also explains the role of strategic human resource management and this has contributed to our understanding of the structure – strategy – performance paradigm. In this study, the strategic HRM (SHRM) perspective was adopted, which sought to focus on organisational performance rather than individual performance. The strategy was related to building a sustainable competitive advantage, which in turn would lead to above average financial and innovation performance. The SHRM model is rather intuitive in explaining the relationship between an organisation's HR architecture and performance.

However, even in the SHRM framework, the mechanisms that explain how HR architecture actually influences organisational performance are still lacking. Almost a decade ago, Becker & Huselid (2006) labelled these unknown mechanisms as the "black box" of the HR function. Nevertheless, the "black box" described by Becker and Huselid in 2006 was the catalyst for the development of a growing new field in HR, that is, talent management. In the last 10 years, the literature on TM had expanded with a critical review by Lewis & Heckman (2006), the same year that Becker and Huselid (2006) had published their "black box" article as they were mapping the future of SHRM. Three years later, the black box was articulated by Collings & Mellahi (2009) to be the strategic TM.

The future of SHRM with the human resource architecture has been gaining a new impetus with the growing field of strategic TM, although the design of any architecture in the organisation is still mainly within the remit of senior management. The fact is that, if 10 years ago, human resource architecture was introduced by Becker

& Huselid (2006), now Sparrow & Makram (2015) have introduced talent management architecture. This is a reflection that the development and management of organisations are becoming more strategic. More attention is given by senior management to this particular aspect of strategic management in which human resources involving talented employees become increasingly important for an organisation's sustainable competitive advantage. If more attention is given to strategic TM, it will have a beneficial effect in boosting organisational performance. Within the context of strategy, sustainable competitive advantage is achieved through owning a valuable, rare, non-imitable and non-substitutable resource. Talent and knowledge management strategies are crucial for creating the attributes that enable an organisation to implement value-creating strategies and to achieve a sustained competitive advantage. Hence, it is safe to presume that value resides in the unique set of knowledge, capabilities, contributions, commitment, skills, competencies and abilities possessed by organisation's talented and knowledgeable employees.

1.7   Organisational Performance

This PhD study aimed to examine the relationship between TM and KM on organisational performance in the context of Malaysian SMEs. The performance of SMEs was divided into two measures, namely, financial performance (Ho et al. 2016) and innovation performance (Hosseini 2014). These two organisational performance measures were perceived to be relevant especially in the context of SMEs as they would be very important for sustaining competitive advantages (Humphreys et al. 2005; Georgellis et al. 2000; Alegre et al. 2011). Perceptual measures of organisational performance have been used with success in several studies of small organisations (Greer et al. 2015; Festing et al. 2013; Valverde et al. 2013). Following Caridi-Zahavi

et al. (2016) that calls for further studies to employ multiple subjective and objective measures, this study used financial and innovation performance as two main performance measures. Both of these performance measures enable this study to take advantage from more than one type of performance measures.

According to Forth & McNabb (2008), subjective and objective performance measures do measure organisational performance in different ways. In particular, subjective measures are typically framed in term of performance of an establishment relative to its competitors. Furthermore, subjective performance measures are more broadly defined than objective ones. However, subjective measures have its own limitations. For example, subjective performance measures were influenced by the respondents' personal judgement. This raised the question of whether the measures of subjective performance that are typically used are accurate indicator of actual performance due to respondents' subjective assessment of relative profitability, as opposed to absolute.

On the other hand, objective performance measures also has its own limitations. In this study, objective performance measures are too rigid and the data collected are unable to capture the complexity and diversity of HRM practices being implemented in the organisations especially in looking at the relationship between talent-and knowledge management on organisational performance. Since, both objective and subjective measures have limitations, using both types of organisational performance (i.e. financial and innovation performance) addresses the limitations of using one type only whilst offering a more nuanced and comprehensive account of the favourable relationship between HRM bundles like TM-and KM and organisational performance (Subramony 2009).

Therefore, this study uses subjective and objective organisational performance measures for both financial and innovation performance measures. The subjective financial performance measures were obtained through survey questions which requested the respondents to rate their companies' performance based on growth of sales, profit margin on sales, and return on investment over the past three years compared to the performance of their competitors in the same industry. In addition, as mentioned earlier, this study also used objective financial performance measures. These were questions that involved an impartial measurement without bias or prejudice. Hence, few objective financial performance measures like sales turnover for the past year, number of employees and the age of the company are also explored. These three objective financial performance measures were utilised as control variables in the analysis of the data.

The same goes for innovation performance that uses subjective and objective measures. For subjective innovation performance, the measures were adopted from OSLO Manual scale of assessing the economics results of product innovation (OECD, 2005). For example, respondents were asked to indicate on a 7-point Likert-type scale, ranging from 'much worse' through to 'about the same' to 'much better' or 'about the same', and how the respondents rate their company's innovation performance as compared to their competitors. On the other hand, the objective innovation performance measures utilised the 1-InnoCERT rating (i.e. A, AA, AAA); secondary data given by SME Corporation Malaysia (the government body that manage Malaysian SMEs) as objective performance measures. These two innovation performance measures enable this study to eliminate the potential of common method variance (CMV) (please refer section 4.6 for more information). According to Podsakoff (2003), the CMV effects

occurs if the same respondents provide information for both assessment of both independent and dependent variables. The utilisation of innovation performance measures from the survey and 1-InnoCERT rating from SMECorp eliminates the potential of CMV effect in this study (Podsakoff & Organ 1986; Podsakoff 2003).

In addition to the above reasons, utilisation of both financial and innovation performance as the organisational performance measures also addresses the limitations of using one type of performance measures only. Particularly, multiple performance measures like financial and innovation performance are used in this study in order to increase the methodological rigour in demonstrating the relationship between TM-and KM on organisational performance. With multiple subjective and objective organisational performance measures, this study not only relies on one method of analysis which is ordinal least square regression in testing the hypotheses but also utilise more possible analysis like binomial and multinomial regression in testing the relationship between TM-and KM on innovation performance using the available objective performance measures of the secondary data (i.e. 1-InnoCERT rating; A, AA, AAA). The results further reconfirm the main findings of this PhD research.

1.8   Why Malaysia?

Malaysia is geographically located in the centre of South East Asia. It consists of 14 states of Sabah, Sarawak, Perlis, Kedah, Perak, Kelantan, Terengganu, Selangor, Negeri Sembilan, Johor, Pahang, Pulau Pinang, Melaka, and the Federal Territories. Malaysia is a suitable research context for this study because of a few reasons.

First, it has a unique multi-racial population. The main ethnic groups are the Malays, the Chinese, and the Indians as well as the minority of Indigenous people. This

population mix is the result of the immigrants from China and India who came to Malaysia in the 19th century (Andaya et al. 2016). Hence, besides Malay language, people in this country can also speak Chinese, Tamil and other languages depending on their ethnicity (Hirschman 1987). This multi-racial population in Malaysia provides diversity in labour-force for business organisations. Exploring the association between TM-and KM on organisational performance looking at diverse population in Malaysia would give new insights. Since systematic and strategic diversity management contributes to better organisational performance (Bell et al. 2011; Jayne & Dipboye 2004), hence Malaysia is a unique setting to test the relationship of TM-and KM on organisational performance.

Second, Malaysia is a country with an emerging economy. In the new millennium, Malaysia has moved from productivity-driven growth phase to a knowledge-based and technology-driven phase. Furthermore, the fourth Prime Minister of Malaysia, Tun Dr Mahathir Mohamad had earlier presented *Vision 2020* as a milestone for Malaysia to become a developed country in the year 2020. This study was conducted from 2014 until2016, that is, four years away from the year 2020. This makes Malaysia an interesting research context as a developing country that is nearly approaching its vision to achieve a developed country status. This also raises a question of whether Malaysia is ready and capable to be a developed nation. Hence, by studying TM and KM in this specific research context, Malaysian SMEs would give valuable and different insights.

Third, although Malaysia is an emerging economy, it has become a suitable research context for this study because of the nation's uncertain environment. Research has found that the relationship between knowledge-based resources and financial

performance is better relationship in uncertain environment as compared to that in a stable environment (Miller & Shamsie 1996). Because the present study sought to examine the relationship between TM practices and KM strategy and their effects on organisational performance, talent and knowledge would be fit to be considered as knowledge-based resources, defined as valuable resources unable to be imitated by competitors as these resources would involve talents or particular knowledge or skills, whether technical, creative, and collaborative. In an uncertain environment context like Malaysia, TM and KM would most likely contribute to performance (Miller & Shamsie 1996). Thus, testing TM and KM relationship with organisational performance in the context of Malaysia might produce some notable findings.

1.9 Why SMEs?

This study also narrowed down the research context into small and medium-sized enterprises (SMEs). This was done because of the following reasons: (1) the advantage of ASEAN integration; (2) SMECorp as the supporting government body; (3) innovation; (4) medium-sized enterprises with larger HRM department; (5) SMEs as the ideal setting for ABV theory. First reason - Malaysia is a member of Association of South East Asian Nations (ASEAN); this gives the nation a collaboration advantage especially for SMEs. This collaboration advantage for all SMEs within the ASEAN region is made through Asian SME Conference held yearly. This annual conference is organised by the Asian Council for Small Business to improve the networking among SMEs in ASEAN countries (International Council for Small Business 2015).

Malaysia as one of the ASEAN country is benefiting from ASEAN Economic Community (AEC). Figure 1.3 illustrates the AEC timeline up to 2025. A formal establishment of the AEC made in 2015 would give better implications to Malaysia and

countries in ASEAN community. AEC is transforming ASEAN into a region with free movements of talent and knowledge workers. The ASEAN Agreement on the Movement of Natural Persons provides the legal framework to facilitate temporary cross-border movement of people engaged in the conduct of trade in goods, services and investment (ASEAN Secretariat 2015). Furthermore, there are five strategic measures in the AEC Blueprint 2025 that also have strategic impacts on the development of talent and knowledge workers in this region.

Figure 1.3: ASEAN Economic Community Timeline.

The five measures are: (1) a highly integrated and cohesive economy; (2) a competitive, innovative, and dynamic ASEAN; (3) enhanced connectivity and sectoral cooperation; (4) a resilient, inclusive, and people-oriented, people-centred ASEAN; (5) a global ASEAN. With regards to this strategic planning for ASEAN up until 2025, another important key component of the AEC enhancement of the competitiveness and expansion of SMEs in ASEAN through flagship projects under the Strategic Action Plan for ASEAN SME Development. This has led Malaysia to unveil SME Master Plan

(2012-2020) as part of its contribution to the AEC 2025 strategic plan. The following reasons further elaborate the roles played by SMEs in contributing to the AEC Blueprint 2025.

Second reason - SMEs in Malaysia is a suitable setting for this research because Malaysia is preparing the SME for the year 2020 through SME Master Plan 2012 - 2020. Figure 1.4 explains the target sets in SME Master Plan 2012-2020. SMEs are critical to the economic transformation as they form the domestic source of growth for the private sector. SMEs are also important in stimulating innovation and act as stabiliser of growth when the economy is bad. SME Corporation Malaysia (SME Corp. Malaysia) has become the central custodian agency and secretariat to the National SME Development Council. In 2010, SMEs contributed 32% to the nation's gross domestic product (GDP) up from 29.2% in 2003 (Industrial Master Plan 2006/2020) and this figure is expected to increase to 41% by 2020 (SMECORP 2012). SMEs are an important part of the Malaysian economy. Their contribution to the country's GDP in 2014 rose significantly to 36% (2013: 33.5%). In 2015, SMEs were expected to continue on a sustained growth path of 5.0–5.5%.
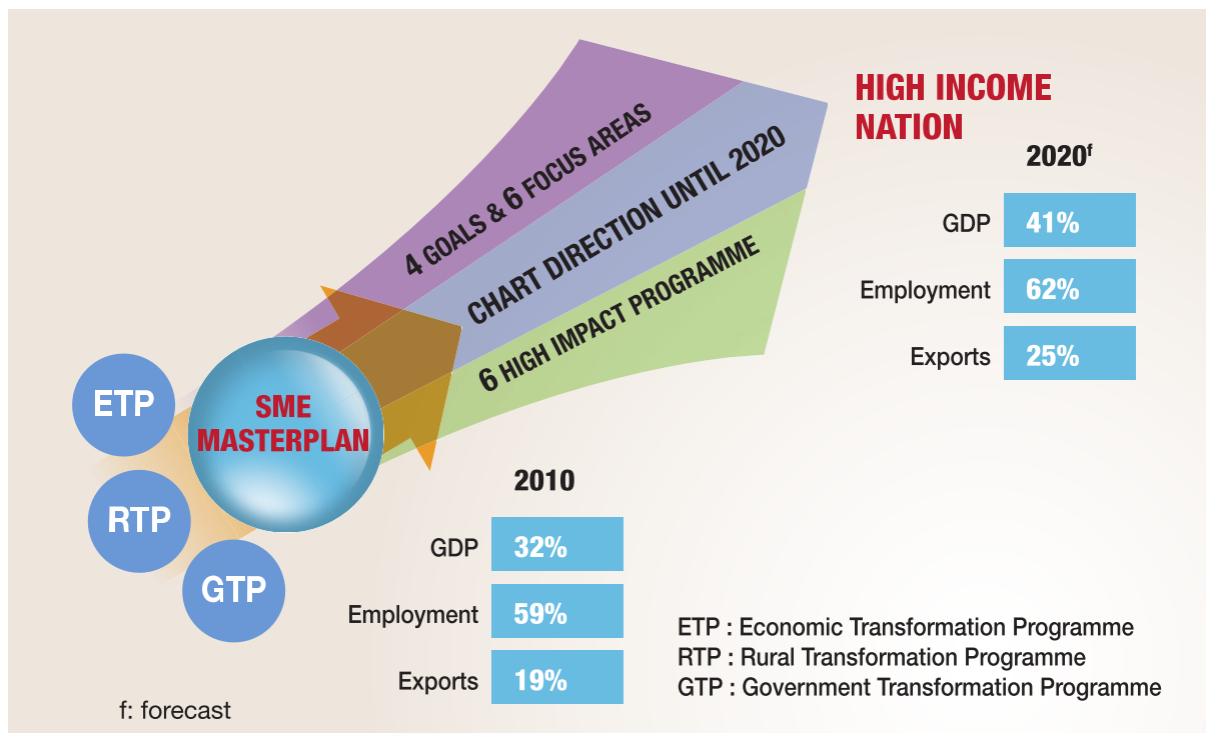
Figure 1.4: Target Sets in SME Master Plan for 2020.

To achieve growth targets, the Malaysian government has formulated a set of comprehensive strategies and policy measures. According to SME Master Plan 2012–2020, there are six growth levers that contribute to the high performance of Malaysian SMEs. These growth levers are:

1. Innovation and technology adoption;

2. Human capital development;

3. Access to financing;

4. Market access;

5. Legal and regulatory environment; and

6. Infrastructure.

The six strategic plans are geared towards improving SMEs' capability to deal with competition, standards and liberalisation, public service delivery, narrowing disparity, government's role in business, and human capital development (SMECORP

2012). Hence, the development of SMEs is one of the government's major agenda. This study aimed to contribute to the first and second levers, namely, 'innovation and technology adoption' and 'human capital development' by examining the contribution of knowledge-based resources (i.e., talent and knowledge) towards organisational performance. Due to this unique setting, Malaysian SMEs have become an ideal research context for this research. It could be argued that with the right level of talent and KM strategy being implemented in the context of SMEs, organisational performance of these companies may be improved.

Third reason - Malaysian SMEs provide an excellent setting for this research in this area of study due to one of the most successful programmes organised by SMECorp, that is, the 1-InnoCERT. This programme is tailored to help SMEs to embrace and venture into high technology, innovation-driven industry. The aim of this programme is to foster innovative enterprise through harnessing and intensifying home-grown innovation, and research and development (R&D). According to SMECorp official website (SMECORP 2015), the 1-InnoCERT certification awards, identifies and verifies innovative companies through an internationally-recognised innovation standard (OECG Oslo Manual V3) and the certification process is developed from similar process practiced in Korea's Innobiz (Innovation SME) Certification programme.

In 2014, 1-InnoCERT companies have received loans approvals amounting to RM28.1 million from the government plus the Innovation Vouchers, or promissory note of reimbursement grant for innovation development R&D, advertising and promotion, as well as quality management system (QMS). SMECorp had shared the list of 90 1-InnoCERT certified companies (i.e., A, AA, AAA) as at 2013. These 1-InnoCERT

certified companies were included in the present research sample as innovation performance was used as one of the key indicators of success in this research.

Figure 1.5: 1-InnoCERT Certification Process.

1-InnoCERT certified companies are companies that have passed the certification process. Figure 1.5 above illustrates the two stages of the certification process. First, the SMEs must pass the online self-assessment test with scores ranging from 0 to 1,000. A score of higher than 700 is an indication that the company is ready to comply with 1-InnoCERT requirement. The second stage is the application process for those companies that have pass the on-site audit, subject to the approval by 1-InnoCERT committee.

Fourth reason - this study was designed to sample data from medium-sized enterprises as these companies would have better HRM department as compared to micro and small companies. Based on the definition given by SMECorp Malaysia which acted as the secretariat to the National SME Development Council in October

2013, SMEs may be defined by the size of their operations, which could be divided into two categories: (1) manufacturing; and (2) services and other sectors. For the manufacturing industry, small enterprises are those companies with sales turnover from RM300, 000 to less than RM15 million *or* full-time employees from 5 to less than 75. For services and other sectors, small enterprises are those with sales turnover from RM300, 000 to less than RM3 million *or* full-time employees from 5 to less than 30.

Meanwhile, medium-sized enterprises are those manufacturing companies that have sales turnover from RM15 million to not more than RM50 million *or* full-time employees from 75 to not more than 200. For services and other sectors, medium enterprises are companies with sales turnover from RM3 million to not more than RM20 million *or* full-time employees from 30 to not more than 75 (SME Corp. Malaysia 2013). Hence, TM development is more relevant to be studied in medium-sized enterprises. Although not all respondents of this study were sampled from medium-sized enterprises, majority of the respondents were senior management from medium-sized enterprises. Most management research areas are applicable to SMEs; however, in this particular case of TM and KM, this current study focused on the 'driver of growth' in the economy. Hence, the research area would be applicable to the medium-sized enterprises (see Figure 1.6). Furthermore, the medium-sized enterprises have a certain degree of structure that need specific attention if the study involved people management is (Valverde et al. 2013).
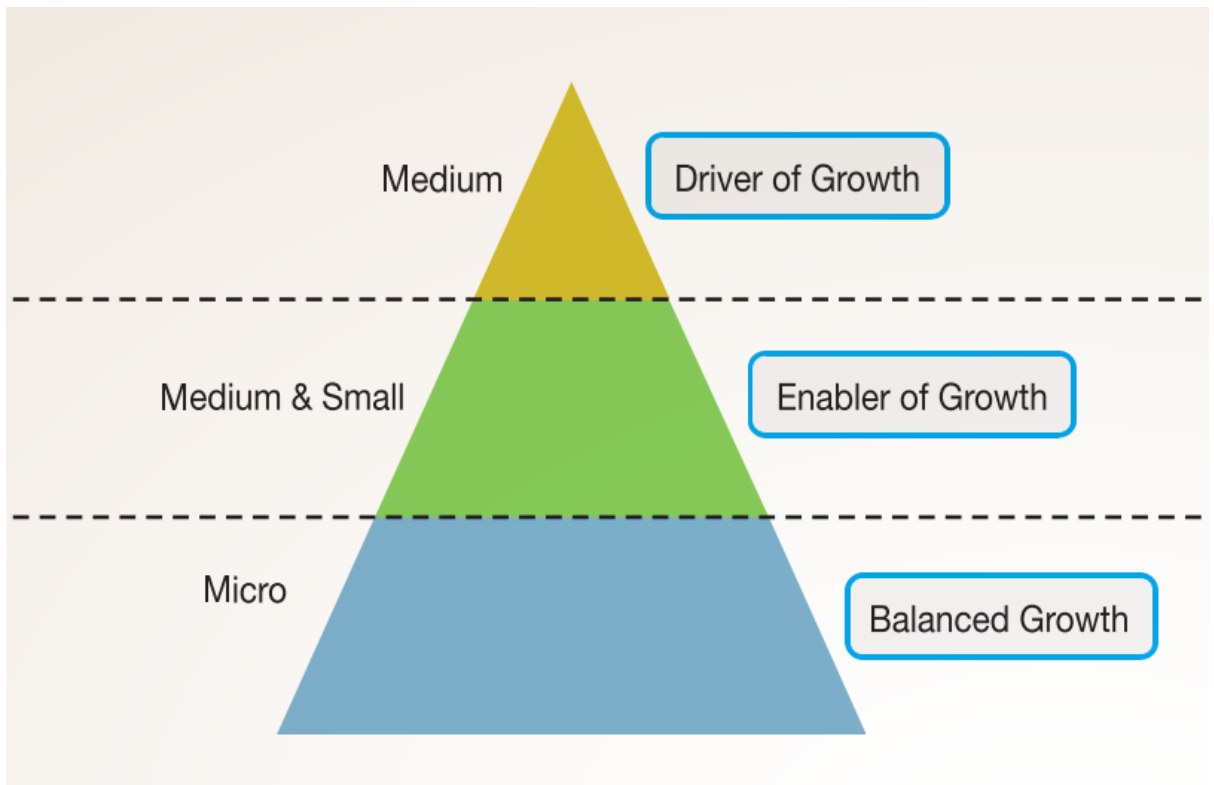
Figure 1.6: Role of SMEs in Malaysia Economy.

The fifth reason is from theoretical point of view, smaller organisations like SMEs provide the ideal setting for research employing the attention-based view (ABV) theory, as small organisations are known for their reliance on top management or the founder. In this regard, the senior management often dictate the strategic direction of the companies. Managerial attention is thus a constrained resource in smaller organisations to a greater extent than it is in large companies (Chadwick al. 2013). Previous studies (Wales et al. 2013; Greer et al. 2015; Dahlander et al. 2016) have also noted that smaller organisations provide an ideal setting for research employing the ABV theory because managerial attention is more constrained, with less opportunity for senior management to delegate responsibilities.

1.8   Research Problems

It has been noted that Malaysia ranked 30th in the Global Talent Competitiveness Index (GTCI) 2015-16 and is the top-ranked country in the group of 'upper-middle income countries'. Talent competitiveness is defined as the set of policies and practices that will enable a country (or a region, city, or organisation) to attract, develop, and retain human capital that contributing to its productivity, which refers to output per unit of input). In the context of GTCI, talent competitiveness is the set of policies and practices that will enable a country to attract, develop, and retain the human capital that contributes to an increase in the productivity of a country. The four input pillars (i.e., Enable, Attract, Grow, and Retain) quantify the drivers of cross-country talent performance, with its two output pillars (i.e., Labour and Vocational Skills, and Global Knowledge Skills).

According to the GTCI (2015-16) report, Malaysia performs particularly well in the 'Enable' and 'Grow' pillars. In addition, part of the attraction of talent in Malaysia is due to an excellent performance in terms of variables related to management practices such as 'employee development' and 'relationship of pay to productivity' (Lanvin & Evans 2015: 50). Lanvin and Evans have noted that "Malaysia's long-term attractiveness as a talent hub is, however, currently put to the test as the country weathers through its biggest political crisis since its independence in 1957" (2015: 73). Furthermore, the New Economic Policy was one of the main reasons why Chinese and Indian talent left Malaysia to work in other countries despite Malaysia being the second most attractive country for talent in ASEAN after Singapore. Therefore, studying TM in the context of Malaysia is of particular interest and promises

to offer new insights because of the context and diversity of human capital in the country.

Despite the long-standing debate on TM as an important practice besides HRM, it is evident that establishing the link between TM and organisational performance empirically has been elusive (Boudreau & Ramstad 2005a; Collings & Mellahi 2009; Gallardo-Gallardo et al. 2015). By far, RBT is the dominant theoretical framework applied in the TM literature. One of these criticisms relates to the VRIN framework, which is neither necessary nor sufficient for sustainable competitive advantage. The main concern remains, that is, the lack of empirical support to prove the positive relationship between resources that have the VRIN characteristics and sustainable competitive advantages (Kraaijenbrink et al. 2010; Kraaijenbrink 2011). This has led to the discovery of the importance of "organisation" (O) extending the VRIN characteristics in sustaining competitive advantages (Barney & Wright 1998). A firm would also need to be organised in such a manner to exploit the full potential of such resources if it was to attain a competitive advantage (Barney 1997: 160).

Previous studies that adopted RBT as the supporting theoretical framework have defined talent as 'human capital' considered both highly valuable and unique (Lepak & Snell 1999). However, RBT has been criticised especially in terms of how it deals with human capital resources. Hence, Ployhart et al. (2014: 371) have redefined human capital resources as "individual or unit-level capacities based on individual knowledge, skills, abilities, and others (KSAOs) that are accessible for unit-relevant purposes". At another level, this PhD study utilised strategic human capital resources by conceptualising talent and knowledge as the unit-level capacities that are accessible for unit-relevant competitive advantage. If strategically exploited, talent and knowledge

that have the VRIN characteristics could contribute to a sustainable competitive advantage and a sustained performance (Barney 1991; Crook et al. 2008).

This study employed alternative theoretical approaches within the RBT in supporting the relationship between strategic human capital resources and innovation performance. The dynamic capabilities framework would explain how combinations of competencies and resources could be developed, deployed, and protected. Dynamic capabilities refer to "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al. 1997: 510). In this study, the predictions of the RBT framework was tested by examining talent and knowledge from an organisational-strategic point of view, adopting the interpretation of talent as strategic human capital resources in organisations considered as both valuable and unique. It was presumed that the main objective of strategic TM would be to increase the value and uniqueness of human resources by having the right people at the right position and also known as 'pivotal position' in strategic TM (Boudreau & Ramstad 2005a).

Due to unvisited theoretical aspects in RBT theoretical framework and strategic human capital resources, especially in the growing field of literature in TM and KM (Gallardo-Gallardo et al. 2015; Whelan & Carcary 2011; Whelan et al. 2010), little is understood of the relationship between talent and knowledge management practices and their effects on organisational performance, especially in the context of small and medium-size organisations. Financial and innovation aspects of performance were the two performance measures utilised in this study.

Knowledge has also been identified as a critical source of competitive advantage (Barney 2001; Nonaka & Takeuchi 1995). Recent research has proposed a knowledge-based view (KBV) of the firm by building upon and extending the RBT (Grant 1996). Fundamentally, KM consists of the creation and application of knowledge as a resource and it focuses on knowledge as the most strategically important resource at a firm's disposal (Grant 1996). Strategic KM relates the organisation's knowledge to three important elements: (1) The design of organisational structures that promotes knowledge (2) organisational strategy and, (3) the development of knowledge professionals (Perez & Pablos 2003). In other words, strategic KM emphasises on people who are the owner of the knowledge. This study aimed to clarify and measure the contribution of TM practices and KM strategies to financial and innovation performance and thereby to the sustainable competitive advantage of the organisations in an under-researched context, that is, SMEs (focusing on medium-sized enterprises).

The smaller numbers of employees in SMEs increases the managerial attention that senior management pay to their employees. More attention given to human resources increases the value of employees. In line with RBT, in the context of smaller organisations, when senior management and owners perceive human resource as strategically important, organisational performance is improved. The aim of this study was to test this conjecture and to contribute to the RBT framework, using information from organisational level surveys administered to the senior managers and managing directors of 144 Malaysian SMEs.

This study also sought to explore the possibility of the curvilinear relationship among TM, KM and organisational performance as. While low to moderate levels of TM/KM may enhance performance, this study argued that the combination of the

resource constraints faced by smaller organisation and resource intensive nature of talented employees, may limit these performance effects at elevated levels of TM and KM implementation and that these effects may even turn negative to the point where they would actually bring harm (i.e., resulting in below zero returns to performance). Further, to better understand how curvilinearity would manifest itself within the TM/KM–organisational performance relationship, the senior managements' perceived strategic importance of HR would be explored as a moderating variable, influencing SMEs' ability to orchestrate their limited resources more successfully, enabling higher returns from TM/KM. In exploring this moderating influence, the present research sought to offer an insight into how the optimal level of TM/KM may vary as a function of specific organisational-level capabilities and whether an intermediate level of TM/KM would always be optimal.

1.9   Research Approach

This study utilised a quantitative approach to test the relationship between talent management practices and knowledge management strategy and their effects on organisational performance. The performance measures were not limited to financial performance but also included innovation performance. Because of the ordinal nature of the dependent variables, an ordinal least squares regression analysis was utilised for the main estimations. In addition, senior management's perceptions of strategic importance of human resource in the organisation was tested as moderating variable. The present research hypothesised that senior management's perceptions would have positive interaction effects on TM/KM strategy and organisational performance relationships. Survey questionnaires were used to gather information from the

organisations online and through emails to senior managers and managing directors of Malaysian SMEs sampled in the present study.

Summary

Investigating talent management (TM) and knowledge management (KM) is a continuing concern within the field of strategic human resource management especially when they are link to performance. Talented employees with valuable knowledge, skills, and capabilities have a pivotal role in sustaining competitive advantage. Determining the impact of TM and KM practices on performance is important for the future of business organisations. The main contribution of this study would thus be to confirm the importance of TM and KM in the context of smaller organisations such as SMEs. The management of these two valuable strategic human capital resources (i.e., talent and knowledge) would enhance not just financial performance of the organisation but also innovation performance. These relationships are more relevant in the context of SMEs as it is more critical for them to sustain competitive advantages. With a flatter organisational structure and a more flexible working environment, SMEs would have the added value in tailoring TM and KM practices to suit their capability for better financial and innovation performance.

This particular PhD research was designed to determine the relationship between TM and KM and their effects on organisational performance in the context of Malaysia. Several attempts had been made to test these relationships in the context of SMEs in past studies; nevertheless, most of these studies had been conducted in Anglo-Saxon countries (Gallardo-Gallardo et al. 2015). Testing these relationships in an emerging economy will likely give new insights into the interconnectedness of TM, KM and the performance of SMEs. Moreover, Malaysian SMEs have performed

remarkably well, with growth exceeding that of the overall economic growth. SMEs grew at an average annual rate of 7.1% versus 4.9% growth for the overall economy (SMECORP 2015).

To date, no study has investigated the possibility of the curvilinear interconnectedness among TM, KM and the financial and as well as the innovation performance of SMEs. Due to the limited available resources and the high level of liability faced by these smaller organisations, their performance may be reduced at elevated levels of TM and KM implementation. The condition may lead to curvilinear relationships among TM, KM and performance. In addition, this PhD research also tested the interaction effects of senior managements' perceived strategic importance of HR on the above-mentioned relationships. This moderating variable was suggested to be tested in the context of SMEs due to the optimal role played by senior management in steering the strategies in SMEs. This research purely utilised quantitative method in testing the proposed hypotheses which will be explained in Chapter 3 of this thesis. The remainder of the thesis entails six chapters. Chapter 2 presents a comprehensive literature review, while Chapter 3 and Chapter 4 focuses on the conceptual framework and description of the methodology, respectively. The empirical findings will be presented in Chapter 5 and Chapter 6. This thesis ends with the discussion and conclusion in Chapter 7.

Chapter 2 LITERATURE REVIEW

Chapter 2 aims to provide a critical literature review concerning talent management (TM) and knowledge management (KM) to study and understand how these two constructs are associated with organisational performance. The following is the diagram that explains the literature review process.
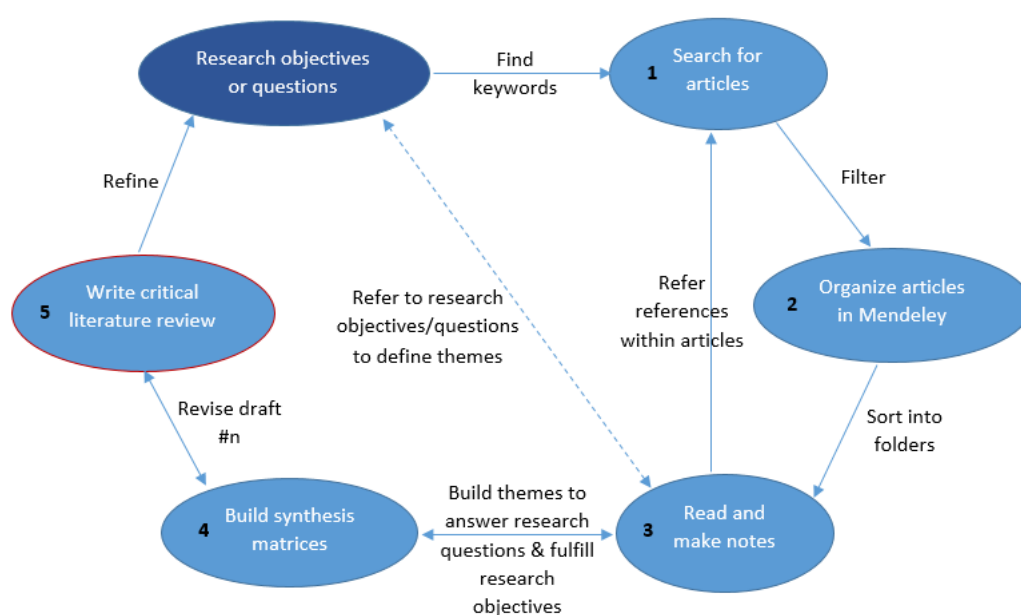
Figure 2.1 Literature review research process using Mendeley

The literature review process started with the search for articles based on the research objectives and research questions of this PhD research. Initially, the first step involved gathering articles were based on specific keywords such as 'human resource management AND performance', 'talent management AND performance', 'knowledge AND performance' to explore these three relationships. Other keywords that were relevant during the literature review process are: SMEs, 'human resource management

AND SMEs', 'talent management AND SMEs', and 'knowledge management AND SMEs'.

Next, the second step involved selecting the articles. The selected articles were managed using the Mendeley software. With this software, the current possible relationship was narrowed down. A thorough search exploring the relationship between HRM and performance relationship (See Appendix 2 for the summary of the key literature) led to the urgency to test the relationship between TM and KM and their effects on performance as the literature review seemed to suggest the possibility of non-linear relationships which was found to be supported by the too-much-of-a-good-thing (TMGT) effect (Pierce & Aguinis 2013). As this particular PhD study focused on TM and KM in the context of Malaysian SMEs, this context-specific research design suggested the possibility of context-specific inflection point leading to curvilinear instead of linear association between TM and KM and their effects on organisational performance.

The third step was equally important. It involved reading all the articles and making notes using Mendeley. Themes that emerged at this stage were used to build the synthesis matrices, which was the fourth step. These synthesis matrices (see Appendix 2) was found to be very useful for a critical literature review during the writing process, that is, the fifth step. Lastly, from the review, more specific research objectives and questions emerged which filled the current gap in the literature.

This chapter also compares the emergence of human resource architecture and TM architecture exploring the relevant theories in support of the proposed association between TM and KM and their effects on performance and how the supporting theories

that would explain these associations. After that, the intended effects and outcomes of talent and knowledge management are elaborated using previous empirical evidence. Scholarly contributions that explore the relationships between TM/KM – performance are compared and contrasted, taking into consideration Collings's (2014) view that the linkages between TM and organisational performance still remain unclear. Lastly, examples of TM and KM research in Malaysia are presented in order to gain a greater appreciation of the current developments in TM and KM research in the context of an emerging economy.

2.1 Relevant Theories

This review discusses existing research on the resource-based view theory (RBT), tracing the RBT transition from "view" into a "theory" in the last 20 years (Barney et al. 2011). Particular emphasis is placed on the integration of human capital theory with RBT in the strategic human capital resources perspective, as introduced by (Ployhart et al. 2014). Although RBT was the main theoretical framework for developing the research hypotheses in this thesis, a number of other theoretical contributions were also reviewed. These included the knowledge-based view theory, Penrose theory of growth, resources orchestration theory, attention-based view theory, upper echelons theory, and international human resource management theory.

Resource-based View Theory

The resource-based view theory (RBT) has emerged as one of several important explanations of organisational performance in the field of strategic management. The resource-based view of the firm was introduced by Barney (1991). Since then, resources and capabilities have been found to be important for understanding the sources of sustained competitive advantage. The most important contribution of the RBT is the

emphasis on the characteristics of resources that could contribute to sustainable competitive advantages.

In order for resources and capabilities to be able to contribute to sustainable competitive advantage, they must have the characteristics of being Valuable (V), Rare (R), Inimitable (I), and Non-substitutable (N), henceforth the VRIN framework. The RBT logic has largely influenced theoretical and empirical works in other non-strategic management disciplines including HRM (Wright et al. 1994), management (Priem & Butler 2001), marketing (Srivastava et al. 2001), international business (Peng 2001), and economics (Lockett & Thompson 2001). The historical development and current debate on the RBT are elaborated in the following section.

The Evolution of Resource-based View to Resource-Based Theory

Although earlier works have identified organisational resources as important, the first resource-based publication in the field of strategic management identifying it as such was a publication by Wernerfelt (1984). His publication contributed to the development of the Resource-Based View (RBV) theory from the different prism of strategic options. One of his primary contributions was an attempt to view organisations in terms of their resources rather than in terms of their products. It was suggested that analysing companies from the perspective of resources would contribute to better strategic decisions about diversification, mergers, and acquisitions. Wernerfelt's study has provided insights into how resources in general could contribute to organisational success. The RBV of the firm established that resources and capabilities would be important for understanding the sources of sustained competitive advantage for organisations. All assets, capabilities, organisational process, information and

knowledge are considered as organisational resources. However, to achieve a sustainable competitive advantage, all resources must have all these four attributes, namely, valuable, rare, imperfectly imitable, and non-substitutable (Barney 1991; Barney 1995). This appears to have marked a shift from the introduction phase to the growth phase of RBV of the firm theory.

Barney & Wright (1998) have analysed the role of human resource in gaining competitive advantage using the suggested resources characteristics for sustainable competitive advantage. According to Barney, to achieve sustainable competitive advantages, the human resources must have the valuable, rare, inimitability and non-substitutable (VRIN) characteristics. The underlying role of HR in the organisation's competitive advantage using RBT theory only contributes to temporary competitive advantages (Barney 1991; Wernerfelt 1984). The evaluation using the VRIN framework found that not all aspects of human resources could be developed as a source of sustainable competitive advantages. Aspects of HR that do not provide value can only be a source of competitive disadvantage. These resources are still valuable for the organisations, but they do not contribute to the achievement of sustainable competitive advantage. Temporary competitive advantage stems from resources that provide value and are rare but can be easily imitated by the competitors, resulting in competitive parity. However, aspects of human resources that are valuable, rare, and not easily imitated, can be sources of sustained competitive advantage, but only if the company is very well managed and organised to capitalise on these human resources.

Wright et al. (1994) disagree with the implications of the potential for HR practices to constitute a source of sustainable competitive advantage, as suggested by Barney (1991). Wright et al. (1994) distinguish between human resources (i.e., the

human capital pool) and HR practices. When the VRIN framework is applied, they argued the HR practices could not form the basis for sustainable competitive advantage as competitors could easily copy individual HR practice. In order to achieve sustainable competitive advantage, the human capital pool must be unique and have high level of knowledge, skills and abilities. This point of view is well accepted within the current debate on strategic human resource management (SHRM) (Boxall & Purcell 2000; Boxall 1996; Wright & McMahan 1992; Wright & Snell 1998). These strands of the literature typically use RBV as the backdrop and seek to frame HRM questions into the RBV framework.

Fitting HR practices to the organisation's strategy (Boxall 1996) make it almost natural to seek how HRM can be incorporated within the RBV framework. Based on the RBV/SHRM paradigm, Boxall (1996: 67) presents a more comprehensive model of SHRM on one major task of organisations to create a talented and committed workforce that lead to human capital advantage. He refers to the potential to capture a stock of exceptional human talent "latent with productive possibilities". Boxall (1998) expands upon this basic model to present a more comprehensive model of SHRM. He argues that one major task of organisations is the management of mutuality (i.e., alignment of interests) to create a talented and committed workforce. It is the successful accomplishment of this task that results in a human capital advantage. It emerges, therefore, that the RBV of competitive advantage differs from the traditional strategy paradigm associated with the writings of Ricardo (1817), Schumpeter (1934) and Penrose (1959). The RBV of competitive advantage is organisational-focused, whereas the traditional strategic analysis paradigm has an industry-environment focus (Wright & McMahan 1992).

Within the field of human resource management (HRM), the RBV has made important contributions in the rapidly growing area of SHRM (Wright et al. 2001). With the wider acceptance of internal resources as sources of competitive advantage, RBV advocates emphasise the strategic importance of people or human resources for organisational success. Human resource is defined as "the pool of human capital under the organisation's control in a direct employment relationship" (Wright et al. 1994: 304). This has led to an increase in scholarly interest in leveraging RBV to explore the unit-level human capital resource in the SHRM literature. This perspective draws on RBV to posit an organisational-level human capital resource that can be a source of sustainable competitive advantage (Barney & Wright 1998; Kraaijenbrink 2011).

Twenty-five years after its introduction in the literature, the RBV reached its maturity. First, scholars are increasingly using the term resource-based 'theory' (RBT) instead of resource-based 'view', having evolved to the point where it can be considered as a theory instead of a view. Second, RBT has given prominent spin-off perspectives to several theories, most notably the knowledge-based view (R. Grant 1996), the natural resource-based view (Hart 1995), and dynamic capabilities (Teece et al. 1997). Third, RBT's insights have been integrated with those of other fields such as international business (Peng 2001), economics (Lockett & Thompson 2001) and entrepreneurship (Alvarez & Busenitz 2001).

Few articles contribute to the current discussion on RBT. Some of them are meta-analyses of the empirical evidence related to the RBT's core tenets (Crook et al. 2008), critical examination of the methodology surrounding RBT (Armstrong & Shimizu 2007), a review of critiques of the RBT (Kraaijenbrink et al. 2010) and a comparison between RBT's VRIN resources and Penrose theory of growth in

understanding firm's growth (Nason & Wiklund 2015). These developments – the transition from RBV to RBT suggest that RBT has reached maturity as a theory.

This thesis uses RBT as a theoretical framework by collating a rather fragmented resource-based literature into a comprehensive and empirically testable theoretical framework. Drawing on arguments by Penrose (1959), Wernerfelt (1984), Barney's VRIN/O framework as summarised in Figure 2.1 is allowing for resource-based competitive advantage. However, there are few critiques on Barney's (1991) noting on the interpretation of RBT on 'the processes through which particular resources provide competitive advantage remain a black box' (Barney & Arikan 2001:33).

Few scholars have recently questioned the predictive power of RBT without managerial involvement (Mahoney 1995; Barney & Arikan 2001; Priem & Butler 2001; Sirmon et al. 2007). Building in part of Mahoney & Pandian (1992), Barney argued that in addition to simply possessing VRIN resources, an organisation also need to be organised in such a manner that it could exploit the full potential of those resources if it was to attain competitive advantage (Barney 1997: 160; Barney & Wright 1998). Organisations' competitive advantage potential depends not just on the value, rareness and inimitability of its resources and capabilities but also the need for organisations to be organised to exploit its resources and capabilities (Barney 1995). This leads to the extension of RBT in explicitly addressing the role of managers' action to effectively 'organise' firms' resources (Sirmon et al. 2011).

Sirmon & Hitt (2003:341) in their study which examined resource management in family firms have conclude that, "resources alone are not likely to produce a

sustainable competitive advantage. Rather, the resources must be managed appropriately to produce value. Additionally, effective integration and deployment of resource bundles increases the difficulty of competitors in imitating or developing effective substitutes for these resource bundles". This perspective is further elaborated through resource orchestration theory that particularly addresses how managers' play the role in effectively structuring, bundling, and leveraging firm resources. Further discussion on the link between RBT and other possible theory are discussed in the following sub-section.
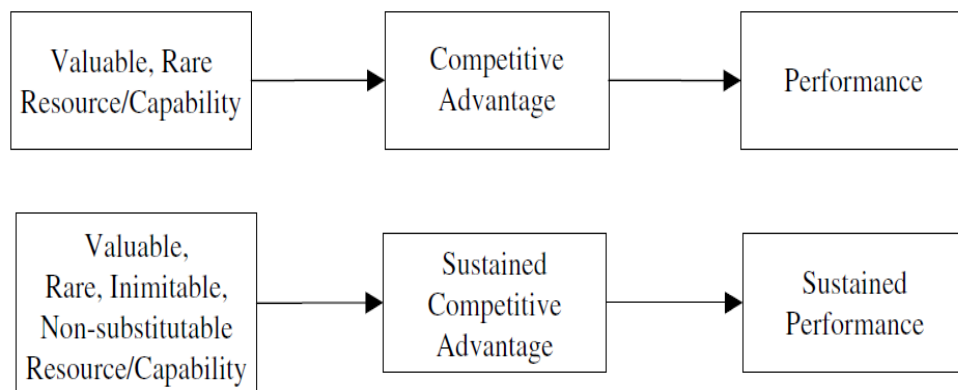
Figure 2.1: Barney's (1991) Conceptual Model.

RBT and Penrosean Growth Theory

It has been argued that the Penrosean Growth theory provides a better argument in explaining firm growth. Firm growth, a fundamental topic in management research, is broadly defined as the increase in a firm's size from one point in time to another (Penrose 1959/1995). Many scholars believe that resource-based approaches have come to dominate theoretical frameworks in firm growth. However, a recent bibliometric analysis of over 400 growth papers identified Penrose's (1959/1999) book 'The Theory

of the Growth of the Firm' as the most cited reference in the growth literature, followed closely by Barney's (1991) article.

Barney developed the relationship between valuable, rare, inimitable, and non-substitutable (VRIN) resources and competitive advantage, whereas Penrose focused on, among other things, the combination of versatile resources to create growth. Both authors view the firm as a collection of resources and see resource exploitation as useful as developing products, services and strategies (Barney 1991; Penrose 1995; Wernerfelt 1984). According to RBT, VRIN resources create a sustainable competitive advantage because they allow firms to implement efficient strategies and isolating mechanisms to prevent imitation of these strategies (Barney, 1991; Peteraf, 1993). In contrast, Penrose (1959/1995) emphasises versatility in terms of the range of services that resources can provide to entrepreneurial managers.

The latest assessment on RBT and Penrosean theory of growth by Nason & Wiklund (2015) suggests that these two theories need to be aligned in order to provide a better explanation of firm growth. Authors have developed theoretical arguments on how Barney's VRIN approach to resources translates into growth. According to RBT, organisations that possess bundles of resources that are VRIN enjoy sustainable competitive advantage and, consequently superior firm performance (Barney 1991; Wernerfelt 1984). Recent studies assessing RBT are largely supportive of its predictive power on performance. A meta-analysis by Crook et al. (2008) finds a substantial correlation ($r = .29$) between VRIN resources and performance. This portrays a strong positive effect of VRIN resources on performance. Growth and competitive advantage are generally considered concomitant in the RBT literature.

However, Nason & Wiklund (2015) found interesting results looking at these two hypotheses; (1) VRIN resources have a stronger impact on growth than non-VRIN resources, (2) versatile resources (from Penrosean theory of growth) have a stronger impact on growth than non-versatile resources. The meta-analysis specifically tests the link between resources and performance via these two hypotheses. The results shed an interesting insight on the VRIN – growth relationship, implying that valuable resources have a positive influence on growth, but inimitable resources have a negative influence. Nason & Wiklund (2015) further argue that growth provides a particularly salient performance outcome for testing the competitive advantage prediction of RBT. Their meta-analytical findings reject the RBT notion and support Penrose's idea that growth can be fostered by resources that can be easily applied to alternative uses within and between firms. They find that versatile resources have a stronger effect on growth than non-versatile resources, although they find no support for the notion that VRIN resources are linked to higher level of growth than non-versatile resources. In summary, their findings support the potential of positive effect; from valuable and rare resources characteristics and negative effect; from inimitability and non-substitutable characteristics of resources and capabilities. Hence their findings support the potential VRIN resources – organisational performance curvilinear relationship.

RBT and Resource Orchestration

The relationship between resources and organisational performance is largely supported empirically (Crook et al. 2008). However, this relationship needs managerial involvement in structuring and bundling these resources into capabilities, and leveraging the capabilities to realise competitive advantage. Sirmon et al. (2011) contribute to the RBT literature by focusing on what they term resource orchestration,

which explicitly addresses the role of managers' actions in effectively structuring, bundling, and leveraging organisational resources. The authors compare and integrate two related frameworks (resource management and asset orchestration) to obtain a more precise understanding of managers' roles within RBT. They identify three areas where the concept of resource orchestration can be used to extend RBT: breadth (resource orchestration across the scope of the firm), life cycle (resource orchestration at various stages of firm maturity), and depth (resource orchestration across levels of the firm). Sirmon et al. (2011) explore resource orchestration processes during the start-up, growth, maturity, and decline stages of firm development.

Studies to date have not explicitly compared the different processes of resource and capability development in these different ownership contexts, yet these processes appear likely to vary across contexts. In RBT, the discussion mainly focuses on "generic characteristics of rent-generating resources". However, the question of "how" resources are used to create competitive advantage is lacking. Though (Barney & Arikan 2001: 174) have stated that "resource-based theory has a very simple view about how resources are connected to the strategies that a firm pursues", the explanation in answering that question is hanging. It shows the need for more research and empirical evidence in answering this question. Collectively, research suggests that possessing resources alone does not guarantee the development of competitive advantage; instead, resources must be accumulated, bundled, and leveraged, meaning that the full value of resources for creating competitive advantages is realised only when resources are managed effectively (Sirmon et al. 2007).

A small but growing stream of work emerging from the RBT and dynamic capabilities' literatures focuses attention on managers' resource-focused actions.

Sirmon et al.'s (2007) resource management framework explicitly addresses process-oriented managerial actions that are involved in achieving competitive advantage as well as creating value. The Sirmon et al. (2007) framework as shown in Figure 2.2, suggests that resource management includes structuring the portfolio of resources (i.e., acquiring, accumulating, and divesting), bundling resources to build capabilities (i.e., stabilising, enriching, and pioneering), and leveraging capabilities in the marketplace (i.e., mobilising, coordinating, and deploying) to create value. While each process and its attendant sub-processes are important, they argue and, perhaps more importantly, empirical research shows that the synchronisation of these processes is important to create value (Sirmon et al. 2008). Competitive advantages are realised only when resources are managed effectively. Concurrent to the development of the resource management framework, another group of scholars developed a related logic focused on "asset orchestration" (Helfat et al. 2007). Asset orchestration, derived from the research on dynamic capabilities (Adner & Helfat, 2003), consists of two primary dimensions—search/selection and configuration/deployment.

The first dimension needs senior management to identify assets, make investments and design the structure whilst the second dimension requires senior management to coordinate, provide vision and nurture innovation on those assets. Here again, recent empirical work demonstrates that the logic of this framework is promising (Sirmon & Hitt, 2009). Empirical evidence on assets orchestration is relatively sparse compared to evidence on resource management. Stage of maturity (age of the company) is believed to influence managers' decision and action in managing resources. "Breadth", "depth" and "life cycle" affect how managers' manage their organisations resources to maximise the likelihood of achieving a competitive advantage. To

implement corporate and business level strategies that earn positive returns, managers must orchestrate the organisational assets and configure the capabilities to achieve competitive advantages.
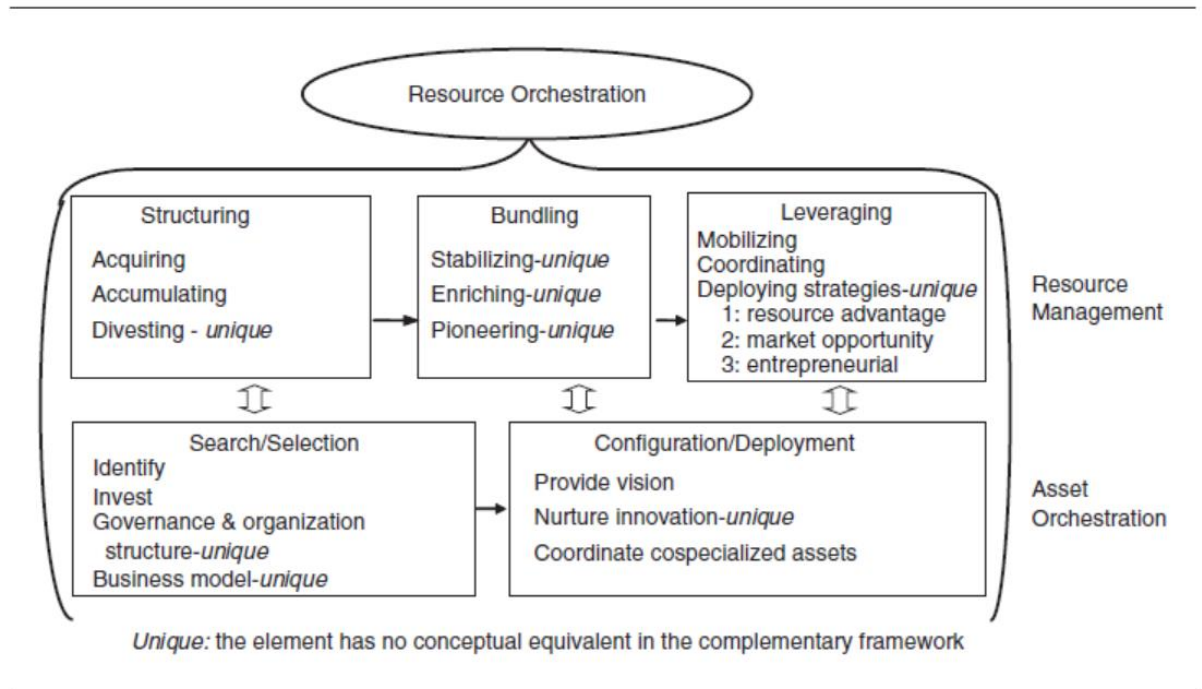
Figure 2.2: Resource Management and Asset Orchestration Frameworks Comparison.

These two constructs in resource orchestration theory support the interaction effects of senior managements' perceived strategic importance of HR on TM/KM – performance relationship in this study. The performance variable is separated into two categories (i.e. financial and innovation performance) to test senior management's assets orchestration capability through their perception on the strategic importance of HR moderating variables on TM/KM – innovation performance relationship.

RBT and Strategic Talent- and Knowledge Management

Knowledge-based resources is defined as "valuable resources that are protected from imitation by knowledge barriers" (Miller & Shamsie 1996: 522). Knowledge-based

resources relates to knowledge, skills, and abilities that are creative and collaborative. These resources are inimitable because they involve unique talent and knowledge that are hardly to be imitated by competitors because they are subtle and hard to understand. Reason being, it may be possible for competitors to develop similar knowledge and talent but the possibility for competitors to imitate usually take time and normally the company has further develop their skills and capabilities and learn to use them in different ways. Therefore, talent and knowledge are two types of resources that highly inimitable and non-substitutable.

It is interesting to find that Nason & Wiklund (2015) test the relationship of resources with VRIN characteristics and growth following Penrose theory of growth. Their analysis of the individual characteristics of 'value' and 'inimitability' sheds further insight into the VRIN-growth relationship. Valuable resources have a positive influence on growth but inimitable resources have a negative influence on growth. Their results reveal that VRIN resource characteristics can have negative effects on the same performance outcome due to stronger negative effects. The negative effect of inimitability and non-substitutable resources is particularly interesting when considered alongside the positive effect of the other characteristics. Hence, VRIN-growth curvilinear relationship is likely as talent and knowledge are two types of resources with a high level of inimitable and non-substitutable characteristics.

The resource management framework by Sirmon et al. (2007) explains and supports the relationship between TM/KM and financial performance, whilst the asset orchestration framework Helfat (2007) justifies the relationship between TM/KM and innovation performance. These two frameworks are complementary and known as resource orchestration. They help to add value in the development of RBT by extending

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the logic and ideas of resource orchestration in gaining sustainable competitive advantages. They added the important roles of managers (i.e. senior management in this study) in influencing resources/assets management – performance relationship.

To date RBT is the dominant theoretical framework applied in TM and KM literature if its related to performance and growth of business organisations (Gallardo-Gallardo et al. 2015). In most of the studies, rather than referring talent as "human resource" or "people" articles written within the RBT framework equate talent to "human capital" that is both highly valuable and unique (Lepak & Snell 1999). Recently, RBT has begun to be used as a theoretical framework to examine the relationship between human resource capital and organisational performance. For example, Wright et al. (1995) positive relationships among strategy, human resources, and performance among National Collegiate Athletic Association (NCAA) basketball teams. In addition, Lopez-Cabrales et al. (2006) utilise RBT framework in their study looking at the value and uniqueness of high-potential talents and organisational capabilities in a sample of Spanish large organisations.

The central tenet of the RBT on TM/KM is that people can be a source of sustainable competitive advantage and operationalised as organisational performance. Substantial analysis has focused on the association between TM and enhance performance (Boudreau & Ramstad 2007; P. Capelli 2008; Collings & Mellahi 2009; Huselid et al. 2005) and also KM and performance (Zack et al. 2009; Jayasingam et al. 2012). According to Gallardo-Gallardo et al. (2015) in their latest review in understanding TM as a phenomenon, organisational performance has become the most potential outcome for TM in most of the articles in the database even though only small

number of them empirically examined the relationship between TM and performance (Joyce & Slocum 2012).

Furthermore, knowledge management is suggested as one of the alternative theoretical frameworks that is less prevalent, but nonetheless offers distinctive points of view within the TM literature. In one of the latest literature reviews on TM by Gallardo-Gallardo et al. (2015), 10 out of 139 articles in the TM bibliometric and content analysis were coded as having a KM framework, all of which had KM as a primary theoretical framework. It has been noted that TM articles with KM framework are mostly assessing organisational level KM implementation that can maximise innovation performance and capabilities. These literature also assess how knowledge-intensive organisations can fully exploit their HR in order to elevate performance. They also emphasised the management of strategic resources (i.e. talent and knowledge) through managing the human resources (i.e. people) in the organisations.

This is further supported through the relation between human capital and RBT in SHRM literature (Barney & Wright 1998; Boxall 1996; Boxall & Purcell 2000). Most of these literatures use RBT as the backdrop and frame HRM questions into the RBT framework. Lately, strategic human capital has emerged as an area of interest in both strategy and HRM literatures (Wright et al. 2013). For example, Carmeli & Schaubroeck (2005) look at the influence of top managers who perceive human resource capital as providing distinctive value with VRIN characteristics. They found positive relationship between HR capital and organisational performance and suggests organisations to ensure that newly acquired or developed HR capital to be fully utilised in a manner that competitors could not imitate.

In addition, Shaw et al. (2013) present interesting findings reversing the focus on human capital accumulations in the RBT literature. They have found a curvilinear relationship between human capital losses (through voluntary turnover rates) and performance. In addition, at high level of HRM investment, the human capital losses – performance relationship takes the form of an attenuated negative relationship. An interesting theoretical contribution from the fore-mention findings in Shaw et al. (2013: 574), is that, "…as depletion increases – as voluntary turnover rates move from low to moderate levels – the organization will lose its inimitable source of advantage, and performance should decline precipitously". This empirical evidence proves the negative effects of inimitable and non-substitutable resource characteristics on performance.

RBT tends to be used in SHRM research to examine the relationship between human resource practices and organisational performance (i.e. Combs et al. 2006; Delery & Doty 1996; Huselid 1995).Recently, the RBT has begun to be used as a theoretical framework to examine the relationship between human resource capital and organisational performance (Carmeli & Schaubroeck 2005b; Lopez-Cabrales et al. 2006; Takeuchi et al. 2007; Nyberg & Wright 2015; Ployhart et al. 2014). Referring to the above-mention articles, I test the relationship of human resource capital (i.e. TM and KM) and organisational performance relationship.

This study would extend existing theory of TM and KM by offering a rationale for why the relationship between TM and organisational performance in medium-sized enterprises is likely to be a curvilinear one. The following section further elaborates and explains the emergence of this new perspective. While low to moderate levels of TM and KM may enhance performance, it is argued that the combination of the resource constraints faced by SMEs may limit these performance effects at elevated levels of

TM/KM and may even turn to negative effects. This study would represent a starting point in examining potential curvilinearity in smaller organisation context and in establishing whether diminishing returns to performance may reach harmful, below zero, levels under certain conditions.

Strategic Human Capital / Human Capital Resources

Human capital was first defined as the innate or acquired individual attributes that would have productive value in workplaces; in other words, it is something that could increase the value of the workforce (Becker 1964). After 50 years of human capital theory, Ployhart et al. (2014) declared human capital to be dead and introduced the term human capital resources. This transformation of Becker's original idea has continued and in recent years researchers who are interested in a more strategic or organisational perspectives have begun considering the effects of aggregate human capital. According to Ployhart et al. (2009), human capital and RBT predict that it is the unit aggregate of individual knowledge, skills, and abilities, that lead to unit performance.

The emergence of this new strategic human capital or also known as human capital resources theory integrates human capital theory with RBT for sustainable competitive advantage. With 20 years of RBT development and 50 years of human capital theory; strategic human capital resources is define as, "Individual or unit-level capacities based on individual KSAOs that are accessible for unit-relevant competitive advantage" (Ployhart et al. 2014: 376). The term unit is used in the definition to signify collective levels of employees like in groups, departments or organisations.

Human capital theory emphasises that human capital—the composition of employee knowledge, skills, abilities, and others (KSAOs) —is a central driver of organisational performance when the return on investment in human capital exceeds

labour costs (Becker, 1964; Lepak & Snell, 1999; Ployhart & Molitemo, 2011). Researchers argue that human capital, especially high quality and/or organisation-specific human capital, has the potential to serve as a source of competitive advantage (Wright et al. 1994; Ployhart et al. 2014) and these talented employees are relevant for sustainable competitive advantage as portrayed in Figure 2.3.
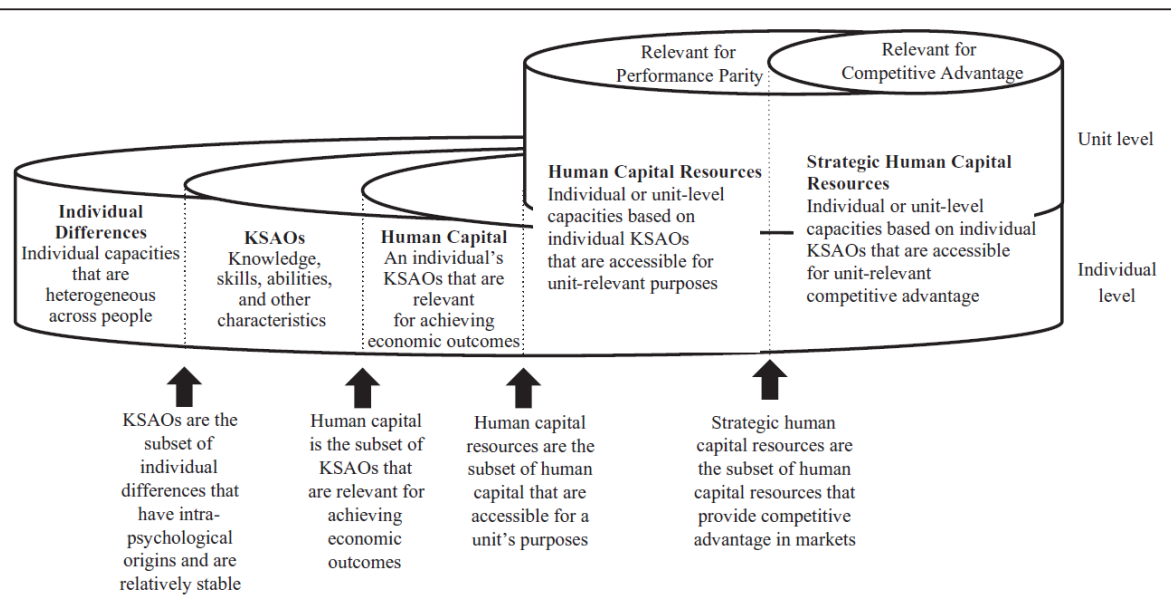
Figure 2.3: Distinctions Within Human Capital Construct.

Due to the aforementioned arguments, this study would conceptualise talent and knowledge as two important strategic human capital resources that would have the unit level capacity to positively influence organisational performance. Hence, talented and knowledgeable employees would be considered as the valuable resources that could contribute to increase organisational performance if managed effectively through strategic TM and KM. Organisations may use TM practices and KM strategy to create and maintain valuable human capital resources, including both generic and organisation-specific human capital, which in turns drives high financial and innovation

performance (Becker & Huselid, 1998; Delery & Shaw, 2001; Ployhart & Moliterno, 2011; Snell & Dean, 1992).

2.2   Other Organisational Theories Relevant to the Study

Based on an earlier review of the TM literature (Collings & Mellahi 2009; Dries 2013b; Lewis & Heckman 2006; Nijs et al. 2014; M Thunnissen et al. 2013), Gallardo-Gallardo et al. (2015) had listed potential theoretical frameworks for TM. Besides RBT, this study would also elaborate on other organisational theories that would be significant in the context of talent and knowledge management. These theories include the knowledge-based view, attention-based view, resource orchestration theory, upper echelons perspective, and international human resource management (IHRM).

Knowledge-based View

The emergence of knowledge base view (KBV) has been the emerging trend in the field of strategic human resource management. The KBV consists of theories that attempt to explain competitive advantage and organisation's performance in terms of the organisation's knowledge asset endowment. The predecessor of the KBV, the RBT (J Barney, 1991) proposed that it is costly to imitate resources such as knowledge because it constitutes sources of competitive advantage. The KBV theory complements RBT by providing a better perspective in gaining sustainable competitive advantage. However, a number of contributions have shown that the problematic relationship between the individual and the organisation in firm's knowledge creation warrants attention.

Although the concept of knowledge is central to both the human capital and KBV of the organisation, it is used quite differently and for different purpose. For example, in the individual level of analysis, in human capital, the individual has the

prominent role. In empirical terms, both independent and dependent variables can be at individual level. In the KBV, it is the nature of the organisation and its knowledge assets that are of interest and the specific knowledge of the individuals (micro foundations) are rarely taken into account. This view aims to explain organisation-level performance rather than individual-level performance, through organisation-level investment in knowledge. In the KBV, the individual is mainly a means to increase organisation-level knowledge; in the human capital theory, the organisation is mainly a means to increase individual human capital. Thus, there is an opportunity to investigate what opportunities a human capital perspective can provide for the KBV theory.

Attention-based View

The ABV theory model outlines how intentional processing at the individual, social cognitive, and organisational levels interact to shape organisational behaviour. The fundamental components of the model are; (1) the environment of decision; (2) the repertoire of issues and answers; (3) procedural and communication channels; (4) the firm's attention structures; (5) decision-makers; and (6) organisational moves. Figure 2.4 below illustrates the situated attention and firm behaviour in ABV theory. The discussion of attention-based view (ABV) started from Sirmon (1947) dual emphasis on structure and cognition to emphasise both how routines and bounded rationality shape attention.
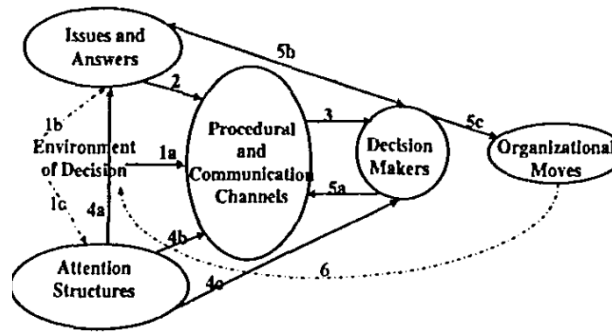
Figure 2.4: Model of Situated Attention and Firm Behaviour.

ABV focuses on organisational attention; the socially structured pattern of attention by decision-makers within an organisation (Ocasio 1997). It explains how the focus of attention in decision-making depends on the particular context or situation that the senior management or top management teams operate. Hence, how they attend to it depends on the structural distribution of attention in the organisation. Basically, senior management or senior management's decisions are based on what issues and answers they focus their attention on or also known as "focus attention". It also depends on the particular context or situation they find themselves. This is known as "situated attention".

Furthermore, ABV also depends on how the organisation structured the distribution of attention on available resources in the organisations and social relationships. This "structural distribution of attention" relates to the strategic management of the company. It links individual information processing behaviour to the organisational structure through the concepts of procedural and communication channel and attention structure. ABV argues that a focus in the structuring of organisational attention to explain organisational behaviour is important in understanding the strategic choice or decision. ABV views organisations as systems of structurally distributed attention in which the cognition and action of individuals are

derived from the specific organisational context and in situations that individual decision makers find themselves.

The attention-based view (Ocasio 1997) suggests that managerial attention is the most precious resource inside the organisation and that the decision to allocate attention to particular activities is the key factor in explaining the financial performance and ability to introduce new products and services. According to this theory, decision-makers need to "concentrate their energy, effort and mindfulness on a limited issues in order to achieve sustainable competitive advantage" (Ocasio 1997:203).

Resource Orchestration Theory

Resource orchestration theory addresses an underdeveloped aspect of RBT: the manager's role in effectively developing and leveraging resources. The performance effects of strategic resources (Crook et al. 2008) highlight the importance to understand how managers effectively utilise these resources. This study utilise the logic of dynamic managerial capabilities (Teece et al. 1997; Sirmon & Hitt 2009), asset orchestration (Helfat 2007; Sirmon et al. 2011) and related work on resource management theory in emphasising the role of managers and their decision in response of Barney and Arikan's call that 'more work is needed before the full range of strategy implementation issues, not included in the [1991] paper are integrated with a resource-based theory of competitive advantage' (2001: 175). As defined by Helfat, asset orchestration begins with a clear commitment to the development and utilisation of the assets (Helfat 2007; Sirmon et al. 2011) and talent and knowledge are two intangible assets that fits Barney's (1991)VRIN characteristics.

Upper Echelons Perspective

Upper echelons perspective states that managerial background characteristics predict organisational outcomes, strategic choices, and performance levels. Organisational outcomes like performance or competitive advantage are reflections of the values and cognitive bases of powerful actors in the organisations. In this case, the powerful actor is the senior management of the company. One of the advantage of this perspective is it may offer substantially greater power to predict organisational outcomes. The upper echelon perspective of organisations suggests that its characteristics are in part reflection of the situation that the organisation faces. In addition, the effect of the environment and strategy on executive selection is worth noting.

The main argument of this perspective is the portrayal of upper echelon characteristics as determinants of strategic choices on organisational performance (Hambrick & Mason 1984). 25 years after, Hambrick (2007) updated this perspective by adding two important moderators in this perspective which is managerial discretion and executive jobs demand. These two constructs affect the theory's predictive strength. This theory offers good prediction of organisational outcomes in direct proportion to how much managerial discretion exists. If a great deal of discretion is present, then strategy and performance will reflect those managerial characteristics.

International Human Resource Management (IHRM)

International Human Resource Management (IHRM) is about using HRM practices in the global environment. The goal of IHRM is to helps multinational companies (MNCs) to achieve sustainable competitive advantage globally. This IHRM framework refers TM as 'global talent management' (GTM) (Tarique & Schuler 2010). Previous research related to GTM stress the assumption that TM is more important and more challenging

in MNCs due to the complexity and structure of the company. The role of GTM in enabling an organisation to remain competitive is increasingly recognised by scholars and practitioners (Stahl et al. 2012; Farndale et al. 2014; Preece et al. 2011; Preece et al. 2013). It is typically promoted as an HR functional activity that enables sustainable competitive advantage (Lewis & Heckman 2006).

The critical components of strategic success are the people, intellectual capital and talent. Hence, the pivotal talent pools in global labour market, enable companies to remain competitive (Boudreau & Ramstad 2005b). There are two main reasons why the issue of GTM has become an important area for research. The first reason is the "supply factors". A number of factors have increased the level of international mobility and opportunity for new forms for mobility. The second reason is "demand factors". This factor is an increase in demand for specialised talent to support globalisation. The growing importance of the management of talent on a global scale, both the supply of talent (through changing patterns of migration and internationalisation of certain labour markets) and the demand for talent are expected to continue to increase. However, the demand criteria do not appear to match the supply characteristics (Farndale et al. 2010). The demand and supply of global talent are the main issues in IHRM.

Having IHRM as a (primary or secondary) theoretical framework typically coincides with having an RBT and/or an institutionalist framework. McDonnell et al. (2010), for example, draw on the HR architecture model developed by Lepak and Snell (1999), exploring the extent of GTM engagement. Tarique & Schuler (2010) discuss how both exogenous and endogenous drivers—terms they borrow from institutional theory—such as market position, headquarter international orientation, organisational

structure, and workforce capability, impact on GTM effectiveness in terms of attracting, developing, and retaining talent in MNCs.

According to Gallardo-Gallardo et al. (2015), the country representation section within the TM literature, although much of the research comes from Anglo-Saxon countries (i.e., the US, the UK, and Australia), especially in recent years we are seeing a strong increase of TM research coming from Europe, India, and China. The problem settings and research questions of TM articles originating from different geographical regions depend strongly on locally faced TM challenges, encouraging a comparative perspective on GTM (Farndale et al. 2010). TM research in India tends to focus on the attraction and retention of talented information technology (IT) specialists (e.g., Kong et al. 2012) − a sector in which India holds 50% of the global market. TM research in China focuses on the country's structural shortage of skilled leadership talent, TM issues created by government regulations, and the adaptation of Western HRM practices to Chinese culture (e.g., Iles, Chuai, et al. 2010).

Theoretical Gaps

In the light of the discussion above, the present study aimed to fill three main gaps in the literature. First, the main theoretical gap is on the ability to make meaningful individual-level contributions to organisation-level outcomes using strategic human capital theory. In strategic human capital, the unit-level resource is unique and inimitable. Talent and knowledge are two types of strategic human capital resources that are highly inimitable. Even though Barney's (1991) VRIN framework supports the positive relationship between resources with those characteristics and performance and growth, recent assessment on RBT found that inimitability resources have a negative influence on growth. VRIN resource characteristics can have opposing effects on the

same performance outcome (Nason & Wiklund 2015), which support the possibility of TM/KM - performance curvilinear relationship.

At the micro level human capital, the focus is on specific individual-level human capital characteristics. In this study, the individuals in the organisations would be the human capital of an organisation. Individuals with more education, skills and abilities have more value in "human capital" than an individual with less education. These individuals, endowed with valuable human capital, are those managed using the specific TM practices to enhance organisational performance. These tighten the theoretical connection between micro-level behaviour and organisational-level knowledge outcomes. For example, Grigoriou & Rothaermel (2013) discussed how individuals who are both strong knowledge producers and great collaborators enhance their organisation's innovative performance and they are described as "relational stars."

These "relational stars" defined by Grigoriou & Rothaermel (2013) apply to talented employees who can rely on their collaborative behaviour to not only identify more opportunities for knowledge recombination but also select the most promising ones, leading to knowledge of higher quality. In addition, they also empirically prove the role of relational stars (talented employees) as the origins of organisational-level innovative performance and link the micro-level factors to macro-level outcomes. Their findings have significant implications especially in terms of innovation. Certain talent or individuals exhibit collaborative behaviours that make them potentially valuable sources of organisational capabilities to generate more inventions and at the same time improve organisational performance.

Second, to date there is limited understanding on how TM and KM can support competitive advantage. The present study recognises human talent as a repository of potentially valuable knowledge – both tacit and explicit. TM practices like talent recruitment, training, performance management, succession planning is the effective management of organisational talent who own the key knowledge. KM and TM researchers have not theoretically established a link to specific KM necessary to ensure effective TM that can contribute to innovative and financial performance of the organisation. Especially in the context of smaller organisation like medium-sized enterprises (SMEs)

Third, this study would utilise strategic human capital theory (Ployhart et al. 2014) and extent RBT (Barney 1991; Barney 1995; Barney et al. 2011; Morris et al. 2016) by studying the influence of Senior management's perception on the strategic importance of HR on TM/KM–performance relationship. Theories such as resource orchestration theory (Sirmon et al. 2011), asset orchestration theory (Helfat 2007), and attention-based view (Ocasio 1997) support the interaction effects of Senior management perception on TM/KM – performance relationship. In the context of smaller organisation, previous empirical evidence highlights the possible curvilinear relationships of the aforementioned variables. Hence, one of the theoretical contributions in filling the gaps of this study would be by empirically testing a model utilising the fore-mentioned theories as an extension of RBT to maturity phase (Barney et al. 2011).

2.3   Why Talent and Knowledge?

"Talent" and "knowledge" are two subjective concepts that are very important as they are very much related to the management of people or human resources. It has

been long and widely asserted that people are the preeminent organisational resource and the key to achieving outstanding performance (Chadwick & Dabu 2009). To date, talent and knowledge management have emerged as important aspects in business organisation that make managers realise the potential for sustaining competitive advantages. Wright et al. (1994) provide a theoretical discussion of the circumstances under which human resources can be a source of sustained competitive advantage using RBT (Barney 1991; Barney 1995). However there are debates in the literature discussing the so-called 'black-box' linking HRM–organisational performance that further lead towards the debate on strategic human resource management theory (SHRM). This theory focuses on organisational performance rather than individual performance and the utilisation of strategy in building sustainable competitive advantage that in turn creates above-average financial performance (Becker & Huselid 2006).

Talent and knowledge are given special attention and are chosen for the purpose of this study because they would fit the definition of strategic resources that have the characteristics to contribute to sustainable competitive advantages. Barney (1991) suggests the following characteristics for resources to provide sustained competitive advantage: valuable (V), rare (R), inimitable (I), and non-substitutable (N). Talent and knowledge resources have these four characteristics and are highly inimitable (I). One interesting finding from the theoretical review is the negative effects of resources with high inimitability on growth/performance (Nason & Wiklund 2015).

Previous studies have linked TM and KM due to the integrated approach in managing these two variables. For example, Whelan & Carcary (2011) have suggested some new insights on how TM can benefit KM through 'smart talent management'.

They offer new insights on how the application of TM practices can advance KM. Five KM concerns have been suggested: (1) identifying key knowledge workers; (2) knowledge creation; (3) knowledge sharing; (4) developing knowledge competencies; and (5) knowledge retention. This integration is rooted from RBT when employees' knowledge, skills, and competencies are recognised as sources of competitive advantages.

Vaiman & Vance (2010) also link TM to KM by looking at 'talented people' as the key agents in the creation, acquisition, transference, and application of knowledge. It is interesting to note Collings (2010) review on 'Smart Talent Management: Building Knowledge Assets for Competitive Advantage' by Vance and Vaiman (2010). It was stated in his review that the authors of this book had made a strong case for potential expansion of the theoretical foundations of TM through KM lens. Collings further concluded in his review that TM was too important to be left to HRM alone and it would need a strategic approach to sustain competitive advantage.

In 1995, Barney introduced another characteristic to fully realise the potential for resources to sustain competitive advantage - organisation. A firm also must be organised to exploit its resources. Hence, organisation (O) is another characteristic if Barney's VRIO framework (Barney 1995). Thus, talent and knowledge should be exploited with the right level of attention as it can contribute to sustainable competitive advantage. Therefore, the management of talent and knowledge at organisational level have been the new field of discussion between academia and business practitioners. This is further supported by Gallardo-Gallardo et al. (2015) in stating KM as one of the alternative theoretical framework that offer distinctive points of view within TM literature. There have been increasing interest in the study on effects of human resource

and human resource management (HRM) on organisational performance (Delaney & Huselid 1996).

The discussion on the relationship between HRM and performance have been critically discussed in the works of Wright et al. (2005) and Wall & Wood (2005) rooted from Huselid and Becker's (2000) opinion on the lack of methodological rigour to demonstrate that the relationship is actually causal. These researchers have argued that many research designs that tested the relationship between HRM and performance had utilised a single data collection effort in their studies in which the same respondents would provide information for both assessment of their current HR practices and also that of their organisational performance. Wright et al. (2005) have found that the correlation of HR practices with past, concurrent, and future performance measures are both high and invariant, and controlling for past performance virtually eliminates the correlation of HR practices with future performance.

Nevertheless, Wall & Wood (2005: 432) have concluded that most authors established HR practices and performance effects in the 'labels' used to explain the HRM system. For example, 'performance enhancing' HRM practices, 'high performance work organisations' and 'high performance work system'. All these terms are reflecting the relationship between HR practices and performance. On a different note, Prowse & Prowse (2010) have critically reviewed the literature and evaluated the contribution of HRM in improving organisational performance. A comparison between US and UK studies on HRM and performance relationship emphasising the importance approaches to testing causality between HRM practices and performance. They have concluded that the majority of the quantitative studies in US and the UK use surveys and the studies are rarely longitudinal.

Theoretically, the relationship between HRM and performance is strongly supported by the HR architecture emphasising the value and the uniqueness of human capital as the core foundation of human resource architecture model where the focus is on the development of talent in enhancing the value of human capital that elevates organisational performance. Lepak & Snell (1999) have highlighted the direct impact of value on organisational performance through strategic benefits gain from skills relative to costs incurred. However, there are possibilities that expenses from training, staffing, compensation, and benefits may diminish the gain from enhancing the value of human capital. Sparrow & Makram (2015) have narrowed down this discussion by explaining the 'value' aspect of TM from RBT perspective and highlighting the value resides in the unique set of knowledge, capabilities, contributions, commitment, skills, competencies, and abilities possessed by the talented employees in the organisations. Valuable, rare, imitable, and non-substitutable talent enables organisations to implement value creating strategies and achieve a sustained competitive advantage.

The relationship between KM and organisational performance is also connected within the HRM – performance link from strategic human capital resources theory. This theory emphasises that human capital—the composition of employee knowledge, skills, abilities, and others (KSAOs) —is a central driver of organisational performance when the return on investment in human capital exceeds labour costs (Becker 1964; Lepak & Snell 1999; Ployhart & Moliterno 2011b). Hence, the management of employees' knowledge through knowledge management, elevate SMEs' capability in sustaining competitive advantage. This is further supported by RBT, where this particular study defines 'strategic knowledge' as resources that fits the valuable, rare, inimitable, non-

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substitutable, and is believed can be collectively organised for sustainable competitive advantages.

Furthermore, KM strategy is connected within the HRM – performance link as they are few key dimensions of strategic KM practices that can be related to organisational performance. All these links are related to managing human capital in the organisations strategically at unit-level capacities based on individual KSAOs that are accessible for unit-relevant competitive advantage (Ployhart et al. 2014). First, the ability to locate and share existing knowledge whether internally or externally. Second, the ability to experiment and create new knowledge that will elevate not only financial performance but also innovation performance. Third, KM strategy also stimulates a culture that encourages knowledge creation and sharing. Fourth, KM practices emphasise the strategic value of knowledge and learning in the organisations (Zack et al. 2009).

Hence, knowledge management have emerged as an important aspect in business organisation that makes managers realise the potential for sustaining competitive advantages. Wright et al. (1994) provides a theoretical discussion of the circumstances under which human resources can be a source of sustained competitive advantage using RBT (Barney 1991; Barney 1995). Within the discussion in the literature discussing the so-called 'black-box' linking HRM – organisational performance leads the debate to strategic human resource management theory (SHRM). This theory focuses on organisational performance rather than individual performance and the utilisation of strategy in building sustainable competitive advantage that in turn creates above-average financial performance (Becker & Huselid 2006). Thus, knowledge management strategy can also be linked to HRM – performance from

SHRM perspective that emphasise the management of KSAOs at organisation/unit level.

Previous studies have confirmed that KM can also be linked to HRM – performance relationship at organisational level (please refer Appendix 2: Key research in knowledge management). For example, Chadee & Raman (2012) found that proper management of external knowledge contribute positively to organisational performance from strategic human capital point of view. Furthermore, Roxas et al. (2014) emphasise the importance of engagement in learning activities by owner managers or senior management as one of the mechanism through which SMEs absorb external knowledge and strengthen KM and innovation performance relationship. In addition, Dahlander et al. (2016) suggest that the positive effects between external search and innovation outcomes is driven by employees who spend a large amount of time with external people. This is where the right management of talented and knowledgeable employees strengthen the HRM – organisational performance link. In summary, previous studies seem to suggest that hiring the right people through recruitment, training and development of talented employees do enhance the HRM – performance link.

2.4 Talent Management

The emergence on TM field started from McKinsey consultant group in 1997 with regards to an article related to 'war of talent'. However, although there are thousands of article related to TM to date, most of them are from HR practitioner literature. There are huge gaps between practitioners' and academics' interests in TM (Dries 2013a) mostly due to lack of clear definition (Lewis & Heckman 2006) and also the utilisation of TM as an extension over related concepts such as SHRM (Chadwick & Dabu 2009),

competency management (Lado & Wilson 1994), and knowledge management (Whelan & Carcary 2011).

To date, a handful of reviews have been published reviewing TM literature from different angles. The most up-to-date review confirms that TM field is in its transition from growing to maturity stage since the first mention in 1998. Gallardo-Gallardo et al. (2015) bibliometric analysis portrays gradual increase in the number of publication from 2010–2014. Furthermore, TM field is still growing, as this field does not yet have established outlets for publishing its research.

In addition to that, the content analysis code all the 139 articles in their database and come out with a number of potential theoretical frameworks, that is, resource-based view/human capital, international human resource management, employee assessment, institutionalism, knowledge management, strength-based approach, career management, specific HR practices (i.e., recruitment, selection, development, succession planning, retention management, or reward management). The four dominant theoretical frameworks in Gallardo-Gallardo et al. (2015) are resource-based view, international human resource management (IHRM), employee assessment, and institutionalism followed by the alternative framework like knowledge management (KM), career management, social exchange theory, and strength-based approach.

The second review on TM was done by Cappelli & Keller (2014) who specifically examined the conceptual approaches and practical challenges in TM field. They have suggested three new themes in contemporary TM, which focus on (1) the challenge of labour market, focusing in the issue of retention and managing uncertainty,

(2) new models of moving employees across jobs within the same organisation, and (3) strategic jobs for which investments in talent likely show greatest return.

Interestingly, the view on the lack of clarity regarding the definition, scope and overall goals of TM (Lewis & Heckman 2006) are less true in the academic literature, where scholars are more careful in defining talent and distinguishing TM from the study of specific HR practices and SHRM (P. Capelli 2008; Collings & Mellahi 2009; Tarique & Schuler 2010). Cappelli & Keller (2014: 309) suggest strategic jobs as the new idea in defining TM following the dominance of the job differentiation perspective. They define TM "as the process through which organisations meet their needs for talent in strategic jobs, 'talent' as those individuals who currently or have the potential to differentially contribute to firm performance by occupying strategic jobs". This view is an extension of Collings & Mellahi (2009) definition of strategic TM that utilises "talent pool as the high-performing incumbents in strategic jobs and those individuals identified as having the potential to occupy strategic jobs in the future (Cappelli 2008; Cappelli & Keller 2014: 309).

The third critical review on TM was presented by Thunnissen et al. (2013). They have come out with three dominant themes on the exploration of the concept of talent, the intended outcomes or effects of TM, and TM practices available in the literature. They have added new perspectives of TM like stakeholder theory, multiple goals, and extended considerations of practice contributing for broader theoretical framework for TM in different context. They have compiled articles from variety of journals and not typically HRM journals such as *Human Resource Management Review* and *Human Resource Planning* but also in international management journals (e.g. *Journal of World Business*) business journals (e.g. *Harvard Business Review*) and journal for

specific sectors of industry (e.g. *International Journal of Contemporary Hospitality Management* and *Health Care Management Review).*

However, two thirds of the papers on TM in this review are conceptual in exploring the field of TM. This is common for a growing field such as TM. This signifies the importance of more empirical evidences in this topic. In addition, half of the conceptual papers address the link between TM and strategy and discuss how TM can contribute to organisational performance and competitive advantage (Cappelli 2008; Boudreau & Ramstad 2005b). There are smaller number of literature that make the critical remarks on the negative effects of TM on the link between TM – strategy (Martin & Schmidt 2010).

The next literature review on TM was done by Dries (2013b) who analysed TM from psychological perspective. This review proposes psychology as the missing link or the black box between HRM strategy and organisational performance. The argument behind this mechanism is that, unlike non-human resources, humans are not just a resource because they need to be approached from a psychological perspective rather than RBT. From psychology perspective, talent is operationalised as 'individual differences' and the proposed gap in the literature on TM from psychological perspective is the criterion of talents. In the review, she summarised the relevant psychological theoretical perspectives on talent as the following: (1) Industrial – organisational psychology, (2) Educational psychology, (3) Vocational psychology, (4) Positive psychology, (5) Social psychology.

The comparative analysis of all these perspectives creates potential tensions in the literature. The first tension is between object versus subject perspective on talent.

The difference between these two perspectives are object perspective focuses on the *characteristics* of talented people although both focus on identification and development of talent. The object perspective is more related to human capital theory and RBT. Vance & Vaiman (2008) suggest that object approach to TM is more likely to see competence management and knowledge management as central practices within its integrated TM. Thus, the possibility of TM – performance relationship is higher in object perspective of talent. The second tension in the literature refers to inclusive versus exclusive perspective of talent. Inclusive TM considers all employees as talented employees while exclusive TM only treat the high potential as talents. The third tension in TM literature is the view on innate versus acquired perspective on talent. Innate perspective on talent focus on the selection, assessment, and identification of talent; while acquired perspective on talent, on the other hand, imply a focus on education, training, experience and learning as tools of talent development.

Talent Management Practices and Activities

The main focus on TM practices and activities in the literature are mainly recruitment, staffing, succession planning, training and development, and retention management (Thunnissen et al. 2013). It seems that TM practices vary amongst the authors, depending on the situation, industry, country, and organisational context. For example, Alias et al. (2014) put managerial support, employee career development and rewards and recognition as TM practices in information technology (IT) organisation in Malaysia. The finding of the study proof that higher satisfactory on TM practices will enhance the employees engagement with the organisation.

In addition, as in the study of TM in medium-sized German companies (Festing et al. 2013), it has been demonstrated that TM practices vary significantly in different

type of organisations. They opted for the definition of TM by Stahl (2007); TM practices are more focused on attracting, retaining and developing talent. The study shed light on TM approach applied by SMEs and the observation showed that larger (medium-sized) companies placed more emphasis on TM (Festing et al. 2013). In addition, Valverde et al. (2013) have explored TM in Spanish organisations and suggest the urgency to explore TM from different national contexts to understand how it can contribute to organisational performance.

Regarding recruitment, staffing and succession planning, Stahl et al. (2012) found in their study that most companies follow a talent pool strategy. Employees, the talented ones, in this pool get 'special treatment' in order to accelerate their development and performance. This pool develops talent with a particular succession or career path in mind or within a broader organisational context (Collings & Mellahi 2009). Other scholars also make remarks about make or buy talent (Capelli 2008; Collings & Mellahi 2009). P. Capelli (2008) has developed a 'talent on demand' framework to control the demand-supply gap based on supply chain management. He refers to the optimal equilibrium between recruiting on the external labour market and the training and development of internal candidates.

Pfeffer (2001) sees some shortcomings with buying talent and warns about the glorification of the talents of those outside the company while playing down the talents of insiders. Outsiders have the advantage of mystery and scarcity value, and an organisation has to put effort in catching the big fish. Finally, with regard to retention, Stahl et al. (2007) claim that creating and delivering a compelling employee value proposition, personalised career plans, highly competitive compensation and a healthy balance between personal and professional lives are elements of successful TM.

Within the emerging body of literature on TM, a range of perspectives has been growing and developing in the literature. Central to the academic debate of TM is the question of what TM means in practice. Four main views co-exist (see Lewis & Heckman 2006; Collings & Mellahi 2009 for reviews). The first perspective sees TM as a newer fashion of human resource management. This perspective equates TM with HRM and argues that all employees have talent that should be developed and trained. It is an inclusive and universal approach of TM. This perspective has been criticised as old wine in the new bottle (Preece et al. 2011; Iles, Chuai, et al. 2010; Lewis & Heckman 2006; Iles, Preece, et al. 2010) as it is like re-branding HRM practices to TM practices as both have the same practices applied to the same employees or talents.

Lewis & Heckman (2006) have identified three broad strands of thought regarding TM, often associated with a particular theoretical basis: TM is not essentially different from HRD/HRM, as both involve getting the right people in the right job at the right time and managing the supply, demand, flow and development of people through organisation. TM may be a re-labelling or re-branding exercise to enhance HRD's credibility, status or 'fashion', but conceptualising TM in terms of the functions of traditional HRD seems to add little or nothing new to our understanding of how to manage talent strategically.

TM is integrated HRD with a selective focus. Here TM may use the same tools, but its focus is on a relatively small segment of the workforce, defined as 'talented' by virtue of their current performance or future potential. The focus here is on 'talent pools', both internal and external to the organisation, using concepts from marketing theory, such as 'employer brand' and 'workforce segmentation' to focus on attracting and retaining key individuals. TM involves organisationally focussed competence

development through managing and developing flows of talent through the organisation. The focus here is on talent pipelines rather than talent pools. This strand more closely relates to succession planning and human resource planning, and focuses primarily on talent continuity, linking into succession planning and leadership development.

By contrast, the second perspective takes a narrow view in treating TM as succession planning. In this perspective, a key task is to develop 'talent pipelines' to ensure the current and future supply of competent employees, as well as an organisation-wide holistic talent mind-set (Lewis & Heckman 2006). However, this perspective has been criticised for failing to take into account business and labour market uncertainties (Capelli 2008; Cappelli 2009). According to Capelli (2008; 2009), a more effective way of minimising the effect of uncertainty is to develop a talent pool with broad and generic competencies that can be drawn upon to fill a wide range of roles (see the fourth perspective).

The third perspective sees TM as the management of talented employees. It focuses only on a relatively small number of employees who demonstrate high potential and/or high performing. This approach is more exclusive in nature (Thunnissen et al. 2013; Meyers & Van Woerkom 2013; Dries 2013b). TM in this perspective means identifying who the talent are through pre-defined criteria and then manage them effectively through a set of tightly coupled HRM tools, activities and processes (Iles, Chuai, et al. 2010). However, the exclusive approach may create a kind of organisational culture that discourage teamwork and collaborative spirit (Mellahi & Collings 2010).

The fourth perspective views TM as the strategic management of 'pivotal positions' rather than 'pivotal people' (Collings & Mellahi 2009). It signals a departure from being people-oriented to being position-oriented, and from a micro focus on certain individuals to a more macro focus on systems (Jones et al. 2012). The strategic goal of TM is the organisational goal instead of HR goal (Cappelli 2009). It is further argued by Boudreau & Ramstad (2005) that an increased focus on key positions instead of talented individuals portrays TM perspective on organisational process and systems for identifying key positions that are strategically important to the organisation and filling them with the right employees through good HR systems and processes. These key positions are not confined to managerial roles, and may include functional and technical positions, which may have a significant impact on organisational performance (Collings & Mellahi 2009; Kim et al. 2014). Overall, these four perspectives are mainly preoccupied at the individual and organisational level without contemplating explicitly the role of national institutions and societal culture in shaping management perceptions of TM and HRM practices.

Intended Effects and Outcome of Talent Management

More than half of the scholars who make remark on the intended effects of TM state that TM should contribute to the overall organisational performance (e.g. Collings & Mellahi 2009; Collings & Mellahi 2013; Valverde et al. 2013; Festing et al. 2013; Macfarlane et al. 2012; Farndale et al. 2014; Stahl et al. 2012; Zheng et al. 2008). Scholars also argue that TM should increase the competitive advantage of the organisation (Ashton & Morton 2005; Lewis & Heckman 2006; Mellahi & Collings 2010; Schuler et al. 2011; Sheehan 2012; Harris et al. 2012).

These aforementioned articles are supporting significant relationship between TM and performance. The results of previous research on the TM – performance relationship have been mixed. While several studies have evidenced positive relationship (Sheehan 2012; Chadee & Raman 2012; Harris et al. 2012; Chami-Malaeb & Garavan 2013; Kim et al. 2014), others found negative and curvilinear relationship between TM and performance (Groysberg, Lee, et al. 2008; Groysberg, Sant, et al. 2008; Groysberg et al. 2011; Björkman et al. 2013; Swaab et al. 2014).

Recently, substantial analysis has been focused on the association between TM and enhanced performance (Boudreau & Ramstad 2007; P. Capelli 2008; Collings & Mellahi 2009). However most of these articles are conceptual in nature. Furthermore, in the latest literature review, Gallardo-Gallardo et al. (2015) claims that the 'unempirical' nature of TM field seems to be exaggerated as 61% of articles in their literature review were coded as empirical. However most of these empirical evidences were published from 2011 onwards. As expected in an emerging field, qualitative and conceptual papers are the most prevalent. Since, this PhD research is a quantitative study, majority of the literature review in this section are quantitative in nature.

To date, only a limited number of studies have examined questions informative to this research agenda. Marescaux et al. (2013) observe a negative overall effect between TM and performance when exclusive TM practices were implemented. Likewise, Groysberg and his colleagues also show the negative side of "star" system with the exclusive version of TM (Groysberg, Sant, et al. 2008; Groysberg, Lee, et al. 2008; Groysberg et al. 2011).

The following are some empirical evidences that found positive significant effects of TM and organisational performance. A study by Sheehan (2012) is an example of a study that empirically test the relationship between TM and performance as she tested the relationship between TM-managerial development and perceived performance in multinational corporations. This quantitative study provides considerable evidence of commitment to TM within the sample of large multi-national companies. Sheehan (2012) analysed the data from 378 organisations UK-owned subsidiary and found positive relationship between strategic HR and perceived subsidiary performance. In addition, managerial development (i.e. TM) is also found to have positive association with perceived subsidiary performance. Hence, this study has examined the link between specific type of TM (i.e., managerial development) and perceived subsidiary performance.

Another study by Chadee & Raman (2012) examined TM in offshore IT service provider in India. They try to answer the question of how TM contributes towards the performance of offshore IT service provider. This unique and specific context of TM implementation gives several new insights. The result confirms that TM is positively related to performance of this offshore IT provider. Interestingly, the results suggest TM practices have the ability to transform external knowledge into superior performance. This study used RBT (Barney 1991) to argue on 'knowledge' and 'human capital' as the resources that meet the VRIN characteristics (Becker & Huselid 2006). The main focus of Chadee & Raman (2012) was to study the role of TM on the effects of knowledge on the performance of knowledge-intensive organisations such as the offshore IT service provider in India. They tested the mediating effects of TM on the relationship between external knowledge and organisational performance. They found

positive support on the association of TM and performance and significant mediating effect of TM on external knowledge and performance.

A third example of research that found positive relationship between TM and organisational performance is a study by Höglund (2012). Using psychological contract theory, they approached TM as a specific dimension of SHRM focusing explicitly on the accrual of human capital by examining the indirect relationships. They found positive relationship between skill-enhancing HRM practices and human capital. Also, talent inducements will mediate the relationship between skill-enhancing HRM practices and human capital. They have suggested that "…differential treatment of employees based on criteria constituting talent can have positive effects on employee motivation and felt obligations to develop skills and apply these in service of the organisation" (Höglund 2012: 136).

Meanwhile, there are examples of studies that found negative talent or TM practices effect on performance. A study Björkman et al. (2013) explored the relationship between employees and performance at individual levels looking at employees' perception on themselves. Three categorical perceptions of employees on themselves (i.e., perceived as talent; perceives as not talent; or don't know) were tested using quantitative survey on 768 employees in MNCs. One unanticipated finding was that informing employees that they were not talent of the organisations had "little negative effects" on performance (Björkman et al. 2013: 208).

A similar quantitative study (Marescaux et al. 2013) considering 13,639 Belgian employees showed an inverted U-shaped relationship between employees' perceived

favourability of HR practices outcomes and affective organisational commitment. The graphs illustrating their hypothesis are shown in Figure 2.5 below:
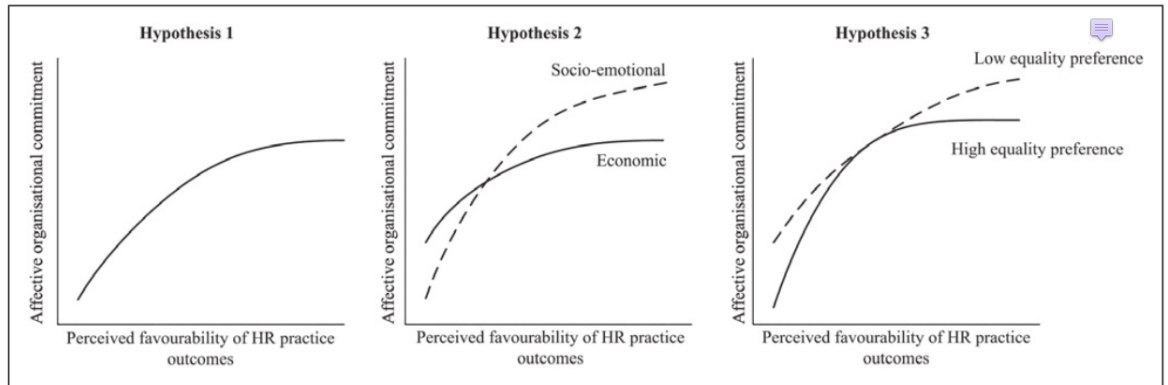
Figure 2.5: Hypotheses of Marescaux et al. (2013a) Study.

It had been reported by Marescaux et al. (2013a) that hypothesis 1 was supported, while hypothesis 2 was partially supported and hypothesis 3 was not supported. An important contribution of this quantitative study with large sample size explained the non-linear relationship between perceived favourable of HR practice outcomes and affective organisational commitment. Even though this study was generally focusing at the individual level, it demonstrated the negative effects of exclusive TM on organisational performance through employees' perception on the 'favourability' of HR practices outcomes. The results also demonstrated the negative and curvilinear effects of 'workforce differentiation' (Huselid & Becker 2011). It is also interesting to note that "…the potential decline in affective organisational commitment among employees who feel to some degree set back in the process is also larger, implying that HR differentiation is a "***double-edged sword***."(Marescaux et al. 2013a: 341).

This brings us to the next example that explains 'double-edged sword' effect where the findings can be related to be both beneficial, as well as detrimental on

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performance. An interesting article by Chi et al. (2009) entitled *A Double-Edged Sword? Exploring the Curvilinear Relationship between Organizational Tenure Diversity and Team Innovation: The Moderating Role of Team Oriented HR Practices* investigated the potential curvilinear relationship between organisational tenure and team innovation. It is interesting to note that from information and decision-making theories, high organisational tenure among team members increase the potential of conflicts especially if the aim of the team work is innovation as team members are highly interdependence. This study further supported teams with low level of tenure diversity that would lead to more innovative ideas and propose an inverted U-shaped pattern on organisational tenure and team innovation performance.

The last example in this section that supports curvilinear relationship between talent and performance is a study by Swaab et al. (2014: 1582) that has introduced the notion of 'too-much talent' effects, "which predicts that teams with too many dominant individuals produces disputes over within-group authority and status that ultimately undermine performance". The results of this study from three archival studies had revealed that the too-much talent effects emerged when team members were interdependent like in football and basketball team. Too many top talents in a team can produce diminishing marginal returns and even decrease performance by hindering intra-team coordination.

It is interesting to note that at low task interdependence between team members, the relationship between talent and performance is positive. However, the positive relationship eventually turns negative when there is high level of task interdependence. This argument is supported empirically when talent and performance relationship never turns negative in baseball teams (Swaab et al. 2014) as prior research suggested that

baseball would involve much less task interdependence among team members (Bloom 1999) as compared with football and basketball teams. Even though this empirical evidence had been tested in sports domain, Swaab et al. (2014) predicted that the too-much talent effect would be found in other organisational contexts as well (Groysberg, Lee, et al. 2008). All these empirical evidences seem to suggest the potential curvilinear relationship between TM practices and organisational performance relationship.

Talent Management in SMEs

Previous studies have also explored TM in the context of smaller organisations (Festing et al. 2013; Valverde et al. 2013). For example, a study was done exploring TM in the context of German medium-sized organisations. This study found medium-sized enterprises invest more heavily in TM as compared to micro and small enterprises. They have further argued that "the effectiveness of TM and its added value to organisations has not yet been evaluated comprehensively, which is especially true in varying national and organisational contexts" (Festing et al. 2013: 1872). Research on TM in other national context is still limited. Most of the current research on TM have been conducted within the Anglo-Saxon contexts, and mostly in European countries, non-English speaking like Netherlands, Belgium, Belgium, Germany, Spain, and Finland. In addition, most studies on TM are based on data from India, UK, US, China, Belgium, Australia, and Spain. Notably, more than 50% of the data collected came from Europe (i.e., UK, Belgium, Spain, Ireland, the Netherlands, Switzerland, Sweden, Poland, Italy, France, and Germany (Gallardo-Gallardo et al. 2015).

Another example of TM study in the context of SMEs is in the context of Spanish SMEs (Valverde et al. 2013). Their study was exploratory in nature utilising multiple case study methodology in analysing TM perceptions, definitions and

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practices applied in the context of medium-sized enterprises. They also found examples of inclusive and exclusive approaches to TM in the context of Spanish medium-sized enterprises. They have suggested that neither approach would be superior but each one may make more sense in a specific organisational setting. Hence, TM practices in smaller organisations are different from the practices in large enterprises. The results of the study propose the idea of considering TM as "an all-encompassing approach to managing people, rather than simply a set of practices" (Valverde et al. 2013: 1848). This conceptualisation of TM is consistent with RBT, as it not only considers talent as key resources but also highlights the ability of talented employees to adapt and modify the opportunities presented by the environment (Barney 1991). Furthermore, the issues surrounding TM are different for medium-sized enterprises, which have a certain degree of structure.

In addition to the above empirical evidences, Cui et al. (2016) have investigated strategic TM from the perspective of Chinese service SMEs. A quote from the manager of SME D said in the case study:

"We consider all of our employees as [key] talents. They were definitely talented, when they joined our company. At least we thought so, otherwise why would we recruit them?" (Cui et al. 2016: 5)

The above quote highlights inclusive TM approach in SME. Furthermore, since the case study is based in four services SMEs, the nature of the work in the service sector would influence managers to adopt a more 'universalist' approach in defining and managing talent. The results of the case study in an emerging market such as China (Cui et al. 2016) would have the same results with those found in previous qualitative study on

TM in Spanish medium-sized enterprises (Valverde et al. 2013). Both case studies found that SMEs implement both approach (i.e. inclusive and exclusive TM practices) depending on their capability.

There is a relative paucity in TM studies in SMEs to empirically test the relationship between TM practices and organisational performance relationship even though it has been proven that SMEs utilise both inclusive and exclusive TM approach (Valverde et al. 2013). Most literatures review in this chapter tested TM – performance relationship in the context of large companies (Macfarlane et al. 2012; Ayetuoma et al. 2015). Hence, testing the effects of TM on organisational performance in the context of SMEs would probably give new insights.

2.5 Knowledge Management

Knowledge management (KM) is a term introduced by Nonaka, drawing from the concept of 'knowledge-creating organisation' in 1991 (Nonaka 1991), and it is defined as organisational activities related to exploring what knowledge is and how to create, transfer, and use it (Davenport & Prusak 1998). KM is a field that consists of two important elements: either from the Information Technology (IT) and Information System (IS) research or from Strategic Knowledge Management perspectives. Alexander et al. (2016) elaborated the difference between 'Knowledge-based Management' and 'Strategic Knowledge Management' stating that the prior is technologically driven and dominated by 'hard' system theories. While the later, arises from softer theories such as RBT (Barney 1991) and is particularly relevant for studies of dynamic capabilities (Teece et al. 1997). This particular PhD research leans towards the soft theories defining strategic knowledge as resources that fits the valuable, rare,

inimitable, non-substitutable, and is believed can be collectively organised for sustainable competitive advantages.

These two elements of KM is illustrated by Ling (2011) as technology-centred KM strategy and people-centred KM strategy in their study testing the interaction effects of KM strategy on intellectual capital and global performance relationship. The technology centred KM strategy is IT-driven and focuses on the tangible aspects of KM, while the people-centred approach is driven by organisational learning and focuses on the tacit aspects of KM (Hansen et al. 1999; Perez & Pablos 2003). This PhD study emphasised the people-centred approach in KM strategy implementation, especially in smaller organisations. The people-centred KM strategy emphasised the generation of knowledge sharing through the interaction among people in the organisations and also with other stakeholders.

Previous studies have found that more tacit knowledge is shared during interaction between employees (Lee et al. 2014). However, tacit knowledge is unobservable and is difficult to codify. It is possible to convert tacit knowledge into explicit knowledge, but much tacit knowledge is quite impossible (Nonaka & Takeuchi 1995). Tacit knowledge involves the training of perception in such a way that the individual "discovers by an effort of his own something that we could not tell him, and he knows it then in turn but cannot tell it" (Polanyi 1969: 142). The discussion on tacit knowledge can be separated either from individual tacit knowledge and group/unit level of tacit knowledge management. Individual tacit knowledge is more related to the skills and abilities of the individual employee that is developed through experiences. On the other hand, group or unit tacit knowledge that are related to group activities may be stored in something akin to a "collective mind" (Wegner 1987). The knowledge

required for a team to perform, requires practice with each other. It is experiential, which means the team members learn and exchange tacit knowledge while doing the job together (Berman et al. 2002).

Knowledge has been considered an organisation's most strategic resources that are valuable and hardly to imitate. The view of knowledge as strategic resource rooted mainly from RBT. Beginning with the seminal work of Penrose (1959) and including Wernerfelt (1984), Barney (1991), R. Grant (1996), and Peteraf (1993) strategic resource should result in strategies that produce greater value than those of competitors. Organisations are increasingly dependent on knowledge resources, which have particular characteristics as a strategic focus on aspects such as competencies, organisational learning, knowledge sharing, and management of tacit and explicit knowledge (Park et al. 2013). From the knowledge-based view of the firm perspective (Kogut & Zander 1992; R. Grant 1996), knowledge has a unique capabilities and inimitable characteristics that make it strategic for sustaining competitive advantage.

As a research field, strategic KM is steadily becoming more mature as the early papers that first presented in this field in the late 20th century (Nonaka 1991; Lewin & Nonaka 1994; Nonaka & Takeuchi 1995; R. M. Grant 1996; R. Grant 1996). Nonaka and Takeuchi's book *The Knowledge Creating Company* is one of the most influential in the field of KM. The authors introduce the theory of "Organisational Knowledge Creation" that explains the capability of the organisation as a whole in knowledge creation (Nonaka 1991; Lewin & Nonaka 1994; Nonaka & Takeuchi 1995). The model represents four modes of knowledge creation and has been repeatedly claimed by the authors on the universal validity.

The four modes of knowledge creation are socialisation, externalisation, combination, and internalisation. Nonaka and Takeuchi further give new insights on the different perspectives between the Eastern and Western philosophy of knowledge, which has been differentiated by the term explicit and tacit knowledge. They have argued that it is the use of tacit knowledge that enables Japanese companies to come up with a lot of innovation and sustain competitive advantages in the international market. In addition, they have also emphasised that Western approach to objectifying knowledge overly focuses on explicit manifestation, which lead to the debate of the universality of knowledge creation model.

Glisby & Holden (2003) have argued that the tacit elements embedded in Nonaka's own model are not at all straightforwardly transferable to a non-Japanese context. They have argued that Nonaka's proclaimed universal theory of organisational knowledge creation rests heavily on a tacit foundation of Japanese values and management practices but he refuses to see that the universal validity of the model is perforce constrained by its cultural embeddedness in the Japanese society from which it originated. Furthermore, the literature is almost silent on KM in its cross-cultural dimensions. Despite the importance of cross-cultural consideration in the transfer of knowledge, Holden (2002) has commented:

> One of the problems in the knowledge management literature is that authors give the impression that knowledge management operates in a kind of unitary vacuum, in which diversity in terms of language, cultural and ethnic background, gender, and professional affiliation are compressed into one giant independent variable, which is in any case pushed to the side.

Glisby & Holden (2003) further argued that Nonaka's four modes of knowledge conversion are Japan-specific in nature, and therefore, this model cannot uncritically be transferred to a non-Japanese context and have the equivalent explanatory power. Hence, they further suggest for non-Japanese companies to utilise the knowledge creation model as a map rather than a model in order to understand their own organisational culture in order to observe KM practices and behaviour in the specific context. This argument further emphasises the influence of context in KM implementation success.

To date, many literatures in KM field agree that culture is perhaps the most influential factor in promoting or inhibiting the practice of KM (Davenport & Prusak 1998; Hayton et al. 2003; Boh et al. 2013; Haak-Saheem & K. Darwish 2014; Said 2015). Specifically organisations that value their employees with what they know, and reward employees for sharing that knowledge create an environment that is more conducive to KM. Said (2015) has done a comprehensive review of previous literature and suggests the possible relationship between organisational culture, KM processes and organisational performance. His paper on *'Positioning organisational culture in knowledge management research'* offers possible new insights into the impact of organisational culture on various KM processes and their link with organisational performance. For example, Lee et al. (2014) emphasise the importance of people and culture for the success of KM implementation in South Korean hospital nursing organisations. The research findings suggest the importance of knowledge sharing culture, organisational learning, and good knowledge infrastructure for better collaboration between members. One interesting finding in their study is that the strongest factor affecting nursing performance in South Korea is the knowledge sharing

culture, followed by workplace, total years of work experience and organisational learning. Thus, this empirical evidence from South Korea supports the importance of contextual contribution especially culture in knowledge-creating company.

Meanwhile, Grant (1996) emphasises the importance of organisational capability in a dynamic-competitive environment. The essence of organisational capability is the integration of individuals' specialised knowledge as the most important strategic resources for sustainable competitive advantage. He further proposes that organisational capabilities are the manifestation of knowledge integration. An interesting proposition that is very much related to this PhD study is the link between capability and structure where the "…effectiveness in creating and managing broad-scope capabilities requires correspondence between the scope of knowledge and the structure needed for managing such integration" (Grant 1996: 385). Hence, different level of organisational capabilities would give a significant type of influence on performance.

KM is a process of managing strategic resources and capabilities that are valuable, rare and difficult to imitate. KM strategy is also considered as the key to sustainable competitive advantage. It has also been recognised as a key instrument for the improvement of organisational effectiveness and performance (Zack et al. 2009). KM is defined as the organised process of creating, capturing, storing or disseminating, and using knowledge within and between organisations to maintain competitive advantage (Lewin & Nonaka 1994; Davenport & Prusak 1998). KM consists of identifying and leveraging the collective knowledge in an organisation to contribute to its performance. Hence, the performance of organisations depends on the extent to which managers exploit, leverage and bundle the available knowledge resources and

turn them into valuable assets for the organisations. The following section will elaborate on KM practices and strategy that are currently discussed in the field of KM literature.

Knowledge Management Practices and Strategy

KM is an approach of more actively leveraging the knowledge and expertise to create value and enhance organisational effectiveness. Zack et al. (2009) have defined KM practices as "observable organisational activities that are related to KM" and suggests four key dimensions of KM practice that relates to performance:

1. The ability to locate and share existing knowledge;

2. The ability to experiment and create new knowledge;

3. A culture that encourages knowledge creation and sharing; and

4. A regard for the strategic value of knowledge and learning

The above four KM dimensions are basically related to knowledge sharing, knowledge creation, and learning. In addition, efficient KM practices deal with the application of knowledge: they facilitates the development of routines and capabilities, given that even if an organisation can afford different resources, effective KM practices will be needed to exploit them (Villar et al. 2014).

Meanwhile, Chen & Huang (2009) suggest KM capacity constructs as knowledge acquisition, knowledge sharing and knowledge application. While, Yahya & Goh (2002) utilised five KM activities which are knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation, and knowledge application. Jayasingam et al. (2012) reveal that KM practices consist of knowledge acquisition, knowledge dissemination, and knowledge utilisation and have significant relationship

with performance. All of these are examples of KM practices that show the variety in KM literature.

As noted from the aforementioned discussion of KM practices, strategic KM is rooted from the 'soft' theories of RBT (Barney 1991), dynamic capabilities (Eisenhardt & Martin 2000), and 'organisational capabilities' (Joyce & Slocum 2012). Elaborating KM from strategic perspective, Alexander et al. (2016) have adopted a theory from the field of strategic management, which is 'attention-based view' (Ocasio 1997) that emphasises the importance of the situational context in explaining why senior management or entrepreneurs pay attention to different knowledge foci. Furthermore, the search for new innovation would need them to decide how to allocate their attention across multiple search sources. Besides, attention-based theories of the firm recognise that the attention of both individuals and organisations is a scarce resource and that any allocation of attention has an opportunity cost (Ocasio 1997; Ocasio 2011). Hence, the intended effects and outcome of strategic KM on organisational performance especially the effects on innovation outcomes has not been explored in dynamic and competitive environment. Little research has accounted for the opportunity cost associated with innovation search. The following section discusses and shares the intended effects and outcome of KM strategy.

Intended Effects and Outcome of Knowledge Management

Previous studies in KM literature have tested the relationship between KM and performance. It has been suggested to look at organisational performance not only from financial perspective but also from non-financial performance measures like innovation. Findings that test the relationship between KM and performance have been mixed. Some research proves significant positive relationship between KM and

performance while the others found negative effects of KM strategy on organisational performance (Jayasingam et al. 2012; Zack et al. 2009; Chadee & Raman 2012; Bogner & Bansal 2007; Reich et al. 2014).In addition to these findings, some studies in this field also found negative or curvilinear relationship between KM strategy and organisational performance (Berman et al. 2002; Alnuaimi & George 2015; Wang & Han 2011).

The following are some empirical evidences that prove positive relationship between KM and performance. Amongst the earliest empirical evidence that found in an emerging economy such as Malaysia has confirmed the positive relationship between KM practices and organisational performance (Jayasingam et al. 2012). Responses from 180 knowledge-based organisations indicate that knowledge acquisition and knowledge utilisation positively influence strategic and operational improvement in the organisations. Perhaps the most interesting finding is that knowledge acquisition through hiring new talents into the organisations seems to be not the ideal solution for improving performance. However, Jayasingam et al. (2012) have found that the impact of knowledge acquisition upon strategic improvement is greater in smaller organisation as compared to large companies. At moderate level of knowledge acquisition, the performance level of these smaller companies increase to a higher level as compared to larger organisations that need high level of knowledge acquisition in order to sustain competitive advantage.

The second example of empirical evidence that clearly examines the relationship between KM practices and performance outcomes comes from a study conducted by Zack et al. (2009). Their findings reveal that KM practices have a direct relationship with intermediate measures of organisational performance but

organisational performance also exhibited a significant and direct relationship to financial performance. However, Zack et al. (2009) have found no significant relationship between KM practices and financial performance in the context of Canada, USA and Australian sample. KM practices and performance relationship is found to be indirect. Their findings reveal that organisational performance mediates the relationship between KM practices and financial performance. They have also summarised some articles that tested KM – performance relationship and found mixed findings in the literature.

The third example of empirical studies on the relationship between KM strategy and performance by Chadee & Raman (2012) test the relationship between external knowledge and performance on 68 offshore IT service providers. They have found positive relationship between external knowledge and performance. In addition, this study also tested the mediating effects of TM on the relationship between external knowledge and performance. Chadee & Raman (2012) have managed to prove that the mediating effects of TM as the mechanism through which external knowledge is transformed into better performance. The contribution of this empirical evidence is that they differentiate between internal and external knowledge and test the relationships of these two constructs on organisational performance.

Lastly, Bogner & Bansal (2007: 165) suggest three important components of KM that influence organisational performance: (1) organisational ability to produce new knowledge, (2) its ability to build new knowledge, and (3) its effectiveness in capturing a high proportion of the subsequent spin-offs. Utilising RBT and knowledge-based view theory, they argue that value creation is significantly impacted by how new knowledge creation is pursued. In addition, they have attempted to capture the gap in

RBT through managerial roles in understanding where and how underlying resources are created in order to create competitive advantage. The study evaluated the impact of KM capabilities on organisational performance by analysing over 30,000 patents for 42 companies in five industry over 19 years using ordinary least squares regression analysis. They have found that knowledge management based on exploiting past innovations motivates higher growth and profitability. Bogner & Bansal (2007: 181) have further suggested that, "developing new knowledge internally by aggressively leveraging prior innovations into new discoveries will positively impact performance". For example, Reich et al. (2014) have tested the relationship between KM and various aspects of performance in IT-enabled projects. Utilising a survey data from 212 IT-enabled business projects, they tested their idea that KM affects business value through Knowledge Alignment. Their findings showed that project managers who achieved Knowledge Alignment among the people and from three parts of the project (i.e. the IT team, the business change team, and the governance team) could have a significant positive effect on performance of the project. This study has managed to prove the indirect effects of KM on dependent measure of performance. Furthermore, the prediction that KM and its subsequent outputs (Project-based Knowledge and Knowledge Alignment) would negatively affect the attainment of budget and schedule targets was not supported. Surprisingly, the results indicated non-significant and mildly positive effects between these constructs. Hence, this study has illustrated an example of positive relationship between KM and performance in the context of IT-enabled projects.

These empirical evidences are just a few from many more studies that have found positive relationship between KM and organisational performance. However,

there are some studies in different context that have managed to prove the existence of negative effects and curvilinear relationship between KM and organisational performance. The first example that illustrates inverted U-curved effects of knowledge, on performance is taken from sports literature that looks at tacit knowledge as the core of sustainable competitive advantage. Berman et al. (2002: 13) stress the "inimitable" and "non-codified" characteristic of tacit knowledge and according to RBT, when tacit knowledge leads to high performance, such performance can only be sustained for some time. Their main arguments on collective tacit knowledge as a function of learning effects are subject to diminishing returns with respect to time: tacit knowledge accumulates at a diminishing rate and suggest the concept of "knowledge ossification" on performance (Berman et al. 2002: 14). In their study, Berman et al. (2002) have hypothesised the relationship between cumulative experience and team performance will turn from positive to negative by testing RBT with regards to team-based tacit knowledge and performance relationship using National Basketball Association (NBA) data. The measure was based upon the cumulative experience that members of the team have playing with each other. The results showed that as cumulative experience rose, the collective team-based tacit knowledge also increased. Although this knowledge would be valuable for performance and gain competitive advantage, up to a point, the effect of knowledge ossification would reduce the value of the knowledge and team performance would turn from positive to negative.

The negative effect is concluded as inverted U-shaped effects between team experience and performance by referring to previous study of 50 R&D teams. Katz (1982, cited in Berman et al. 2002) concluded:

The upward slope in performance probably reflects the positive effects of learning and team building as new project members contribute fresh ideas and approaches while also developing a better understanding of each other's capabilities, of the technologies involved, and of their working relationships. Such positive effects, however, appear to taper off teams whose members have continued to work together for a long period of time (Katz 1982: 98).

Berman et al. (2002) have proven that RBT proposition on positive relationship between organisational-level tacit knowledge and performance that is often presented as a potentially valuable intangible resources might lead to negative effects without protection mechanisms in sustaining the competitive advantages. Due to methodological difficulties associated with measuring tacit knowledge, they suggest 'shared experience as the mechanism by which a stock of tacit knowledge is accumulated over time'. They have found the value of shared experience, and by extension tacit knowledge, is positive but subject to diminishing returns. The effects of knowledge ossification outweigh the benefits of collective knowledge accumulation. Hence, the relationship between collective tacit knowledge and performance would give positive effects up to a certain point and turns negative when knowledge ossification effects set in.

The second empirical evidence provides example of negative and curvilinear relationships through creation of values on innovation (Alnuaimi & George 2015). They have extended previous research by testing the effects of technological complexity and organisational coupling on knowledge retrieval. Knowledge retrieval is defined as the 're-absorption' of previously spilled knowledge. It is also known as the extent to which an originating firm is able to build in knowledge that has spilled over

and has been leveraged by external firms. Looking at the effects of knowledge retrieval from external resources, absorptive capacity theory reveals the benefits gain from revealing some knowledge or information that will give strategic benefits to innovation performance. Alnuaimi & George (2015) have examined the impact of technological complexity on knowledge retrieval. This study have found that technological complexity has a curvilinear relationship with retrieval while organisational coupling has a negative relationship. An explanation for the curvilinear relationship between technological complexity and knowledge retrieval would be, as complexity increases from low to high, the marginal increase in knowledge retrieval diminishes, indicating a diminishing marginal effects on the relationship.

Lastly, Wang & Han (2011) have shown that there are significant negative effects of tacit knowledge on innovation performance in the context of SMEs. This paper traces the negative relationship between tacit knowledge and technology innovation performance and also the relationship between knowledge ambiguity and innovation performance management. In addition, the absorptive capacity is also found to have negative interaction effects on knowledge tacitness and innovation performance. The study has also found negative significant effect of assimilation capacity on innovation performance. This particular finding on the negative effects of tacit knowledge on innovation performance reflects the 'knowledge ossification' effects that contributes towards the negative and curvilinear relationship between collective tacit knowledge of the NBA team and performance (Berman et al. 2002: 14). The research context, which is the SMEs in Wang & Han (2011) empirical study signify SMEs' capability in innovation. For these SMEs, they may be able to access knowledge

from external sources through networking, but they may not have sufficient capacity to absorb such tacit, ambiguous, and complex knowledge for innovation.

In summary, the shared empirical evidences suggest the potential of positive, negative, and even curvilinear relationship between KM and performance. The type of relationship between the proposed variables are very dependent on the research context of the specific studies. For example, although Wang & Han (2011) have found more positive effects of knowledge properties on innovation performance, they have managed to figure out the negative significant effect of tacit knowledge on innovation performance in the context of smaller organisations like the SMEs in China. The findings reflect high level of collective tacit knowledge is shared between employees in smaller enterprises such as SMEs. Wang & Han (2011) findings support Berman et al. (2002) empirical evidence that emphasise the unobservable and cannot be codified characteristic of tacit knowledge relationship with NBA team-based tacit knowledge relationship. Interestingly, their findings indicate diminishing marginal effects of tacit knowledge on team-performance, which indicates an inflection point when knowledge ossification effects set in. Therefore, all these empirical evidences have provided the support for the conceptual framework of this PhD research.

Knowledge Management in SMEs

Like other management practices, KM was initially invented and developed in large organisation as tools to manage knowledge in business organisations. To date, KM is becoming more relevant in the context of smaller organisations like SMEs. Exploring the available literature review on KM in SMEs, Durst & Edvardsson (2012: 879) define KM as "…the processes and structures provided in SMEs to support different knowledge processes, such as transfer, storage, and creation". As knowledge is

becoming more strategically important in association with organisational capabilities to achieve competitive advantage (Teece et al. 1997), SMEs can benefit from proper management of knowledge although 'liability of smallness' limit their capability in implementing KM strategy compared to the large organisations.

The problem with resource constraint is one of SMEs' limitations in implementing KM strategy. They need to manage and utilise the existing resources at their best, as wrong decisions will have more serious effects on performance than large organisations. Previous studies have found mixed perspectives on KM implementation in SMEs. Some argue that proper KM strategy is more expensive to implement and SMEs are less capable to strategically gain the positive benefits from KM implementation in the short-time (Baptista Nunes et al. 2006). By contrast, some researchers argue that KM in SMEs is more informal, non-bureaucratic and flexible due to flatter organisational structure. These unique characteristics of SMEs make it more conducive for knowledge sharing (Durst & Edvardsson 2012). Furthermore, the sharing of tacit knowledge happens more easily in the context of smaller organisations due to its characteristics that is not easily codified, the transfer often happens during informal discussion and experiences sharing.

In addition, in most SMEs, the senior management play the important role in exploring, managing, and utilise available knowledge resources. For example, knowledge absorption in SMEs is purely done through the Senior management (i.e., senior management) (Wee & Chua 2013). This reflects SMEs capabilities in implementing KM strategy where most of the knowledge resides within the owner and some key individual talents, rather than physically shared with others through KM. KM

strategic implementation in the context of SMEs is crucial as the relationship between KM and performance is found to give mixed results especially in the context of SMEs.

Durst & Edvardsson (2012) have summarised unique challenges that SMEs are facing in KM strategy implementation. Previous studies on KM in SMEs reveal that most SMEs have no explicit policy targeted at strategic level due to the tendency of treating KM at operational level. In addition, SMEs adopt short-term unstructured ways towards organisational learning and KM implementation. This is further supported by one of the respondents in a case study interview of knowledge intensive SMEs in the UK that reflects the short-term thinking and planning of these SMEs:

> I am management and I am focused on what invoices are we going to get through the door this month. Those are the top of my list. Next down the way is what cash is going to come in this month. Those are the three priorities further down the list come things like are we going to release the next version of the product on time and where is next month sales going to come from and that settle those set of priorities. […] So I am thinking what is going to generate business for me in 18 months' time (MD Company B).

Although SMEs are found to be less capable in KM as compared to large organisations, medium-sized enterprises have better capabilities for KM success. The results of a study on innovation capabilities among manufacturing SMEs in Malaysia have found that SMEs have a 13.3% higher probability of being highly innovative than smaller companies (Hosseini 2014). Proportionately, more SMEs are involved in innovation as compared to smaller enterprises. The moderate level of SMEs' innovation capability increases the likelihood of KM implementation in the organisations. Thus, this PhD study aimed to narrow down the research context to SMEs in testing the

relationship between KM strategy and organisational performance. Furthermore, previous research which examined the relationship between KM and innovation performance in a high-tech SMEs industry has found the relationship to have positive effect.

The following studies provide some empirical evidence of KM research in SMEs. First, Chong et al. (2014) have examined the relationship between KM processes on the adoption of e-business supply chain in Malaysian SMEs. With a data from 200 SMEs, findings of this study support positive relationship between knowledge acquisition and knowledge application in e-business supply chain technology adoption. Their findings suggest that knowledge sharing with supply chain partners is important in sustaining competitive advantage and it is easier with e-collaboration tools.

The second empirical evidence is an article examining the relationship between KM and innovation performance within biotechnological SMEs (Alegre et al. 2011). RBT offers the explanation on the role of KM in creating sustainable competitive advantage. KM consists of identifying and leveraging the collective knowledge in an organisation to contribute to its performance. Although most of research findings on KM have been obtained in the context of large organisations, some studies claim that being small might have certain advantages like more flexibility, informal knowledge sharing and flatter organisational structure (Durst & Edvardsson 2012). Alegre et al. (2011) have clarified and measured the contribution of KM to innovation performance and thereby to the competitive advantage of an organisation in an under-researched context, which are high-tech SMEs. There is evidence of a positive relationship between KM practices and innovation performance. In addition, KM dynamic

capabilities indicate a clear mediating effect that strengthens the relationship between KM practices and SMEs' innovation performance.

Meanwhile, a qualitative study utilising multiple case study approach on knowledge management issues in knowledge intensive SMEs in the UK has highlighted some interesting findings. Baptista Nunes et al. (2006) have highlighted senior management's perception on short-term strategic goal and considered KM implementation would only give benefits in the long run. Furthermore, when asked on the management of explicit knowledge in their organisations, both senior management believed that they had captured the necessary knowledge to support the business processes. However, all the explicit knowledge is captured in online databases, websites, reports, presentations and meetings that take place within the SMEs. However, Baptista Nunes et al. (2006: 114) have also remarked that "…there is no clear and consistent strategy or infrastructure to capture and store important explicit knowledge". However, the findings of the study indicated that all interviewees had agreed that the management of tacit knowledge had been inadequately captured and managed within the companies. This was clearly mentioned by the MD of Company B:

> Inadequately captured in peoples' heads and this knowledge then walks out the day the people walked out – whenever somebody leaves.

Baptista Nunes et al. (2006) have shared in their article the reality of KM implementation in the context of SMEs that would require a considerable investment in both time and resources to implement. They have conclude that SMEs, including knowledge intensive ones cannot afford this investment. They have also observed that senior management are not prepared to invest the relatively high effort on long-term goals for which they would have difficulty in establishing the added value. The

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management style in SMEs has been clearly summarised by the CEO of Company A in this case study:

> Actually the most important part of this business is getting the business and living the business and all the other stuff is there to keep it going.

They have further suggested for KM strategy implementation in the context of SMEs need to take into consideration the important aspect of cultural, behavioural, and organisational issues before even considering the technical issues in the implementation process.

Together, these studies have indicated that KM strategy implementation is relevant in the context of SMEs (Ho et al. 2016; Wei et al. 2011; Alegre et al. 2011; Coyte et al. 2012). Although different approaches of KM are required to suit organisational capabilities depending on the size of the organisations, SMEs manage to tailor KM strategies that would positively influence innovation performance (Alegre et al. 2011; Wang & Han 2011; Leal-Rodríguez et al. 2013). Considering all of these evidence, it seems that studies on KM strategy in SMEs would be the most likely setting in order to test KM–performance relationship. With the right level of organisational capabilities and moderate innovative capabilities (Hosseini 2014), more research especially in Malaysian context would give more new insights.

2.6 Senior Management's Perceived Strategic Importance of Human Resource

The moderating variable proposed for this research is senior management's perceived strategic importance of human resources. It is argued that the extent to which senior management in medium-sized enterprises perceive HR to be strategically important will positively moderate the relationship between TM-and KM strategies on organisational

performance. In this study, the moderating variable would emphasise on the strategic importance of human resource as they would have greater potential to provide a competitive advantage for organisations than HR practices, which could easily be copied by competitors (Wright et al. 1994). Theoretically, following RBT arguments, Wright et al. (1994, cited in Harris et al. 2012: 410) have provided conditions under which HR could be a source of competitive advantage as quoted below.

> Human resources may be valuable because different jobs require different types and levels of human capital and individuals have different types and levels of human capital, thus people may contribute differently to the same job. Value may be created for an organization if individuals are matched with the proper job. Human resources may be rare because human capital may be normally distributed within the population. Thus, individuals with superior human capital may be difficult and costly for organizations to locate and acquire. Human resources may be inimitable because the unique history of an organization may dictate what human capital an organization acquires and how it is used. Causal ambiguity may occur when individuals work together, because it may be difficult for other organizations to understand how the human capital combines together to produce higher performance. Human resources may also be inimitable because of social complexity, such as relationships among individuals. Lastly, human resources may provide a source of competitive advantage because they are non-substitutable. In organizations, it is unlikely that one set of human resources (executives, employees, etc.) could be substituted with another and the unit performance would stay exactly the same. Thus, hiring and retaining human resources with high levels of human capital may be difficult and costly for an organization; however an organization that is able to accomplish this may achieve a competitive advantage.

The above summary seems to equate talents with human resources as both fit the characteristics outlined in Barney's VRIN framework.

It is argued in the literature that "decision process within organisations are affected by how the organisations channels the attention of decision makers towards

matters that are deemed important (Greer et al. 2015:6). This notion is supported by attention-based view that explain how organisational behaviour is influenced by how the attention of decision makers is distributed (Ocasio 1997). ABV explains that "what decision makers do depends on where they focus their attention" (Barnett 2008: 606). Hence, when senior management believe strategic HR as important, more effort in developing the available strategic resources, which are the people in the organisations, will be taken into implementation.

Besides ABV, resource orchestration theory also explains the influence of senior management perceived strategic importance of HR on TM- and KM relationship with performance relationship. Helfat and colleagues (2007) in their book on Dynamic Capabilities, emphasise on the role of managers in extending and modifying the resource base of an organisation by orchestrating the available assets. When senior management perceived the importance of strategic HR, more efforts are going to be allocated in structuring, bundling and leveraging the available resources in the organisations. The level of senior management influence in the context of SMEs are higher as compared to large companies (Wee & Chua 2013; Cui et al. 2016). Senior management's resource orchestration effort in influencing performance in the context of SMEs is important for competitive advantage.

Resource orchestration theory suggests that it is the combination of resources, capabilities, and managerial acumen that ultimately results in superior organisational performance (Sirmon et al. 2007; Sirmon et al. 2011). An example of a study using resource orchestration theory in the context of small organisations was done by Wales et al. (2013). In their study, the relationship between entrepreneurial orientation and organisational performance was tested and resource orchestration theory was theorised

in entrepreneurial orientation as it provided the direction for resources mobilisation and helped identify the resources necessary to support strategic objective.

In addition to the above study, Caridi-Zahavi et al. (2016) have also supported the role of senior management in influencing organisational performance, specifically focusing on innovation performance in the context of small- and medium-sized technological venture. In this study, senior management played an essential role in facilitating knowledge creation processes that positively influence innovation performance. Caridi-Zahavi et al. (2016) have tested a conceptual model about the ways in which senior management shapes a context conducive for knowledge creation processes and drive innovation performance.

Summary

To conclude this section, the literature identifies key theory, which is the RBT as the main theory that supports the conceptual framework of this PhD research. RBT explains the unique relationship between TM and KM strategy with organisational performance. The theoretical gaps in RBT are combined with strategic human capital theory (Ployhart & Moliterno 2011a). The literature review sections seem to be separated between TM literature and KM literature. The emergence of talent and knowledge as strategic resources are also further elaborated. Thus, arguments on how the management of talent and people at organisational or unit level can improve performance and enhance sustainable competitive advantages are discussed. Some empirical evidences that proves positive, negative, linear or non-linear relationship between TM – performance relationship and also KM – performance relationship are summarised and elaborated. The importance of context in TM and KM studies indicate the likelihood of non-linear relationship of TM/KM – performance especially in the context of SMEs in emerging

economy. Drawing upon RBT, strategic human capital resources (i.e., talent) has been examined as a novel theoretical lens in explaining the existence of diminishing, even harmful returns associated with increasing level of TM in SMEs. Given varied support for positive and negative TM effects on performance, it is surprising that the potential for TM practices to harm performance in smaller organisations has been a largely neglected area of inquiry. This study therefore sought to contribute to research in this area by examining the potentially curvilinear nature of the relationship between TM practices and financial performance in SMEs.

Chapter 3 **CONCEPTUAL FRAMEWORK**

Within the field of human resource management (HRM), the RBT has made important contributions in the emerging field of TM (Barney 2001; Gallardo-Gallardo et al. 2015) and KM (Bogner & Bansal 2007; Hitt et al. 2001). The emphasis on people as strategically important to an organisational success has contributed to the interaction of strategic HRM, strategic TM (Boxall 1996; Collings & Mellahi 2009), and KM strategy (Ling 2011; Kim et al. 2014). In the context of such interaction, the RBT model explains people as the internal source of an organisation's sustained competitive advantage. Human capital theory provides additional insights as to why strategic human capital resources help organisations to outpace competitors. It also proposes that organisations obtain a competitive advantage from strategic resources that are rare, valuable, inimitable, and non-substitutable (Barney 1991; Crook et al. 2008; Ployhart et al. 2014).

In this section, the theoretical arguments and hypotheses are developed, which form the conceptual framework for the subsequent empirical analysis. Since the research questions being investigated in this study concern the relationships between TM and KM – as an organisational-level strategic approach are related to performance in SMEs, the strategic human capital view is adopted to define talent and knowledge management at a unit-level or an organisational perspective. This study aimed to test the relationship between TM practices- and KM strategy on both financial and innovation performance. The hypotheses development pertaining to the presence of curvilinear relationships is further elaborated in the following section. This would be manifested with an inverted U-shape curve describing the relationship between TM/KM and organisational performance.

3.1 Talent Management and Financial Performance

Recent evidence suggests that the relationship between TM practices and financial performance is positive (Chadee & Raman 2012; Y. Kim et al. 2014). The positive relationship between TM practices and financial performance is strengthened through its impact on generating a better pool of employees, having higher skills and capabilities, and positive employees' engagement. First, financial performance is positively improved if organisations manage to attract talent. Talented employees are considered as strategic resources, following the RBT logic that is based on VRIO framework, which states that for talented employees to be consistently valuable (V), they must be rare (R), incapable of easy imitation (I), and facilitated by sufficient organisational resources (O). Strategically, talent have to be rare and inimitable so that they can create a capability to be different from other organisations, which do not possess them (Hoopes et al. 2003; Crook et al. 2008). This contributes to enhancing financial performance and sustainable competitive advantages.

It has been argued that TM practices, like strategic staffing, positively contribute to financial performance in smaller organisations (Greer et al. 2015). Employees with unique skills and capabilities are more valuable as they create a better pool of talent in the organisations, with beneficial knowledge and experience spill over effects to other employees. Organisations that invest in TM practices increase employees' stock of knowledge, skills, and abilities as a collective resources that has strategic value to the organisation (Ployhart & Moliterno 2011b). In the long run, the qualities of human capital resources (Ployhart & Moliterno 2011a; Ployhart et al. 2014) are improved in line with productivity that elevates financial performance. Hence, the first main

mechanism through which TM practices influence financial performance is through creating a better pool of employees.

The second mechanism through which TM practices would positively influence financial performance is the ability to elevate employees' skills and capabilities. With TM, more attention is given to the development of employees' skills and capabilities. The focus of TM practices is to attract, develop and retain valuable talented employees in the organisation. Training and development activities in the organisations not only elevate employees' skills and capabilities but also increase employees' job satisfaction. Strategic capabilities rest in these employees help to form a VRIO resource-base (Barney 1991; Boxall & Purcell 2000) and dynamic capabilities advantages (Teece et al. 1997). Employees' strategic capabilities need to be aligned directly to business unit level (Martin et al. 2011) so that the management of talented employees could increase the value of human capital resources. Training and development practices increase the value and inimitability of the employees as strategic resources. Furthermore, sustainable competitive advantage is achieved as competitors need longer time to redevelop human capital with the same value as the organisation in which the talented employees has been established for a long time (Ployhart 2009, cited in Shaw et al. 2013). Talented employees "…are potentially most valuable when they are retained where they were developed" (Shaw et al. 2013: 574). The unit performance is elevated because talented employees are strategically valuable and "controlled by a firm" enabling them "to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney 1991: 101). Organisations can exploit employees' potential through aligning the skills and capabilities development objectives with organisations strategic goals. Hence such TM practices positively influence financial performance as

employees gain more benefits and at the same time contribute more effectively to the organisation. Hence, the second mechanism through which TM practices is likely to increase financial performance is through proper exploitation of talents' skills and capabilities.

The third mechanism through which TM practices would positively influence financial performance is through improving organisational level-talented employees' engagement. Organisation-level engagement plays an important role as a mechanism through which TM practices influence financial performance, given that engagement is still a relatively new concept in the management literature (Rich et al. 2010). Barrick et al. (2015) propose that engagement is an organisational-level construct, which is influenced by motivationally focused organisational practices that represent organisational-level resources. Therefore, with TM, more focus is given on the effort to motivate talented employees via benefits and compensations to tighten their engagement with the organisation. Kahn (1990, cited in Barrick et al. 2015: 111) points out the definition of engagement as "employees" willingness to fully invest themselves physically, cognitively, and emotionally into their work roles" – and this explains individual level performance outcome. Highly motivated employees are more engaged to collectively perform for the organisation as manifested by positive work attitudes and work behaviours (Myeong et al. 2015). Combining these together, the positive relationship between TM practices and financial performance is strengthened. In addition, organisations that manage to elevate the level of emotional engagement of talented employees in the organisations would positively benefit financial performance (CIPD 2012) as employees that are transactionally engaged are likely to quit or move

to other organisation if they do not get the sufficient benefits or rewards (Shaw et al. 2013).

However, contrary to expectation of a positive relationship between TM practices and financial performance, the relationship between TM practices and financial performance would turn negative at certain level of TM implementation as talented employees' human capital begins to diminish and lose its value. The mechanisms through which TM practices negatively influence financial performance and lead to inverted U-shape relationship are the "too-much-talent" effects, excessive training and development costs, human capital loss, and insufficient capability in retaining talented employees. All of these mechanisms are very context-specific and the negative effects of TM practices on performance are likely to occur due to the lack of capability of the SMEs in implementing these so-called high cost strategy.

The first mechanism through which TM practices implementation would negatively influence financial performance is due to the "too-much-talent" effect that emerges from excessive number of talented employees in the organisations. Even though attracting talented employees would have a positive influence on financial performance, too many talented employees recruited into the organisation may lead to negative effects on performance especially in the context of smaller organisations. These talented employees only facilitate performance up to a certain point. After the certain threshold, the benefits of having more talented employees decrease, turning negative and detrimental to performance (Swaab et al. 2014). This further leads to curvilinear relationship between TM practices and financial performance because teams/organisations with too many dominant talented individuals create conflict over other employees that ultimately undermines performance (Bendersky & Hays 2012).

Furthermore, the too-much-talent effect is more prominent in the context of SMEs, as high level of interdependence between employees in smaller organisations may have negative effects on financial performance (Kor & Leblebici 2005a; Swaab et al. 2014).

The second mechanism through which TM practices start to negatively influence financial performance is through excessive training and development cost. Although initially the development of employees' skills and capabilities contribute positively to the relationship between TM practices and financial performance, at high level of TM practices, the cost of training and development effort increases beyond a threshold, its benefits in term of increased financial performance are likely to diminish. Higher training costs reduce the net benefit from better employees' skills and capabilities. Theoretically, this is consistent with the too-much-of-a-good-thing (TMGT) effect as it occurs when an initially positive relation between TM practices and financial performance turns negative when these practices were taken too far, such that the overall relation becomes non-monotonic (Pierce & Aguinis 2013). To further understand TMGT effects, the ABC framework (Busse et al. 2016) suggests TM practices as the antecedents (A), financial performance as the benefit (B), training and development as the cost (C), and the difference between benefits and cost can be labelled as success (S). As in the case of the present study, at higher TM practices values, the incremental cost from training and development are greater than incremental benefits, so further investment in TM practices implementation is no longer desirable for the organisation that leads to TM – financial performance curvilinear relationship.

The curvilinear relationship between TM practices and financial performance is also negatively influenced by the level of human capital losses through employees' turnover. This is the third mechanism. RBT suggests that as talented employees'

voluntary turnover rates move from low to moderate levels, SMEs will lose their inimitable source of advantage, resulting in a decline in performance. In addition, resources that are highly 'inimitable' have negative influence on financial performance (Nason & Wiklund 2015). RBT arguments can also be used to describe investment in TM practices to be contributing in elevating the value and rareness of talented employees, however, human capital losses are more damaging to financial performance once this initiatives are taken. Groysberg et al. (2008) suggests minimising the portability of certain talent positions in order to retain those individuals as a source of sustaining competitive advantage. Losing these talented employees give negative impact to financial performance as replacing these employees are always costly and difficult because the 'pool of talents' is only so deep until they have to poach them from competitors. Furthermore, in the context of SMEs, competition with large organisations would elevate the likelihood of getting the best talent in the labour market.

Unlike other organisational resources, employees can choose to leave the organisations at their will (Coff 1997). Talented employees' turnover is a significant cost for organisation because the organisations have invested in training and development efforts that elevate their level of inimitability. Although one of the aims in TM practices is to retain these talented employees, organisation could not control and prevent them from leaving the company. Hence, human capital losses through talented employees' turnover deplete return on investments and negatively affect financial performance. Not only the cost of losing these employees negatively affects financial performance but also the financial cost of replacing these workers and during the period of adjustment of these newly hired employees. These are all financial cost of

resource accumulation efforts due to human capital losses through which TM practices negatively influence financial performance at high level of TM investment.

Finally, although employees' engagement do act as the mechanism through which TM practices positively influence financial performance, at higher level of engagement through financial rewards and benefits, the incremental costs are greater than the incremental benefits of this TM practices. Too much emphasis on financial incentives are likely to create budgetary pressures. SMEs may face constraints in improving employees' engagement by simply increasing financial incentives due to the following reasons: (1) an increase in financial incentives and benefits to employees may outweigh the expected increase in financial performance; (2) extrinsic motivations such as financial benefits and rewards may crowd out employees' intrinsic motivations. Hence, TM and financial performance are linked through a curvilinear relationship underpinned by a looser talents' engagement and a lack of motivation. Taken together, these arguments suggest that, beyond a critical point, the relationship between TM practices and financial performance is characterised by diminishing and eventually negative returns. Therefore, all of these mechanisms through which TM practices influence financial performance, indicate a curvilinear relationship. Thus, the following hypothesis would be proposed.

H1 (a): The level of TM practices implementation in SMEs has a curvilinear (inverted U-shape) relationship with financial performance.

3.2 Talent Management and Innovation Performance

Innovation performance refers to the introduction of products or services that are new to the organisation. It originates from the accumulated know-how, which forms the base

for developing new ideas; that is the higher the depth of the knowledge base, the higher the innovation. The accumulated know-how and the knowledge base are embedded in human capital that enables organisations to enhance distinctive competencies and discover innovation opportunities. Creativity is a source of innovation and successful transformation of creative ideas into practical innovative products or services is possible through TM practices. TM practices can influence and modify the attitudes, capacities and behaviours of employees to innovate and it plays a crucial role in nurturing the necessary conditions for catalysing and channelling individuals towards the development of innovation activities. This study proposed that the mechanisms through which TM practices may influence the innovation performance of SMEs would be through its impact on attracting talents with special skills and innovation capabilities, dynamic innovative team, high performance work system (HPWS), and motivation. Yet the direction depends on the extent to which SMEs engage in the level of TM practices implementation in the organisation. Increasing the extent of TM implementation from low to intermediate levels would allow SMEs to enhance their innovation performance by attracting, engaging and retaining high quality people to build innovation.

The first mechanism through which TM practices positively influence innovation performance is through attracting experienced talent with specific skills and capabilities for innovation into the organisation. Innovation is a complex task, which requires high technical capability through knowledge-intensive positions. For example, Kim et al. (2014: 96) have explored the unique problem in attracting, developing, retaining, and transferring the knowledge of engineers, whose abilities are critical for innovation by defining "technical talent as the most talented technical and professional employees who rely on professional judgement or specialised training to perform their

work". SMEs need to attract highly experienced talented employees into the organisations for better innovation performance, as they do not have the ability to develop such technical talent internally. They need to attract talent with the required skills and capabilities for innovation that improves organisational innovation capability as a whole. Thus, innovation performance is achieved when these talents' productivity and collaboration are combined with the productivity of others in the organisation that leads to positive relationship between TM practices and innovation performance.

The second mechanism through which TM practices positively influence innovation performance is through dynamic innovative teams. The performance of talented employees is found to be better when the innovative team consists of employees ranging from highly talented employees such as scientists or technical engineers to lower skilled employees who often perform supporting roles. Grigoriou & Rothaermel (2013) introduce "relational stars" as a valuable resource for innovation performance. The collaboration between talent and non-talents in an innovation team highlights the social and collaborative nature of their individual capabilities. The presence of talented employees in the team can be translated to organisational level innovation performance because collaborative skills in combination with individual productivity matters and that individuals with extreme collaborative behaviour affect not only their own performance but also the performance of other employees as a whole. These employees (i.e., relational stars) can become the seeds of innovation performance.

Working with talented employees in a team allows existing employees to broaden their range of skills and competencies and enhance their contribution (Grigoriou & Rothaermel 2013). These talented employees are likely to spawn a

diversity of ideas and commit to more innovative behaviours, strengthen the positive relationship between TM practices and innovation performance. In the teamwork, knowledge spill over from talented employees to other employees has positive influence on innovation performance. Spill over effects are defined as "...transferring their specialised knowledge to less proficient or less experienced workers" (Rothwell, 2011: 12). Since innovation is increasingly a team-based endeavour (Wuchty et al. 2007), the effects of having talented employees in a team explains the positive relationship between TM practices and innovation performance. Therefore, innovative team is one of the mechanisms through which TM practices influence innovation performance.

The third mechanism is through enabling high performance work system (HPWS). HPWS is a human resources practice that SHRM theorist considers as performance enhancing. According to RBT, an organisation can develop competitive advantage not only by acquiring but also by developing, combining or more effectively deploying its resources to add unique value (Barney 1991; Molloy & Barney 2015). Theoretically, HPWS acts as the mechanism through which TM practices positively influence innovation performance when this system develops organisations' ability to configure value-adding resource bundles that differentiate the organisations from their competitors. Following this line of reasoning, it is believed that executing HPWS can enhance employees' skills and capabilities, thus contribute to higher level of work motivation which, can collectively boost innovation performance (Becker et al. 1996; Combs et al. 2006; Messersmith & Guthrie 2010). HR practices such as incentive compensation, training, employee participation, selectivity, and flexible working environments (Huselid 1995) could be utilised to increase employees' knowledge, skills

and abilities, empower employees to leverage their capability for organisational benefit, and increase their motivation to come out with innovative ideas. The result is greater job satisfaction, lower employee turnover, higher productivity, and better decision making, all of which help improve innovation performance (Becker et al. 1996). In the context of this study, HPWS would refer to "as a set of best practices, with the potential to boost innovation performance by developing a more talented and committed workforce" (Kintana et al. 2006: 71). Furthermore, all practices that form HPWS, may be particularly useful for SMEs that need to encourage creativity, exchange of ideas, creating new knowledge that positively contribute to innovation performance. Innovation requires employees to have high level of involvement and participation. Since innovation process is complex and lengthy, organisations should emphasise the importance and value of innovation through HPWS initiatives. HPWS practices, viewed to be redundant with TM practices, would include selective recruitment, stability in the employment relation, compensation schemes linked to group performance, above-average compensation, flexible job-rotation, and fair treatment through all organisational levels (Boxall 2012). Therefore, the implementation of HPWS especially in the context of SMEs acts as one mechanism through which TM practices positively influence innovation performance.

The fourth mechanism through which TM practices positively influence innovation performance is the creation of a motivational environment for new knowledge creation. In order to increase the motivational level of employees in the organisation, more financial budget allocation for benefits and rewards would motivate employees to come out with new innovative ideas. This compensation is likely to motivate and also increase competition between employees in the organisation to

contribute for innovation. Innovation performance is improved in SMEs if organisations have employees with high capabilities to innovate or in other words "knowledge workers". These employees (i.e. knowledge workers) is defined "as a person with the motivation and capacity to co-create new insights and the capability to communicate, coach, and facilitate the implementation of new idea" (Horwitz et al. 2003:23). Therefore, it is suggested that TM practices are important in managing the talented knowledge workers and rewarding employees could increase their motivation to innovate and elevate organisation innovation performance.

However, all these four mechanisms would only positively influence innovation performance at low and moderate levels of TM practices implementation. The relationship between TM and innovation performance may turn negative at high level of implementation especially in the context of SMEs. As TM practices implementation in the context of SMEs increases beyond a threshold, its benefits in terms of increased innovativeness are likely to diminish and excessive TM can even hinder SMEs' ability to introduce new products and services. The first mechanism through which TM practices negatively influence innovation performance at high-level of TM implementation is the negative effects that emerge from attracting too many experienced talented employees into the organisation. The belief that employees with more experiences contribute to better innovation performance is proven to be not always the case. Theoretically, Sturman (2003) meta-analysis study indicate an inverted U-shaped relationship between employees' experiences and innovation performance. Experienced employees that have been in the industry for many years may accumulate experiences but lead to lower level of performance in the long run. Hence, the belief that hiring experienced employees would help to improve innovation performance can

sometimes be a challenge as skilful employees need some time to adapt with new organisation. This argument is further supported as talented employees who switched employers experienced an immediate decline in performance that persisted for at least five years (Groysberg, Lee, et al. 2008; Groysberg, Sant, et al. 2008). The research further emphasises the more prominent negative effects of TM on innovation performance if these talented employees move from large organisations to less capable organisations like SMEs. This is more significant to innovation as the accomplishment of new product and services not only need innovative employees but also organisational capabilities such as information and communication technology and network capability (J. Wales et al. 2013).

The second mechanism is the "too-much-talent" effects. Swaab et al. (2014) argue that having more talented employees often facilitates group performance…but only to a point. Beyond this point, the marginal benefits of more talented employees will decrease and eventually turn negative. That is, at some point there will be "too-much-talent" effect that will impair innovative performance. This is more significant in the context of smaller organisations. Employees are more interdependent with each other especially in innovative teams. Unfortunately the more talented employees are involved in a team, the higher the possibility of conflict especially if these employees have similar expertise. Recent evidence suggests that individuals prefer to be differentiated rather than similar in status relative to their colleagues (Groysberg et al. 2011). They find that the percentage of talented employees in the team had a decreasing marginal benefit on team effectiveness and the relationship beyond a certain point was negative. The blind pursue of the "more is better" approach in creating innovative teams that consists of talented employees can lead to unintended collective consequences like

a bit of ego that can lead to conflicts and contribute to dysfunctional dynamics. In addition to that, Groysberg, Sant, et al. (2008) found negative effects on innovation performance if talented employees move to a new company without taking along their team from previous company. These employees need more time to adapt and contribute to innovation. It is common for new employees to bring along their trusted team members to the new organisation, as the learning curve is higher for new employees joining a new team or organisation. In addition, the early investment on new employees may not produce substantial enough benefits to offset the costs of early induction programme.

The third mechanism through which TM practices negatively influence innovation performance at high level of TM practices especially in the context of SMEs is their own capability to implement HPWS. The present researcher would disagree with Klaas et al. (2012: 490) who argue that "much of the theory used to explain the positive effects" of HPWS on performance in large organisations are also relevant for SMEs. Benefits associated with HPWS cannot be obtained without cost. Although HPWS can increase the organisations' ability to attract, select, develop, and retain employees with superior knowledge, skills, and abilities, these benefits associated with HPWS cannot be obtained without cost base on arguments of cost–benefit trade-offs and diminishing returns of HPWS (Bryson et al. 2005). The implementation of TM practices through HPWS involves negotiating, monitoring, evaluating, and motivating employees which increases bureaucratic costs (Chi & Lin 2011). Also, organisation may invest a large amount of resources in complicated implementation of HPWS like recruitment of high skilled employees, which will raise administrative costs in term of salary and benefits offered. Furthermore, in high level of task uncertainty and

complexity environment such as SMEs, results-oriented appraisals and performance-contingent pay systems, and monitoring the performance outcome are also costly. According to the law of diminishing returns, even when HPWS investment yields significant benefits, these benefits may be offset by the additional costs.

Based on the aforementioned arguments, smaller organisations like SMEs are still incapable to gain full benefits in elevating innovation performance through HPWS. The fuller implementation of HPWS leads to improvements in innovation performance as the technological intensity of the organisations increase. This increment of technological intensity is also a costly investment which smaller organisations like SMEs are less likely to invest. Kintana et al. (2006) found that the main effect of HPWS is positively influencing performance in the high-tech sub-sample, and slightly significant in the mid-tech sub sample. They also found that the relationship between HPWS – performance is not significant in the low-tech sub-sample. The result indicates that the fuller application of HPWS leads to improvements in innovation performance as the technological intensity of the organisations increases. Since increment of technological intensity is costly, up to a certain extent the benefits gained from high level of TM will decline which leads to the curvilinear relationship between TM practices and innovation performance.

The fourth mechanism is when there are too many incentives given to employees. Although giving rewards and benefits to employees are popular approaches in retaining talented employees, these incentives may crowd out employees' intrinsic motivation. Even though highly motivated talents do contribute to positive relationship on TM practices and innovation performance, too much of rewards and benefits will lead to curvilinear relationship. Financial incentives would always motivate employees

to come out with innovative products and services but organisations may 'over-invest' in allocating too much money in motivating employees. Innovation is a complex process that needs technological capability and technical expertise in realising the innovative ideas. All these other elements for innovation are costly for smaller organisations. It needs the right level of attention and effort to bring them into implementation. Consequently, a poor allocation of incentives can lead organisations engaging in too many (or too few) ideas to be exploited for innovation. This will have negative consequences on innovation performance and lead to curvilinear relationship between TM and innovation performance. Hence, through attracting talent with special skills and capabilities, having a dynamic innovative team, implementing HPWS, and higher employees' motivation are the mechanisms through which TM practices improve innovation performance up to a certain extent and turn negative at some point that leads to curvilinear relationship. Thus, the following hypothesis would be posited.

H1 (b):The level of TM practices implementation in SMEs has a curvilinear (inverted U-shaped) relationships with innovation performance.

3.3 Knowledge Management Strategy and Financial Performance

KM strategy relates the organisational knowledge to the design of organisational structure that promotes knowledge, organisational strategy, and the development of knowledgeable talent. In a sense, strategic KM emphasises people as the repository of tacit knowledge that is highly inimitable. KM, as a management practice, needs sufficient budget allocation for realisation. It takes time and resources to endure good technological support for sharing knowledge, and provide rich opportunities for knowledge exchange. The mechanisms through which KM strategy influence financial performance in the context of SMEs are through its impact on knowledge sharing

between employees, having a culture that encourages knowledge creation, and network capabilities.

The first mechanism through which KM strategy positively influences financial performance is through effective knowledge sharing. Knowledge sharing is the exchange of knowledge between individual to allow the recipient to apply or reshape the knowledge gained for a new context (Bechina and Bommen 2006). The success or failure of KM strategy depends on how effectively an organisation's members share and use their knowledge especially in sharing the know-how and know-what between employees. Knowledge sharing is critical for financial performance as it leads to faster knowledge deployment. Through knowledge sharing, valuable tacit knowledge can be shared and discussed. Especially in the context of SMEs, the flatter organisational structure, open culture and less bureaucracy encourages knowledge sharing between employees. At low and moderate level of KM strategy implementation, knowledge sharing can increase employees' productivity as more relevant knowledge and information are available for the benefits of the organisations.

The second mechanism is through the ability of the organisations to have a culture that encourages knowledge creation. Nonaka et al. (2000) defines knowledge creation as the development of new ideas through human interactions of explicit and tacit knowledge. In accordance with theory of knowledge creation, knowledge is created from employees; tacit knowledge that makes explicit for the benefit of the organisation (Lewin & Nonaka 1994). Knowledge creation helps improve operation and enable new opportunities to be identified (Wadhwa & Hall 2006; Argote et al. 2003). Theoretically, leaders (i.e., the Senior management) play a key role in "lead[ing] the organization to…create knowledge by providing certain conditions." (Nonaka et al.

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2000: 22). In the context of smaller organisations, Senior management play a crucial role in knowledge creation and the financial performance implication of this process (Caridi-Zahavi et al. 2016). With knowledge creation capabilities, SMEs can improve their knowledge base, either tacit or explicit knowledge that are essential for the overall performance of the organisations. Hence, the above evidence supports knowledge creation as the mechanism through which KM strategy positively influences financial performance in SMEs.

The third mechanism through which KM strategy positively influences financial performance is through enhancing network capabilities. Network capability refers to the organisation's ability to use relationships to procure resources held by other organisations. Despite SMEs' size-related liabilities, network capabilities act as an important mechanism that can allow small organisations to better structure and bundle their resources and reap benefits from KM strategy, internally and externally. Network capabilities are not about having access to network but also for SMEs to successfully utilise and manage its networks. Network capabilities improve organisation's inter-organisational relationships that enable them to access external resources. The present researcher views that organisations' network capability would act as the positive mechanism in understanding the nonlinearity (as opposed to linearity) in financial performance of smaller organisations. This helps explain the non-significant main effect of manufacturing competitive capabilities (i.e., price, delivery dependability, flexible innovation, and quality capabilities) in the context of Malaysian manufacturing SMEs on financial performance as observed by (Ho et al. 2016). Network capability is divided into four main dimensions that justify its role in impacting the marginal costs and benefits associated with increasing level of KM strategy on financial performance

in the context of Malaysian SMEs. These dimensions as suggested by Walter et al. (2006) are coordination activities in collaboration with other companies, relational skills, partner knowledge, and internal communication in order to assist the transfer of knowledge between collaborators. Viewed together, all these dimensions of network capability explain the mechanism in which, network capability acts as the mechanism through which KM strategy positively influence financial performance in the context of smaller organisations.

However, all the positive effects of the above mechanisms are likely to have negative effects at high level of KM strategy implementation that lead to $KM - financial$ performance curvilinear relationship. The first mechanism that contributes to the negative effects on financial performance at high level of KM strategy implementation is the unintended knowledge transfer to competitors. Initially, in the context of SMEs, knowledge sharing will only positively influence the relationship between KM strategy and financial performance up to a certain extent, and then it might turn negative due to unintended knowledge transfer to competitors. This knowledge transfer is likely to happen through tacit knowledge of employees that move to other companies as they bring along with them all the knowledge. All the ideas, gained and developed from previous companies are transferred to the competitors' knowledge base. When a particular employee is hired and fired, transaction in employee's knowledge occurs from previous organisation to the new one (Groysberg, Sant, et al. 2008). This unintended knowledge transfer increases the likelihood of the organisation to lose its market share to competitors. In addition, this also leads to information leakage such as important marketing strategy that will benefit competitors. This leads to the potential

of negative effects at high level of KM strategy implementation on financial performance that leads to an inverted U-shape relationship.

The second mechanism is the negative effects of too many ideas for the organisations to manage and choose between. With attractive motivating strategy, employees compete to come out with new knowledge creation and new ideas. Given too many ideas, maybe few of these ideas are taken seriously as SMEs are incapable to implement too many ideas at one time. Furthermore, the management might choose the wrong ideas that would not benefit the company from amongst all the ideas developed in the knowledge creation process. This condition reduces the net benefit of knowledge creation and increase the net cost of mistakes and ideas overload.

The final mechanism that contributes to the negative effects on financial performance at high level of KM strategy implementation is the unintended spillovers of valuable knowledge from excessive networking. Due to the potential of unintended knowledge spillover, networking strategies entail important risks in terms of appropriating value, which can hamper financial performance. Transaction cost theory provides theoretical foundation for the value appropriation risks of networking strategies. The likelihood in the emergence of opportunistic actions occurs when competitors collaborate for realising new business potential and strategy. According to knowledge spillover literature, knowledge can be easily transferred from the organisations that produce the knowledge to other organisations that can capture the benefits of knowledge usage without sharing the costs of its creation. At high level of KM strategy implementation, the above-mentioned arguments support the negative impact of excessive networking as the reason supporting curvilinear relationship between KM strategy and financial performance.

To sum up, these arguments suggest that, beyond a critical point, the relationship between KM strategy and financial performance is characterised by diminishing as well as negative returns. Hence, this study would propose the following hypothesis:

H2 (a): The level of KM strategy in SMEs has a curvilinear (inverted U-shaped) relationships with financial performance.

3.4   Knowledge Management and Innovation Performance

KM is one of the popular approaches for improving the organisational innovation performance (Clarke and Cooper, 2000; Chen and Wei, 2008; Fuller et al., 2012; Kong et al., 2012; Luo et al., 2012). The theory proposed by Nonaka and Takeuchi (1995) on organisational knowledge creation consists of knowledge as the main ingredient of innovation and organisational competitiveness. KM also acts as the coordinating mechanism for resources to be transformed into capabilities. This coordinating mechanism is required to ensure people not only know how to do work but also aware of the current information and knowledge that are available in the organisation. Therefore, in order to sustain the relationship between KM strategy and innovation performance, it could be argued that the mechanisms through which KM strategy would positively influence innovation performance is through its impact on absorption capacity, external search strategy, and innovation capability.

First, KM strategy influences innovation performance through knowledge absorption capability. Knowledge absorption refers to the identification, acquisition, and absorption of knowledge into an organisational repository of knowledge-based resources. This current study would build on the knowledge-based view of the firm

(Kogut & Zander 1992; Nonaka & Takeuchi 1995; R. M. Grant 1996) to advance RBT (Barney 1991; Barney 2001; Barney & Wright 1998). The sources of knowledge for innovation can be internal and external. To date, the recognition of external sources of potential valuable knowledge, the transfer of such knowledge into the organisation and the utilisation of the knowledge, perhaps in collaboration with external knowledge sources would positively contribute to better innovation performance.

In the context of smaller organisations like SMEs, this study argues that engagement in learning activities by senior management or owner-managers is one of the processes through which SMEs absorb external knowledge (Wee & Chua 2013). KBV suggest that learning provides the opportunity for senior management to acquire and develop managerial resources that are critical for value-creating processes such as innovation. It is more relevant in the context of smaller organisations as senior management have the critical role in steering the strategic directions of the business in contributing to innovation (Hambrick 2007). Open innovation enhance collaboration with other organisations that improves the capabilities to innovate.

The second mechanism is through effective search strategy. Product search can be defined as an organisation's problem-solving activities that involve the creation and recombination of technological ideas' (Katila and Ahuja, 2001: 1184). The search process involves investments for the different type of knowledge sources either exploiting internal sources or exploring the external environment like the availability of technological opportunities and competitors' search strategy. These mechanisms are very important especially in the context of SMEs where they compete in a highly dynamic environment. Relying on capability-based view arguments, collaboration with competitors stimulates value creation through fostering the recombination of

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complementary knowledge (Ritala & Hurmelinna-Laukkanen 2013). To some extent, smaller organisations need to cooperate even with their competitors as a viable strategy to stimulate the development of new products and this strategy is known as 'coopetition'. Organisation's ability to acquire knowledge from external sources and to protect its innovations and core knowledge against imitation are relevant in increasing innovation outcomes of collaborating with competitors.

The third mechanism through which KM strategy influences innovation performance is through organisations' innovation capability. This is more relevant in the context of SMEs that are operating in a fast-changing environment. In order to sustain innovativeness in a dynamic environment, SMEs must have the ability to renew its knowledge base (Jantunen 2005). According to dynamic capability point of view (Teece et al. 1997), they consider the organisation as essentially a knowledge processing and utilising entity to exploit existing assets and build up new capabilities. Organisational capabilities in sensing weak signals and seizing opportunities (Teece 2000) essentially contribute to innovation performance and long-term competitiveness.

However, initially the positive effects contributed by the aforementioned mechanisms on KM strategy and innovation performance relationship decline and turn negative at high levels of KM strategy implementation. The supporting arguments will be explained.

First, attention-based view theory support the negative effects of too much openness on innovation performance. Innovation becomes possible when the organisation allocates attention to the recognition, assimilation, and exploitation of new knowledge residing or hiding inside and outside the organisation. Despite the potential

positive effects of open and close innovation strategy, the "benefits" to openness are subject to decreasing returns (Laursen & Salter 2005: 132). For example, 'coopetition' (i.e., collaboration with competitors) leads to little allocation of attention and control over core competencies. Meanwhile, since innovation is a resource-hungry endeavour, the need to keep up with the dynamic challenges of the increasing speed of innovation time makes close innovation as an irrelevant strategy. Hence, the right "balance" between internal and external sources of knowledge and information for innovation is essential in maximising the "firm's rent stream from innovation over time" (Kim et al. 2016; Farndale et al. 2014: 80). Therefore, the senior management play the important role in steering the right balance of KM strategy especially those related to internal and external search.

In addition to the above arguments, even though senior management are the "institutional repositories of knowledge" in SMEs as they play the dominant role for innovation, their role cannot be over-emphasised. Their engagement in learning activities or knowledge absorption can only have positive effects on innovation performance up to a certain extent. In the context of SMEs, the managerial capability of the senior management can only provide the foundation for innovation. The influence of the senior management, however, decreases once the organisation has reached a certain innovation level. Beyond this point, factors, such as technological capability, access to external funding or talented employees with special skills might become more important. Senior management are believed to be the innovation initiators as normally the ideas for innovation are endorsed by them (Wee & Chua 2013).

The second mechanism is through over-searching for new ideas externally. External search strategy like coopetition mechanism will negatively influence

innovation performance, as SMEs are incapable to have both internal knowledge sharing and formal knowledge protection mechanism in their organisations. Without these mechanisms, there is a negative effect on innovation performance. Smaller organisations are capable to implement internal knowledge sharing but not a formal knowledge protection mechanism, which is costly. Therefore, at high level of KM strategy, the relationship between KM and innovation performance turns negative and leads to a curvilinear relationship.

Third, according to attention based view theory, an organisation's attention is a limited resource that can be only be allocated to a relatively small number of innovation ideas at the same time. Therefore, at high level of KM strategy implementation, there may be too many ideas for the organisation to manage and choose between. Too many ideas require organisations to make the right choice in exploiting the best idea. Wrong decision in choosing the best idea will lead to negative effects on innovation performance. Similarly, many innovative ideas may come at the wrong time and in the wrong place to be fully exploited. The innovative ideas may contribute to positive innovation performance if during the time the idea is suggested; organisation has the capability and sufficient resources to implement the idea.

However, if the new idea arises at a wrong time or an organisation is in a situation of resource constraints, any brilliant idea will be of no value and give negative effects if it is implemented. Since there are so many ideas, few of these ideas are taken seriously or given the required level of attention or effort to bring them into implementation. The attention allocation problem is supported by attention-based view theory and suggests that a poor allocation of managerial attention can lead to organisations engaging in too many (or too few) efforts. In summary, all these reasons

explain the mechanisms through which KM strategy negatively influence innovation performance in SMEs. Therefore, it would be expected that the link between KM strategy and innovation performance in the context of SMEs is as follows:

H2(b): The level of KM strategy in SMEs has a curvilinear (inverted U-shaped) relationships with innovation performance.

3.5 Moderating Effects of Senior Management's Perceptions on the Strategic Importance of HR

Based on attention-based view and resource orchestration theory, both highlights the central role of managerial attention. From these two theoretical insights, this study is focusing on the attention paid by senior management through their perception on the strategic importance of HR as the sole moderator in this PhD research. Indeed, Ocasio (1997) suggested that the greatest scarcity in organisations is not in material resources, but in managers' cognitive abilities; that is managerial attention. The general logic is that at high level of senior management's attention or focus on strategic importance of HR, more budget allocation will be put for TM and KM implementation. In the long run, these investments will positively influence the relationship between TM/KM and organisational performance relationships. Hence, attention-based view theory (Ocasio 1997; Ocasio 2011) supports the argument on Senior management's 'attention' on strategic importance of HR on TM/KM – performance curvilinear relationships.

Consistent with resource orchestration theory, the efficiency and effectiveness with which smaller organisations like SMEs structure, bundle, and leverage their resources are dependent on the level of Senior management's perception on strategic importance of HR (Sirmon et al. 2011). This theory encompasses managerial action related to the development and realisation of strategic resources throughout the

organisations. In order for SMEs to take full advantage of strategic resources, managers at all levels of the organisation must work in concert of each other with CEO and top management orchestrating the strategy.

Given that the primary strategic goal of smaller organisations is the effective utilisation of their relatively limited resources in relation to TM-financial performance, the question of curvilinearity arises on whether the potential costs of TM practices implementation outweigh the potential benefits associated with better performance they create. As further emphasised in a McKinsey report; Guthridge, Komm, and Lawson (2008), organisations that put wrong attention between HRM and TM negatively influence performance.

> When companies do make **talent** a **priority**, they often fall into another trap: focusing narrowly on HR systems and processes, which divert attention from the place where most of the obstacles lie: people's heads (Guthridge et al. 2008: 54).

In this study, it is believed that the answer is contextual-dependent upon the organisations' ability to orchestrate its various resources. Hence, SMEs provide a particular relevant context for exploring resource orchestration effects since these companies are frequently constrained by 'liabilities of smallness' resulting from (1) their limited levels of slack resources and (2) potential inefficiencies in using their resources. As such the ability of senior management to orchestrate their talents in the organisations are likely to represent a primary driver in enhancing and/or diminishing performance levels within these organisations.

Senior management's attention may alter the proposed inverted U-shaped relationship between TM/KM strategy and organisational performance. Resource orchestration is posited to be the highest at the top level management as they focus on

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organisation as a whole (Sirmon et al. 2011). Researchers have noted that Senior management will have their greatest impact on structure in smaller organisations because Senior management make most of the decision, directly influence managers and tightly control and channel operations (Miller 1991; Barrick et al. 2015). In addition, studies have shown that senior management acts as the foundation of innovation especially in small organisations where managerial learning acts as a facet of knowledge absorption (Roxas et al. 2014). The following are explanations and hypotheses development for Hypothesis 3(a), Hypothesis 3(b), Hypothesis 4(a), and Hypothesis 4(b).

Moderating Effects of Senior Management's Perceived Strategic Importance of HR on Talent Management Practices and Financial Performance Curvilinear Relationship

Central to this approach is to highlight senior management's attention and how this attention is allocated. Consequently, the ABV theory suggests that a poor allocation of managerial attention can lead to organisation like SMEs engaging in too many (or too few) management strategy that can influence the relationship between TM practices and financial performance. Building on the idea that TM practices do influence financial performance, this relationship depends on the extent or level of attention given by the senior management when they perceive the strategic importance of HR in their organisation. The level of attention given by senior management can be viewed as the senior management's perceptions on the strategic importance of HR and this can be divided into three levels, namely, low, moderate, and high. Logically, the more important strategic HR is perceived by senior management, the more attention is given on the implementation of TM practices in the organisations. However, with regard to

the link between the perception of senior management and organisation capability in the context of SMEs, high level of attention may negatively influence TM practices and performance curvilinear relationship. This is because the liability of smallness may reduce the capability of the SMEs to develop superior management of the human talent described by Boxall (1998: 267) as 'human resource advantage'.

This present study proposed that the mechanisms through which senior management's perception on the strategic importance of HR would positively influence TM practices and financial performance curvilinear relationship. This could be possible through its impact on the following: strategically attracting the right number of talented employees into the organisations; deciding the right number of talented employees required; balancing the costs and benefits from TM practices implementation; minimising training and development costs and fostering collective organisational engagement.

According to resource orchestration theory, the efficiency and effectiveness with which SMEs structure, bundle, and leverage their resources may alter the proposed inverted U-shaped relationship between TM practices and financial performance. The first mechanism through which senior management's perception on the strategic importance of HR would positively influence TM practices and financial performance curvilinear relationship could be when more focus would be directed towards strategically attracting the right employees into the organisations. At low and moderate levels of senior management's perception on the strategic HR, less attention would be given to the selection of the right talented employees for the organisations. At high level of perception on the strategic importance of HR, more attention would be given by senior management of selecting the right talent for the company. With the belief that

the right talented employees would have the capability to create a better pool of employees, hence, resource orchestration and resource management arguments emphasise that the senior management's actions related to the realisation of strategic resources (i.e., talent) throughout the organisation are critical for better organisational performance (Sirmon et al. 2007; Sirmon et al. 2011). However, since recruiting talented employees is a costly initiative as it needs to be done thoroughly, the positive influence of senior management attention on this particular TM practices is likely to occur at low and moderate levels of attention. Nevertheless, at high level of attention, too much focus on recruitment of talent may increase the negative influence of senior management's attention on TM practices and financial performance curvilinear relationship.

Secondly, senior management play the role in deciding the right number of talents that are required for the organisations (Greer et al. 2015). They have the bird's eye view on the organisation and can prevent the "too-much-talent" effects from occurring. With the right number and mixture of talents in the organisation, senior management can nurture all employees to become 'talents' in the organisations (Meyers et al. 2013). This is possible as SMEs have the advantage of smaller number of people. Hence, it is expected that increasing senior management's attention enhances the positive effects of low and moderate levels of TM practices and reduces the negative effect of high level of TM practices implementation.

The third mechanism through which senior management's perception on strategic importance of HR positively would influence TM practices and financial performance curvilinear relationship could be through their capability to balance between the costs and benefits of TM practices on financial performance in SMEs.

Although at low level of TM practices implementation, lesser attention and budget allocation would be given on human resources. CEOs and senior managers have the capability to reduce the cost of TM by elevating the level of attention given to talented employees. Being senior managers in small organisations, senior management of these SMEs can utilise job rotation type of training or directly mentoring these talented employees for better performance. They would have the ability to reduce the marginal cost of excessive budget on training and development activities and increase the benefits gained from new talented employees' skills and capabilities. These potential employees could get more attention from senior management in developing the required skills and capabilities in the company. At high level of senior management's attention on strategic importance of HR, they would have the role in advocating fit between organisational strategy and employees' skills and capabilities based on the assumption that "different strategies require different types of people….for effective performance" (Olian & Rynes 1984:171). The available skills and capabilities can be utilised and exploited in elevating financial performance through the interaction effect of senior management's perception on the strategic importance of HR on TM–performance curvilinear relationship.

Fourthly, at high level of senior management perception on the strategic importance of HR, senior management's may come out with less costly initiative like on-the job training and/or learning by doing (Hatch & Dyer 2004) that are proven to be more effective in developing employees' skills and capabilities especially in the context of SMEs. Utilising more employees with higher skills and capabilities, senior management may leverage these employees to meet organisational strategic needs for value creation. Thus, senior management's high perception on strategic importance of

HR has an additive and/or multiplicative flattening interaction effects in strengthening the positive curvilinear mechanism on TM practices and financial performance curvilinear relationship.

In addition to the aforementioned arguments, the fifth mechanism through which senior management's perception on strategic importance of HR positively influence TM practices and financial performance curvilinear relationship is in fostering collective organisational engagement. This is achieved through structuring and bundling talented employees to generate shared perception among them that organisational members are collectively engaged at work. The resource management model suggests that senior management's knowledge and behaviours regarding organisational strategy contingently affect collective organisational engagement based upon how effectively they orchestrate the available talented employees in the organisation (Barrick et al. 2015). High level of talents' engagement increases productivity and creates value as demonstrated by increase in financial performance. Therefore, TM-financial performance U-shaped relationship is moderated by senior management's attention through positively flattening the curve as talented employees are more collectively engaged. Therefore, the following hypothesis is posited:

3(a): Senior management's perception on the strategic importance of HR positively moderates the inverted U-shaped relationship between the extent of talent management practices and financial performance in SMEs.

Moderating Effects of Perceived Strategic Importance of HR on Talent Management

Practices Strategy and Innovation Performance Relationships

The ABV theory predicts that when senior management view a function such as HR as being important, they are likely to allocate more attention to it. Previous study found that HR involvement in strategy formulation to be positively related to perceived organisational performance (Wai-kwong et al. 2001). This moderation variable is posited to positively flatten the TM – innovation performance inverted U-curved. Therefore, senior management's perception on the strategic importance of HR is likely to affect the marginal cost and benefits of increasing level of TM practices on innovation performance curvilinear relationship in SMEs through senior management's ability in exploiting the available skills and employees' abilities for new knowledge creation and innovation; investing on the right number of talents for innovation teams; implementing team-oriented HR practices; bundling TM practices and HPWS; instilling intrinsic motivation on employees.

First, concerning the marginal costs associated with an increasing level of TM practices, senior management's attention on HR strategic importance is likely to reduce the marginal cost and increase the efficiency with which talented employees (i.e. strategic human capital) resources are bundled and leveraged. At a high level of senior management's attention, more emphasis is given in developing talents' skills and capabilities. Even though it is proven that too high of a budget allocation on training and development negatively affects innovation performance, senior management's attention helps moderate the curvilinear relationship through implementing the strategic fit in attracting the skills and capabilities required either through internal development or externally recruitment. With these employees, senior management could exploit

those skills and capabilities for new knowledge creation and innovation. Thus, at a high degree of senior management's emphasis on strategic HR there is a positive relationship with perceived performance (Chadwick et al. 2015; Greer et al. 2015), which eventually leads to a flattening of TM – innovation inverted U-curved.

Second, low and moderate levels of senior managements' perception on the strategic importance of HR would positively influence the relationship between TM practices and innovation performance through better selection in investing on the right number of talents for innovation team. At high level of senior management's attention, too much focus would be given to the selection of the best talent in the market especially those with high technical skills and knowledge for innovation. As previously discussed, the right number of talents in innovative teams would be essential for SMEs in order to prevent the "too-much-talent" effect. Senior management would have the ability to strategically manage the innovative team by attracting and mixing the right number of talents required with other employees for better innovation performance. The positive influence of senior management's attention would occur at low and moderate levels of attention and negative influence on TM–innovation performance curvilinear relationship would likely occur at high level of senior management's attention on staffing and recruitment.

Third, senior management with a high-level of perception on the strategic importance of HR are likely to implement team-oriented HR practices in order to strengthen team members' motivation and to facilitate the different perspectives in teams, resulting in better overall team innovation (Chi et al. 2009). For example, team-based rewards, teamwork design, participation programmes, feedback system, and team training can be utilised to engage in teamwork and to improve members' teamwork

skills and capabilities. Team members in team-oriented HR practices are more motivated to embrace individual differences and consider diversity as a valuable team asset (Jehn & Bezroukova 2004). As a result, team members are more likely to value different viewpoints, which can reduce potential bias and conflicts within teams (Ely 2004). In aggregate, the implementation of team-oriented HR can increase team members' motivation, skills and capabilities, which in turn promotes the advantages and lessens the disadvantages associated with TM practices. Thus, the interaction effects of senior managements' perceived strategic importance of HR has a positive influence on TM practices and innovation performance curvilinear relationship. In other words, the moderating variable weakens the TM − innovation performance curvilinearity and flattens the inverted U-shaped relationship.

Fourth, senior management play an important role in positively influencing the curvilinear relationship between TM practices and innovation performance as they bundle the relevant TM practices and HPWS (Huselid 1995) for sustainable competitive advantage. Strategically, all suggested HPWS practices are the same as TM practices, defined as practices that are utilised to attract, develop, motivate, and retain talented employees in the organisations. Since, TM in SMEs are proven to be more inclusive (Festing et al. 2013), hence, the TM and HPWS are very much inter-related. In creating HPWS, the content of work systems should be largely driven by the strategic goals and values of the organisation. Therefore, in the context of SMEs, only the senior management have the power to steer towards these strategic goals. Furthermore, these TM practices must be designed around a particular strategic focus, such as innovation. This is where the role of senior management's attention on strategic importance of HR helps to align TM practices and innovation performance by creating this high-

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performance-work-system. At a higher level of senior management's attention, the TM – innovation performance curvilinear relationship is likely to be positively influenced and the inverted U-curved is flattened.

Fifth, at high level of senior management's attention, the relationship between TM practices and talents' motivation level is improved through senior management effort in instilling intrinsic motivation on talented employees. The intrinsic motivation is less costly and it has a significant effect if it comes from the senior management. For example, senior management have the ability to motivate talents through creating more flexible working environment and even 'a pat at the back'. This intrinsic motivation behaviour from the senior management has a big impact on talents' motivational level. Thus, senior management have the dynamic capability that can build, integrate and reconfigure this bundle of motivated talents and improves overall innovation performance. Thus, at high level of senior management attention, the inverted U-curve TM – innovation performance relationship is flattened, as motivated employees are more productive in innovation. This moderation variable positively influences the TM practices – innovation performance curvilinear relationship.

In summary, this study would propose that senior managements' perceived strategic importance of HR positively would influence the curvilinear relationship between TM practices and innovation performance. At high level of senior management's perception on the strategic importance of HR, employees are more likely to see how theirs' and others' roles contribute to innovation performance, which in turn, gives employees a greater collective sense of value and purpose. Senior management shape a relational context that facilitates knowledge integration and consequently innovation. When senior management pay more attention to the importance of strategic

HR, they create an even more salient culture throughout the organisation that influences how motivated, productive employees are rewarded and recognised. Senior managements' perceived strategic importance of HR enables SMEs to simultaneously mitigate the marginal benefits associated with increasing level of TM practices by more effectively and efficiently enabling the bundling of organisational resources into capabilities that can be leveraged with less resource investment. Therefore, the following two hypothesis is posited.

3(b): Senior management's perception on the strategic importance of HR positively moderates the inverted U-shaped relationship between the extent of talent management practices and innovation performance in SMEs.

Moderating Effects of Senior Management's Perceived Strategic Importance of HR on Knowledge Management Practices and Financial Performance Curvilinear Relationship

Research on RBT has begun to place more emphasis on the ability of managers (in the present study: Senior management) to extract better performance from the resources that are available to them. Resource orchestration addresses an underdeveloped aspect of RBT: the managerial role in effectively developing and leveraging resources. In this case, knowledge is the strategic resource that needs more attention from the senior management especially in the context of smaller organisations. Senior management's perception on the strategic importance of HR is likely to affect the marginal cost and benefits of increasing level of KM strategy on financial performance curvilinear relationship through emphasising knowledge sharing culture, motivational role in knowledge creation, and managing new ideas.

First, in line with resource orchestration theory, senior management's action in promoting knowledge sharing among employees escalate the development and realisation of strategic resources that contribute to better financial performance. At high level of senior management's attention, more focus on knowledge sharing between employees as one of KM initiative is believed to be strategically important for the organisation. Senior management may positively influence the KM strategy – financial performance curvilinear relationship by allocating more attention on knowledge sharing culture among employees. Internal knowledge sharing mechanism also helps the organisation to capture knowledge recombination benefits of networking and collaborating with other companies by motivating employees to internally disseminate knowledge from outside collaborators. However, employees sometimes have negative attitudes toward external knowledge especially when the knowledge source is a competitor. Therefore, senior management play an important role in conveying strong signals to employees in emphasising that intra-firm dissemination of knowledge (either internal or external) is an organisational priority.

The weight of KM within the SMEs seems to rest heavily on the senior management and they could promote knowledge sharing in the organisations. For example, senior management may take initiatives through informal knowledge sharing activities like having a morning chat with free coffee and cakes for all employees. This effort will create 'common knowledge' among employees that prevents loss of knowledge whenever an employee leave the organisation (Wee & Chua 2013). As more knowledge and information are freely shared among employees, the dynamic of the organisation is increased. Hence, senior management can utilise this advantage that positively links knowledge sharing effort and financial performance. Thus, at high level

of senior management's attention, the interaction effect of senior management perception on strategic HR positively influence the inverted U-curved relationship between KM–financial performance that makes the net benefits of KM on financial performance outweigh the costs as Senior management's attention increases.

The second mechanism through which senior management's perception on strategic importance of HR positively influence KM strategy and financial performance curvilinear relationship is through knowledge creation that has positive effects on financial performance. As previously argued in the previous section, employees need to be motivated in order to elevate the number of new knowledge creation and development of new ideas. Thus, at high level of senior management's perception on the strategic importance of HR, they could play the motivating role for new knowledge creation and ideas from employees. Since extrinsic motivation is costly, senior management could play their role in promoting intrinsic motivation which are less costly. Besides motivating employees to come out with new knowledge creation and ideas, senior management also have the potential to come out with new knowledge creation.

Not surprisingly, Wee & Chua (2013: 963) in their case study found out that in the context of SMEs, knowledge creation is centrally undertaken by the owner rather than employees when the employees from the case study SME regarded the CEO as the "product evangelist and chief architect". Furthermore, since knowledge creation leads to more new ideas, senior management have the advantage in managing this new ideas by choosing the right ideas to invest and strategically link the available ideas with organisational innovation capability. Therefore, at high level of senior managements' perceived strategic importance of HR, the curvilinear effects on KM – financial

performance flattened from the accumulated net benefits gain from higher senior management's attention.

The third mechanism is through senior management role in managing the available ideas in the organisations. Based on ABV theory, with the right level of attention given by senior management on the available ideas in the organisations, the attention allocation problem can be prevented.

> As implied by the name, the attention allocation problem is the key element in attention-based theories of the firm (Simon, 1947; Ocasio, 1997). This theory suggests that managerial attention is the most precious resource inside the organisation and that the decision to allocate attention to particular activities is a key factor in explaining why some firms are able to both adapt to changes in their external environment and to introduce new products and processes. Central to this approach is to highlight the pool of attention inside the firm and how this attention is allocated. According to the theory, decision-makers need to 'concentrate their energy, effort and mindfulness on a limited number of issues' in order to achieve sustained strategic performance (Ocasio, 1997: 203).

At high level of senior management's perception on the strategic importance of HR, high level of attention is going to be allocated in balancing right number of ideas and new knowledge for implementation in the organisations. The right level of senior management's attention allocation on knowledge creation activities prevents too-many or too-little ideas being taken into consideration for implementation. In addition, senior management also have the ability to match the available ideas with organisational innovation capability. Hence, senior management's attention on the strategic importance of HR positively influence KM strategy and financial performance curvilinear relationship through knowledge sharing culture, motivational role in knowledge creation, and managing new ideas. Based on these arguments, the following hypothesis is formulated:

4(a): Senior management's perception on the strategic importance of HR positively moderates the inverted U-shaped relationship between the extent of knowledge management strategy and financial performance in SMEs.

Moderating Effects of Senior Management's Perceived Strategic Importance of HR on Knowledge Management Practices and Innovation Performance Curvilinear Relationship

As many KM researchers argue, it is critical to concurrently capture the benefits and avoid the detrimental effects associated with KM strategy in terms of innovation performance. The role senior management are critical in the context of associating KM strategy and innovation performance especially in the context of SMEs (Wee & Chua 2013; Durst & Wilhelm 2012; Wang & Han 2011). Furthermore, Ocasio (1997: 186) argues that "What decision makers do depends on what issues and answers they focus their attention on". This will influence how senior management 'orchestrate' the available resources in the organisations.

At high level of senior management's perception on strategic importance of HR, the need of top management orchestration increases markedly when considering KM strategy and organisational innovation performance. Senior management' perception on the strategic importance of HR is likely to affect the marginal cost and benefits of increasing level of KM strategy on innovation performance curvilinear relationship through senior management's strategic decision in organising absorptive capacity, balancing internal and external search strategy, and driving innovation performance by facilitating knowledge creation processes.

The first mechanism through which senior management's perception on the strategic importance of HR influence KM strategy and innovation performance curvilinear relationship is through their managerial role in managing organisation's absorptive capacity. Absorptive capacity refers not only to the acquisition or assimilation of information by an organisation but also to the organisation's ability to exploit it (Cohen & Levinthal 1990: 131). Absorptive capacity theory supports the important role of senior management as the person stands at the interface of both the organisation and the external environment. The level of organisational knowledge absorption in SMEs depends on senior management's initiative to search for new knowledge externally and transfer the external knowledge and information through internal knowledge sharing. In a case study done on KM processes in SMEs, SMEs' owner and senior management are found to be the key source and creator of knowledge and the sole driver in the KM processes (Wee & Chua 2013). When senior management engage in variety of learning activities, they potentially absorb the knowledge based resources necessary to identify or develop new business ideas (Roxas et al. 2014). Senior management that perceive the strategic importance of HR are likely to increase the level of knowledge exploitation in creating innovative products and services. This at the same time increases organisational innovation performance.

The second mechanism through which KM strategy and innovation performance curvilinear relationship could be influenced would be through their capability in balancing internal and external search strategy. Previously, external search strategy helped to explain KM–innovation curvilinear relationship in the context of SMEs. Organisations that invest in broader and deeper search may have a greater ability to adapt to change and therefore to innovate. Hence, "over-search" effect can be

minimised through senior management dynamic managerial capability (Sirmon & Hitt 2009). At low and moderate levels of KM strategy implementation, the positive effects of KM strategy would be elevated and the negative effects from "over-search" could be reduced through higher senior management's perception on the strategic importance of HR. Senior management play their role in assets orchestration (Helfat et al 2007) by means of an endeavour to develop fit between their research management focused decisions. Senior management may choose the best idea among the 'too many' ideas available, utilise the right idea at the right time by matching the innovative idea with organisation capability, and put the right level of attention in bringing the idea into implementation (Koput 1997).

Lastly, senior management's perception on the strategic importance of HR would positively influence KM strategy and innovation performance curvilinear relationship through their leadership roles in building and developing strategic capabilities. Senior management themselves play the 'relational star' roles (Grigoriou & Rothaermel 2013) in order to facilitate knowledge creation through conducive internal knowledge sharing conditions and knowledge exchange, which by implication can enhance innovation performance. Furthermore, through vision and leadership behaviours of the senior management, a social context where positive norms toward innovation is created (Caridi-Zahavi et al. 2016). This relational context facilitates knowledge integration and improved innovation performance. Although previous studies have confirmed the positive relationship between senior management's capabilities and innovation performance, the model proposed in this PhD research would suggest a more complex framework that may need further theoretical elaboration

in which context could be the key mechanism by which senior management would help build strategic capabilities and enhance innovation performance.

Through senior management visionary innovation leadership, the role of senior management as both context shapers and capabilities builders are emphasised and supported by upper echelons theory which emphasises the influence of leaders, in this case, the senior management in predicting organisational outcome through their leadership. In summary, senior management's high perception on the strategic importance of HR enables SMEs to simultaneously mitigate the marginal costs and enhance the marginal benefits associated with increasing levels of KM strategy by more effectively enabling the bundling of available resources and capabilities that can be leveraged with less resource investment. Therefore, the following hypothesis would be posited.

4(b): Senior management's perception on the strategic importance of HR positively moderates the inverted U-shaped relationship between the extent of knowledge management strategy and innovation performance in SMEs.

Summary

The following figure summarises the conceptual framework of this PhD research. The proposed hypotheses aimed to test the curvilinear relationships among TM, KM strategy and organisational performance (i.e., financial and innovation) instead of examining a direct relationship. In addition, the interaction effects of senior management perception of the strategic importance of HR in the proposed curvilinear relationships are also described in this chapter by discussing the interaction effects of the moderating variable on low, moderate and high levels of TM practices and KM strategy implementation. This PhD research was designed to be very context-specific as this particular conceptual framework was tested in the context of Malaysian SMEs to examine the association between independent and dependent variables in Malaysia, an emerging economy in South East Asia.
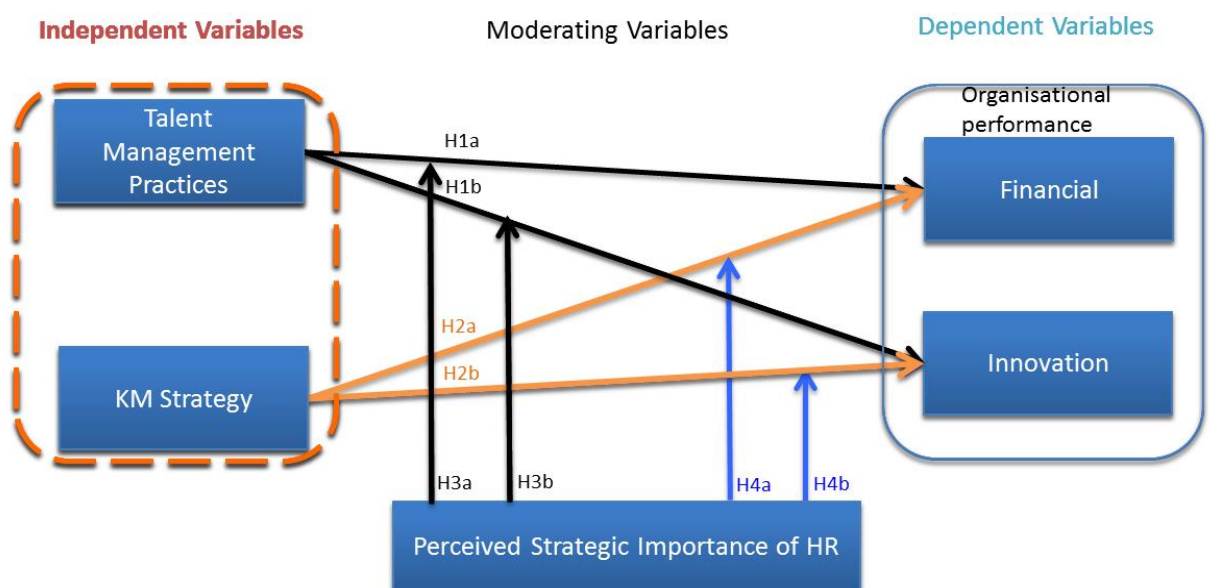
Figure 3.1: Conceptual Framework.

Chapter 4 **METHODOLOGY**

Methodologies used in this PhD research are explained in this particular chapter. Turning the epistemological and ontological principles into rules in conducting research is always described as 'methodology'. Ontology can be defined as the study of reality or things that comprise reality. Meanwhile, epistemology is a theory of knowledge concerning with the nature of the scope of the knowledge (Weber 2004). These two principles differentiate two major streams of methodologies, namely, the qualitative and the quantitative approaches. From ontological perspective, quantitative approach is adopted when the researcher and reality are separated whereas qualitative study is concerned with multiple social realities from people's point of views and interests.

Epistemological principles refer to the view of knowledge which perceive quantitative approach as summarising the knowledge in the form of time, value, and context free generalisation. Furthermore, objective reality exists beyond the human mind. From another viewpoint, the qualitative methodology focuses on the summary of the reality through the human mind and through socially construct meanings (Weber 2004). This research aimed to examine the relationship between TM practices and KM strategy and their effects on organisational performance. Figure 3.1 in the previous chapter describes the conceptual framework which illustrates five important constructs relevant for this particular PhD research. The following table presents a description of each of the variables in brief.

Table 4.1: Summary of the variables in this study

Name of variables	Description
Independent variables	
Talent management practices	TM practices particularly examined three main practices, namely, attracting, developing and retaining talented employees in the organisations.
Knowledge Management Strategy	KM strategy examined the implementation of KM strategy in the organisations based on technology-centred and people-centred KM strategy.
Dependent variables	
Financial performance	Financial performance was measured through growth of sales, profit margin on sales, and return on investment.
Innovation performance	Innovation performance is measured (1) through senior managements' perception on their company innovation performance as compared to their competitors. (2) 1-InnoCERT rating given by SMEcorp.
Moderating variable	
Senior managements' perceived strategic importance of HR	This variable was measured by requesting senior management's perception of the company's HR practices in term of advantages, performance, and the extent to which these would be critical to the success of the organisation in relation to their competitors.

Hence, quantitative methodological approach would suit the nature of the present research. In line with the objective of this study, this chapter covers research design, scale of measurements, instrument development inclusive of sampling, data collection

procedure and data analysis technique. Other discussions related to outliers, missing values, common method variance, factor analysis and testing non-linear relationship that were employed in this PhD research are also elaborated.

4.1 Research Design

The following table summarises the differences between two main approaches in designing research. The epistemology and ontology provide the justifications of this study research design.

Table 4.2: The differences between positivist and interpretive research approaches.

Metatheoretical Assumptions About	Positivism	Interpretivism
Ontology	Person (researcher) and reality are separated	Person (researcher)and reality are inseparable (life-world)
Epistemology	Objective reality exists beyond the human mind.	Knowledge of the world is intentionally constituted through a person's lived experience.
Research Object	Research object is inherent qualities that exist independently of the researcher.	Research object is interpreted in light of meaning structure of person's (researcher's) lived experiences.
Method	Statistic, content analysis.	Hermeneutics, phenomenology, etc.
Theory of Truth	Correspondence theory of truth: one-to-one mapping between research statements and reality.	Truth as intentional fulfilment: interpretation of research object matches lived experience of object.
Validity	Certainty: data truly measures reality.	Defensible knowledge claims.
Reliability	Replicability: research results can be reproduced	Interpretive awareness: researchers recognise and address implications of their subjectivity.

Source: Class notes provided by Jörgen Sandberg as cited in Weber (2004).

This study adopted a positivist research paradigm approach. In a positivist view of the world, science and scientific research are seen as the way to get at the truth – indeed, positivists believe that there is an objective truth out there. For a positivist, the world operates by laws of cause and effect. Positivists are concerned with the rigour and replicability of their research, the reliability of observations, and the generalisability of findings. Deductive reasoning is used to put forward theories that they can test by means of a fixed, predetermined research design and objective measures. Positivist researchers believe in survey and experiment, which allow them to test cause-and-effect relationships (Weber 2004).

Under the positivistic research paradigm, these research questions were turned into hypotheses based on assumptions, theoretical and empirical evidences. Business research methodology books and the literature (e.g., Cavana et al. 2001; Cooper & Emory 1995; Zikmund 1997) emphasise that scholarly studies should begin with an exhaustive literature review to explore salient issues and relevant research questions as well as potential underpinning theories. Then, only research variables and constructs that are relevant to explain the subject matter of the studies are selected to set the research scope. This study adopted RBT (Crook et al. 2008; Barney et al. 2011) as the dominant theoretical frame to explain the relationships among constructs. In addition, strategic human capital/human capital resources (Ployhart & Moliterno 2011b), KBV (Grant 1996) and ABV (Ocasio 1997) were also adopted as secondary theoretical frame which would actually coincide with RBT. Upon the selection of theories, the researcher would determine various variables that would serve as explanations to a phenomenon. The fundamental assumption in deductive approach is that all relationships among variables are laid on strong theoretical justifications. Subsequently, a research

conceptual framework would be proposed. This conceptual framework for the present study will be discussed in Chapter 3 of this thesis to explain the development of hypothesis.

This study used a quantitative approach as it would be best to deal with the research questions and satisfy the research objectives of this study. Online survey using QUALTRICS software was designed to distribute the survey questionnaire to the respective respondents. Instrument development will be described in this chapter. SPSS version 24 software installed with SPSS PROCESS Macro was used to test and quantify the theoretical relationships between the variables (Coakes & Steed 2007; Tabachnick & Fidell 2001). The quantitative research design depends on precise data and exact measures (Baker 2001; Cavana et al. 2001; Cohen, Cohen, West & Aiken 2003) to allow for accurate statistical explanations of a phenomenon for the benefit of making predictions and suggestions for future theoretical and practical conducts. The population of this research was the senior management of SMEs in Malaysia. Their contact details were requested from SMECorp and used as the sample frame for this research. The given data were divided into three groups, namely, SMEs in manufacturing industry, SMEs in services and other industries, and 1-InnoCERT certified companies. The total number of the sampling frame was 1,106 companies with 640 manufacturing SMEs, 376 from services & other industries, and 90 companies certified as 1-InnoCERT.

4.2 Scale of Measurements

This study used questionnaire as the main instrument of this research and utilised subjective and objective measures for organisational performance. Subjective performance measures were influenced by the observers' personal judgement by giving

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their opinion on the rating for current or previous organisational performance. By contrast, objective performance measures referred to impartial measurement without bias or prejudice. For example, in this particular study, sales growth figures, company's age and 1-InnoCERT rating were specific examples of objective measures. Thus, this PhD research did not solely depend on subjective performance measures by requesting respondents to rate their company's performance in relation to that of their competitors but also requested them to declare the previous year sales turnover as an absolute objective performance measure. In addition, the 1-InnoCERT rating was also used in the analysis as another source of objective measure. As suggested by Wall et al. (2004) the content issues would be minor and not significant if the results using subjective and objective performance measures yield similar findings. The following table is a brief overview of the variables of this PhD study.

Table 4.3: Description of variables in the conceptual framework.

Name of variables	*Description*
Talent Management Practices	This variable provided information about TM practices at the identification of talent gaps, selection, recruitment, retention, training and rewarding of talented employees.
Knowledge Management Strategy	This variable viewed KM strategy from technology and people centred perspective.
Financial Performance	This variable measured growth of sales, profit margin on sales and return on investment.
Innovation Performance	This variable viewed the innovation aspect of performance comparing current innovation performance with their competitors.
Perceived Strategic Importance of Human Resource	This variable subjectively measured respondents' perceptions of the company's HR practices in term of advantages, performance, and the extent to which they were critical to the success of the organisations in relation to that of the competitors.

Dependent Variables

The questionnaire was developed using measures from different sources. Organisational performance was treated as the dependent variable. Generally, a single measure of organisational performance is quite difficult. Hence, this study opted financial and innovation performance as two separate organisational performance measures. Performance is measured either using subjective or objective approach. In most empirical research studies especially those that are related to HRM and performance relationship, subjective performance measures are commonly used (Wright et al. 2003; Wright et al. 2005). However, this PhD research also used objective innovation performance measures of 1-InnoCERT rating, that is, secondary data given by SMECorp. This objective measures were used in testing the proposed hypotheses in which innovation performance was the dependent variable.

Financial Performance: Respondents were asked to indicate their responses on a 5-point Likert-type scale, ranging from 'much worse' through 'about the same' or 'much better', how their organisations had performed over the last three years on each of the following financial performance measures: growth of sales, profit margin on sales and return on investment. These three measures were taken from Collings et al. (2010). This was an example of subjective measures for financial performance. Although there was an objective performance measure which requested respondents in the survey to share the sales turnover figures for the past year in the questionnaire, these figures were not used in measuring the organisational performance in this PhD research. The sales turnover were used as control variables in this study. However, with regard to the validity of the construct, the survey questionnaires were sent to senior management of

the companies and financial performance measures were captured objectively from their views on organisational performance especially in the context of SMEs.

Innovation Performance: In this study, three alternative innovation performance measures were used. The first one was subjective and the other two measures were objective in nature. A first innovation performance measure was taken from Alegre et al. (2011). The measures were adopted from OSLO Manual scale of assessing the economics results of product innovation (OECD, 2005). Respondents were asked to indicate on a 7-point Likert-type scale, ranging from 'much worse' through 'about the same' to 'much better' or 'about the same', how the Senior management or MDs rate their company's innovation performance as compared to their competitors in the following 8 items:

1. *Replacement of products being phased out.*

2. *Extension of product range within main product field through technologically new products.*

3. *Extension of product range within main product field through technologically improved products.*

4. *Extension of product range outside main product field.*

5. *Development of environment-friendly products.*

6. *Market share evolution.*

7. *Opening of new markets abroad.*

8. *Opening of new domestic target groups.*

This scale has been successfully used in a number of recent empirical studies (Alegre et al. 2011; Alegre & Chiva 2008; Lopez-Cabrales et al. 2009).

A second measure of innovation performance uses the 1-InnoCERT dummy coded as 1 = 1-InnoCERT, 0 = non-InnoCERT SMEs. A third innovation performance measure uses the 1-InnoCERT dummy coded as 1 = A, 2 = AA, 3 = AAA, and 4 = Not-certified 1-InnoCERT. The second and third innovation measures were based on the 1-InnoCERT certification provided by SMECorp Malaysia. Using QUALTRICS software, the embedded data of 1-InnoCERT certification and rating from 2010 to 2016 from the secondary data were linked to respondents' answers. The last two of innovation performance measures were objective in nature because these ratings (i.e., A, AA, AAA and non-certified companies) were rated based on specific objective screening (see Figure 1.3: the 1-InnoCERT certification process Chapter 1).

All these three innovation performance measures were chosen for this PhD study because previous studies that had tested the relationship between HRM and performance mostly used subjective measures. Furthermore, this particular PhD research treated subjective measures equivalent to the objective ones because the subjective measures were directed at senior management such as the CEOs and managing directors, or at equivalent level, for whom such innovation considerations captured by objective measures would likely dominate their views on organisational performance (Wall et al. 2004) especially in the context of smaller organisations like the SMEs. It would be more robust to use both type of performance measures in order to increase the reliability and validity of the study. If the results of the analysis using these subjective and objective measures would give similar findings, content issues would therefore be of minor significance.

Independent Variables

The two independent variables in this PhD research are talent management practices and knowledge management strategy. These two constructs are built by replicating previous questionnaires that tested the relationship between TM- and KM on performance (Chadee & Raman 2012; Ling 2011). The independent variables of this study were purely subjective in nature. Talent and knowledge management were the two constructs that could only be explored through the respondents' experiences. Thus, the respondents' perceptions on their own company's initiatives in implementing TM practices and KM strategy in relation to those of their competitors in the same industry were obtained. These two independent variables are then examined using factor analysis (please refer section 4.7) to see if there are any data reduction or emergence of new factors. The results indicate no new set of variables which represents a common or shared variation for the proposed model. Hence, the conceptual framework proposed for this study remains the same.

Talent Management practices: Chadee & Raman (2012) has developed a number of TM items to capture various TM practices within the organisation, where the focus of the research is on performance. They have drawn from previous studies (Hatch & Dyer 2004; Kor & Leblebici 2005b; Lam & White 1998; Luoma 2000) in constructing a number of TM practices based on strategic TM definition (Collings & Mellahi 2009) where organisation strategically manage its talent pool. Respondents were asked to rate TM practices pertaining to the identification of talent gaps, selection, recruitment, retention, training and rewarding of talented employees, relative to the industry standards. Respondents were asked to rate the TM items on a 5-point Likert-type scale,

where 1 = 'substantially below industry practices', 3 = 'about the same as the industry', 5 = 'substantially above industry practices'.

Knowledge Management Strategy: The KM strategy measures are taken from Ling (2011) following Sveiby's (1997) and Hansen et al.'s (1999) studies. KM strategies consist of technology-centred and people-centred strategy. The technology-centred strategy focuses on the technological aspects of KM whilst the people-centred strategy focuses on the human aspects. For example, the respondents were asked to indicate their agreement with the given statements related to the implementation of KM strategy in their organisations. The statements were more related to the documentation of corporate culture, knowledge and expertise for sharing purposes, productivity enhancement, and patent applications that could be converted to company assets.

Ling (2011) separated KM strategy into two separate constructs which were technology centred and people centred KM strategy. However, this PhD study combines these two type of KM strategy into one construct. The result of the factor analysis in section 4.7 indicates that these two type of KM strategy can be combine to be one independent variable. Thus, this study construct one new independent variable with the name of KM strategy that combines technology and people-centred KM strategy.

Moderating Variable

Perceived Strategic Importance of HR

This moderating variable was an obvious subjective measure as the question asked respondents about their perceptions of the strategic importance of HR. Although subjective performance measures were utilised for this moderating variable, they were

found to be beneficial for this PhD research as senior management's perception would portray current organisational strategy especially in the context of SMEs. This particular moderating variable was supported by the argument that decision processes within organisations may be affected by how the organisations would channel the attention of the decision makers, namely, the senior management of the company, towards matters deemed as important (Barnett 2008; Ocasio 1997; Ocasio 2011). Furthermore, SMEs or smaller organisations have been found to be the ideal setting to examine the interaction effect of senior management's perception of the strategic importance of HR (Chadwick, Sean A Way, et al. 2013; Chadwick et al. 2015). Hence, this PhD research viewed the perceptions of senior management of the importance of strategic HR interaction effects on TM practices and KM strategy association with organisational performance.

The moderating variable measures in this study were adopted from previous study conducted by Greer et al. (2015). With similar research context which was the smaller organisations, the measures in Greer et al.'s study were replicated as the moderating variable in this PhD research. Greer et al. (2015) have developed three items to measure the senior management's and owners' perception of the strategic importance of HR. The items are like *'our company's HR practices provide us with an advantage over our competitors'*, *'Our HR practices enable our company to perform better than our competitors'*, and *'our company's HR practices are critical to the success of our company'*. These items ask respondents about their perceptions of the company's HR practices in term of advantages, performance, and the extent to which they were critical to the success of the organisations relative to the competitors. The perception is very much related to the 'attention' given on the strategic importance of HR (i.e., people) in

the organisations. This attention-based view theory (Ocasio 1997) supports the importance of Senior management's perception and attention in influencing SMEs' performance. This theory explains how the behaviour of SMEs is influenced by how attention of decision makers is distributed.

Control Variables

There are few studies that utilise type of industry, firm age and firm size as control variables in studies related to TM and KM (Donate & Guadamillas 2011; Chadee & Raman 2012; Sheehan 2013; Chen et al. 2014; Mellahi & Collings 2010; Javalgi & Todd 2011; Sonnenberg et al. 2014). This PhD study utilised the same control variables because most of empirical evidences that had utilised organisational performance as the dependent variable included these three common control variables. For example, Wales et al. (2013) had utilised firm size and firm age as the control variables in their model and found positive significant effect of firm size and age in influencing the curvilinear relationship between entrepreneurial orientation and small firm performance.

Collings et al. (2010) had also included firm age, firm size and industry in their conceptual framework testing the relationship between HRM practices and organisational financial performance. They had found positive relationship between HRM and financial performance when firm size, firm age, and industry were included in the model. Donate & Guadamillas (2011) had also utilised these three control variables in their study including KM and innovation performance. With these three variables controlled, their results had supported positive relationship between KM and innovation performance. Lastly, in a study conducted in a similar context with the present PhD study, Kotabe et al. (2014) had found significant positive effects of several control variables including firm age, firm size, and industry on innovation performance

in an emerging market. Hence, these three sets of variables were included in the model to control for extraneous variation:

1. The *organisation age (AGE)* was included as a control variable. The longer the organisations are involved in business, the more experience the top management like the senior management have in managing the company and the more experienced the employees in their work to achieve sustainable competitive advantage. Some researchers argue that age would have positive relationship with performance (Donate & Guadamillas 2011) while others argue that more experienced top management of employees would lead to negative effects due to 'stale in the saddle' (Miller 1991; Miller & Shamsie 2001; Henderson et al. 2006). In this particular study, respondents were asked to share the age of their respective companies. The age was based on the number of years the company had been established.

2. *Number of employees* was also included as a control variable in the overall model because it has been found to impact product innovation (Alegre & Chiva 2008) and financial performance. With regard to size, it is likely that organisations with larger number of employees would have better capabilities, which may affect organisational performance. The respondents were asked to share the number of employees in their respective organisations using an open-ended question. They were requested to write the number of employees in the survey questionnaire.

3. *Type of industry* was also included in the controlled variables. Respondents were asked to identify their company's primary industry following the Standard Industrial Code (SIC) and then code their responses in each of the industry

dummy variables. This SIC is a system for classifying industries by a four-digit code, established in the United States and used by most countries such as the United Kingdom and Singapore. Although Malaysian SMEs do not use this SIC code, this PhD research used this code to generalise the results to a wider context. There were 10 specific types of industry sampled: (1) agriculture, forestry, fishing, (2) Mining, (3) Construction, (4) Manufacturing, (5) Transportation and Public utilities, (6) Wholesale trade, (7) Retail trade, (8) Finance, insurance, and real estate, (9) Services, (10) Public administration.

4. *1-Innocert certification* was also controlled in this study. The certification of companies in the sample had been given as secondary-data by SMECorp. Using QUALTRICS software, the embedded data of 1-InnoCERT certification year and rating from 2010 to 2016 from the secondary sources were linked to respondents' answers. This was done to increase the reliability of the results by using few different measures in testing the association between TM –and KM on innovation performance. In this study, the 1-InnoCERT dummy was coded as 1 = 1-InnoCERT, 0 = non-1-InnoCERT).

4.3   Instrument Development

The data collection was done by administering a set of questionnaire online. Surveys are most commonly used in research in human resource management. Survey research enables the research to identify broad trends in population (Creswell and Plano-Clark, 2011). Therefore, the purpose of this research was to test the relationship between TM practices and KM strategy on organisational performance, specifically financial and innovation performance. Questionnaire was chosen as data collection instrument as it could generalise the results to the larger context of SMEs in Malaysia. However,

checking the reliability, validity and generalisability of questionnaires are very important. In addressing this issue, the questionnaire developed went through two stages: pre-test questionnaire with ad-hoc expert group and pilot test, for refinement accordingly. The survey in this study utilised both paper-and-pencil format and the online survey format using a software called QUALTRICS. The main method of distributing the survey was via QUALTRICS and at the end of the data collection period, the researcher decided to meet those targeted senior management of the companies that were reluctant to do the online version type of survey to meet the targeted response rate for this study.

A good research design should consider various aspects especially if the researcher is designing questionnaires. The questionnaires survey must be appealing and attractive for respondents to answer. It must not only reflect the research inquiry but also interesting and simple to encourage respondents to finish the survey. The questionnaires must be made to look as professional as possible to create an impression of validity and creditability to the respondents. The present research used features such as headers, Kent Business School logo and also SMECorp logo in the questionnaires. The content in the cover letter must be convincing enough to show the relevance and significance of this study towards them. Hence, the letter informed respondents on the research collaboration with SMECorp to stress the importance of this research topic for Malaysian SMEs.

A group of 32 senior management and managing directors were contacted via email and the online survey link was sent using QUALTRICS responded to the survey. This preliminary testing provided a basis to check reliability of the constructs used in the study: TM practices, KM strategy, Innovation Performance, Financial Performance,

and Perceived Strategic Importance of HR. Table 4.3 shows the results of the preliminary tests. All constructs had obtained the Cronbach's alpha values of more than 0.80 as recommended by previous researchers (Peterson, 1994). Based on the pre-testing, the questionnaires was finalised and could be used for the actual survey.

Table 4.3: Reliability Statistics for Constructs in Pre-testing.

Constructs	Number of items	Cronbach alpha
Talent Management Practices	6	0.81
Knowledge Management Strategy	7	0.76
Financial Performance	3	0.94
Innovation Performance	8	0.94
Perceived Strategic Importance of HR	3	0.85

The refined questionnaires consisted of 27 items: 6 items for TM practices, 7 items for KM strategy, 3 items for financial performance, 8 items for innovation performance, and 3 items for perceived strategic importance of HR. The final part of the questionnaire consisted of demographic questions. It was estimated that the questionnaire would require about 10-15 minutes to complete. A sample of the questionnaire is available in Appendix 1.

The survey instrument was originally designed in English. Taking into account the multiple-races background among respondents, the questionnaire was sent for translation (English-Bahasa and Bahasa-English) by professionals considering that Malay language is the national language of Malaysia, understood by all races. The translation was done by the professionals in B-Lingo Communications Sdn Bhd, a translation company in Malaysia. To check the clarity of the instrument, three senior management were contacted to get feedback on the instruments. The online survey in both languages were emailed to them. After they had answered the questionnaires,

interviews via telephone calls were conducted to obtain their feedback on the clarity of the instrument. All their comments had been noted. Overall, the item instruments and scales in the questionnaires were reported as clear and easy to understand. Only small modifications were made to enhance the understanding of the respondents.

This study utilised QUALTRICS software to design a professional-looked online survey for this study. There are many advantages provided by this software in increasing the reliability and validity of the survey. First, since the researcher already had the respondents' email addresses, this software enabled the researcher to directly email the link to targeted respondents' email addresses. QUALTRICS provided the un-anonymous link to each of the targeted respondents. With this un-anonymous link, only the owners of the email addresses could answer the survey questions. This study was targeting the senior management as respondents due to the nature of an organisational level research. Hence, this function increased the validity of the targeted respondents.

Second, QUALTRICS also has the function to send reminders to those targeted respondents who had not opened or completed the survey. The researcher had sent three monthly reminders during the data collection period (May–July 2015). In addition to the above advantages, QUALTRICS would also automatically send reminders to those respondents who had not finished answering the survey. Each reminder did increase the number of responses. The strategy taken after each reminder was to send email. This was done by the present researcher who took the initiative to call the targeted senior management to make sure they would receive and read the email. Because of overload of emails in their mailboxes, some of the emails with the survey link could be hidden among the incoming emails in their mailboxes. Quite a number of respondents

requested for new email to be sent to them because they could not trace the online survey questionnaires link.

Third, one of the best features of QUALTRICS is that the researcher could trace whether our targeted respondents had clicked on the link given and started answering the questions. In addition, the percentages of questions answered for each respondent were also available for the researcher to follow-up. This is to deal with the concerns that respondents may easily lose focus and have little motivation to finish the survey especially if the survey is online. This function helped to improve the insufficient effort responding, which occurs due to a lack of motivation to comply with survey instructions (Huang et al. 2015). Researcher could do the follow-up calls to those respondents who had already started to answer the survey and take the opportunity to politely request them to finish off the questionnaires.

Sampling

To date, SMECorp has given its favourable reply and support towards the study and has given good co-operation upon request for data and information. An hour's discussion on the present research's proposal entitled, *Talent Management in Malaysian SMEs* with the CEO of SMECorp, Dato' Hafsah Hashim shed some light for this study. During the one hour session, the CEO of SMECorp was willing to collaborate in terms of giving the important data for this study. A non-disclosure declaration letter was provided to SMECorp with a confirmation letter from Kent Business School on the present researcher's status as PhD student and the data requested would solely be used for the purpose of this research.

Data Collection Procedure

The sampling frame for the Malaysian SMEs was drawn from the SMECorp listing. The number of the available sampling frame was 1,106 SMEs. The full name of the CEO or MD of the company is listed in the contact details with their company addresses, phone-number and email address. The data for this study was collected using QUALTRICS. The online survey link is un-anonymous and sent to specific email address (i.e., CEO and Managing Director).

The first round of online survey was sent to 90 1-InnoCERT companies' senior management aiming to obtain at least 30 respondents from this sample and also 569 medium-sized companies with valid email addresses. The total number of SMEs in the sample was 1,016 but not all of them provided senior management's email address. A total of 446 SMEs had no email address. Thus, follow-up calls to acquire the email address of the senior management had been made and this increased the available number of email addresses to 750. The second round of survey was sent to companies with general e-mail addresses. However, in order to make sure that only the senior management were answering the online survey, follow-up calls were made to those companies. A three-month period from May to July 2015 was set as the data collection time frame. The response-rate was low in May as at that time all SMEs were busy with the new implementation of Goods and Service Tax in Malaysia. Thus, that affected the data collection responses.

The researcher went to Malaysia in June 2015 to increase the response rate of the survey by making appointments with the senior management of the SMEs. However, that only increased the response rate by 15 respondents. Thus, the researcher increased the frequency of sending reminder email via QUALTRICS and followed up

by phone calls. Three reminders were sent to research sample at the end of May, June and July 2015. As at end of July 2015, the total number of respondents answering the survey was 189. However, after incomplete questionnaires were discarded, the usable number of respondents was 144.

Data Analysis Techniques

The raw data were entered, cleaned, and then transformed based on five variables. Table 4.4 below summarises the techniques used. SPSS version 24 was employed to do major parts of the statistical analysis of this study. In addition SPSS PROCESS Macro was also installed into SPSS version 24 for more in-depth analysis of conditional moderation effect. As a start, the basic quantitative and descriptive statistics were computed to estimate the central tendency of the research sample. Another basic data analysis is scale reliability analysis to evaluate the internal consistency of measurements (Cronbach 1951).

Table 4.4: Data Analysis Techniques.

Techniques	Purposes
Descriptive analysis P-Plot, z-values	Data cleaning: Description of sample characteristics: Means, Std. deviation, correlation.
Normality check	Checking for outliers using outliers labelling rule (Hoaglin et al. 1986; Hoaglin & Iglewicz 1987) and also Mahalanobis, Cooks and Leverage figure.
Harman's single factor test	Common method variance
Dimension reduction	Factor analysis; Checking multicollinearity between constructs; Convergent and discriminant validity
Scale analysis Pearson's Product Moment Regression	Reliability and validity Correlations Relationships between variables

Multiple Regression	Interaction effect
Ordinal Least Squares Regression	Moderating variables
(non-linear relationship)	Quadratic interaction effect
SPSS PROCESS Macro	Conditional moderation effects
Johnson-Neyman Techniques	Spotlight versus floodlight test

4.4   Outliers

Outliers are data points that deviate markedly from others. The presence of outliers in the data is one of the challenges that needs to be catered especially in management research. The main effect of outliers is usually they exert disproportionate influence on substantive conclusions regarding relationships among variables. However, there is no clear guideline about how to deal with outliers properly. Most scholars believe that outliers are "bad" and need to be "fixed" and some thought that the existence of outliers may give new insight or findings. An interesting view on treatment of outliers, which was described by Cortina (2001: 359) is as follows:

> Caution also must be used because, in most cases, deletion [of outliers] helps us to support our hypotheses. Given the importance of inter-subjectivity and the separation of theoretical and empirical evidence in the testing of hypotheses, choosing a course of action post hoc that is certain to increase our chances of finding what we want to find is a dangerous practice.

Outliers have a big impact on the research results especially for studies dealing with hypotheses testing. Decisions made either to keep or delete the outliers from the data can lead to false acceptance or rejection of hypotheses. Aguinis et al. (2013: 272) emphasise the "important implication of how researchers define, identify, and handle outliers change substantive conclusions including the presence or absence, direction, and size of an effect or relationship".

This study utilised three methods for detecting the potential outliers that might affect the main analysis of this study. It is interesting to note that different approaches in dealing with outliers give different outcomes. First, analysis and screening of the box plot, and stem and leaf plot were done to detect the outliers. As suggested by Aguinis (2013), respondents' answers are summarised in lower quartile (Q1), median (Q2), upper quartile (Q3), and largest value. Outliers can be identified as those points that lie beyond the plot's whiskers (i.e., the smallest and largest values, excluding outliers). With this approach, 21 outliers were detected.

The second method used in detecting the outliers was the 'outliers labelling rule' (Tukey 1977; Hoaglin et al. 1986; Hoaglin & Iglewicz 1987). This technique includes a resistant rule of identifying possible outliers. The advantage of this method is that it avoids the need to specify the number of possible outliers in advance; as long as they are not too numerous, any outliers do not affect the location of the cut-offs. Outliers labelling rule was used to explore the upper and lower quartiles using the following formula: Upper: $Q3 + [2.2*(Q3-Q1)]$ and Lower: $Q1 - [2.2*9Q3-Q1)]$.With this approach 6 outliers were detected: data number 24, 70, 101, 117, and 118.

The third method in detecting the outliers were done by analysing the Mahalanobis, Cooks and Leverage values. The rule of thumb for this particular outliers' detection method are as the following: For Mahalanobis, $X^2 df = 2$, $p < .001$, referring to Chi-square, if Mahalanobis was more than 13.82, there would be possible outliers. For Cooks, this formula was employed: $4/ (N - K - 1) = 4/144 - 2 - 1) = 0.028$. For Leverage, this formula was used: $2(K) + 2/N = 0.042$ 0r $3(K+1)/N = 0.063$ (Aguinis et al. 2013). This detection method produced four extreme outliers; data 28, 118, 123, and 141.

All these three approaches in detecting outliers produced a few similar outliers. However, this particular PhD study opted for outliers' data from the result of outliers labelling rule as this approach minimised the number of possible outliers. Further, these possible outliers' data were later tested to determine their effect on the data analysis. As recommended by Aguinis et al. (2013), sensitivity analysis was conducted by exploring the results of the main analysis with and without the particular outliers' data points. If the results differ across the two analyses, the data point would be identified as outliers. This analysis utilised five outliers (i.e., data numbers 24, 70, 101, 117, and 118) from 'outliers labelling rule (Tukey 1977; Hoaglin et al. 1986; Hoaglin & Iglewicz 1987).

Table 4.5 indicates that there were no significant differences in the results between data without and data with outliers. Hence, this study opted to retain all the outliers as the R^2 for models with outliers would be higher than that of the models without outliers. The outliers in this PhD research were classified as "model fit outliers" in which the existence of these outliers in the data set would influence the fit of the model with the increase of the R2 value. Hence, retaining the potential outliers would be more beneficial for the final analysis.

Table 4.5: Sensitivity analysis for comparing the results of data with and data without outliers

	Financial performance								Innovation performance							
	Without outliers				With Outliers				Without outliers				With outliers			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Main effects																
TM practices	.50****	.36****			.50****	.36***			.51****	.38****			.48****	.40****		
TM practices squared	-.16*	.04			-.19**	.01			-.17**	-.02			-.18**	-.06		
KM strategy			.30***	.20**			.30****	.20**			.31****	.19**			.31****	.24****
KM strategy squared			-.14*	.14			-.20**	.10			-.16**	.02			-.19**	.01
Moderating variables																
PSI of HR		-.08		-.06		-.06		-.06		-.0.8		-.07		-.01		-.05
Interaction effects																
TMP x PSI of HR		.19*				.18*				.11				.09		
TMP squared x PSI of HR		-.16				-.17				-14				-.15		
KMS x PSI of HR				.14				.14				-.03				.08
KMS squares x PSI of HR				-.35**				-.36**				-.35**				-.28*
R^2	.29*	.33*	.17*	.28****	.32****	.35****	.36****	.31****	.33****	.37	.21*	.30***	.36****	.38****	.27****	32****
Change in R^2	.20*	.04*	.02*	.10****	.26****	.03****	.24****	.24****	.02**	.02	.02*	.07***	.24****	.26****	.15****	.20****

Notes: (1) N = 139 (without outliers) and N = 144 (with outliers), standardised coefficients are reported $*p < 0.1$, $**p<0.05$, $***p<0.01$, $****p < 0.0001$

(2) Control variables are included in the analysis but not shown.

4.5 Missing Values

Looking at the available responses, there are three most unanswered questions that need further treatment. These three subjective questions are asking respondents to share the age of the company, number of employees, and sales turnover. Most respondents are reluctant to reveal their sales turnover of the company even though a note has been made stating, *'all information collected in this questionnaire will be treated with the highest degree of confidentiality, and will not be shared with any party except in the form of aggregated data and for the purpose of statistical data, only).*

There are several ways to deal with missing values. The first method involves pairwise or list wise deletion which means that the missing values are removed from the data set. The second method replaces the missing values with mean. The third method utilises multiple imputation technique while the fourth and final method makes use of the expected maximisation. Although the first and second method are the simplest but many studies do not recommend such treatment because omitting data with missing values would reduce the number of available respondents for the quantitative analysis (Yuan 2010). The third technique which is multiple imputation procedure replaces each missing value with a set of plausible values that represent the uncertainty about the right value to impute (Rubin & Schenker 1987). Fourthly, expected maximisation imputation algorithm estimation of missing data starts by estimating the expected values of missing data from observed data and then repeats the process using both the observed data and the estimated missing values. Although Expectation-Maximisation (EM) imputation is good in estimating the mean values, it underestimates variances, thereby invalidating statistical inferences from the imputed data (Allison 2002).

Hence, since this particular PhD research aimed to examine the association between TM practices and KM strategy and their effects on organisational performance utilising regression analysis, the problem of missing values was dealt with by using multiple imputation technique as suggested by Rubin and Schenker (Rubin & Schenker 1986; Rubin & Schenker 1987). With multiple imputation, each missing values was replaced with two or more values representing a distribution of likely values. This study utilised multiple imputation technique for age, number of employees and sales turnover variables that had the highest number of missing values. Multiple imputation technique yields several sets of data. In this study, five imputation cycles were set in the multiple imputation analysis. From all the available datasets, imputation cycle number four corresponded to the most likely complete data. Therefore, imputation data number four was chosen to be the final dataset for analysis in this PhD research because preliminary analysis using this dataset had produced higher R^2 as compared to those of the other sets of multiple imputations.

4.6   Common Method Variance

Common Method Variance (CMV) is "variance that is attributable to the measurement method rather than to the constructs the measures represents" (Podsakoff et al. 2003: 879). Furthermore, "CMV creates a false internal consistency, that is, an apparent correlation among variables generated by their common sources" (Chang et al. 2010: 178). This study utilised self-report questionnaires in data collection, hence CMV may be a concern. The reason of the possibility of CMV is the tendency of respondents to give consistent answers to self-report questionnaire and this can create false correlation among the tested measures. According to Podsakoff et al. (2003) there are four general sources of CMV. The first source of CMV is when the respondent providing the

measure of the predictor and the criterion variable is the same person. Second, the manner in which items are presented in the survey also contributes to CMV. Third, the contexts in which items on a questionnaire are placed. Finally, the contextual influences like time, location, and media used to measure the constructs.

Researchers address the potential issue of CMV through four approaches, as suggested by Podsakoff et al. (2003) when they did a critical review with regards to CMV in behavioural research literature. The first strategy is at the research design stage by using other source of information for some of the key measures. Hence, to avoid the potential issues related to CMV in this PhD research, secondary data of 1-innoCERT rating certification from the year 2013 – 2016 as given by SMECorp were also utilised as another two measures for innovation performance variable. The dependent variable is measured from the survey results and also from the secondary information of 1-InnoCERT rating (i.e. A, AA, AAA).

The second suggestion in reducing the possibility of CMV is through the correct procedures in administering the questionnaires. In this regard, different scale types in the questionnaires were used: (1) 7-likert scale: strongly agree – strongly disagree and (2) 5 Likert-scale; substantially below industry practices – substantially above industry standard. This procedure would prevent respondents from simply answering the questionnaires without even thinking about the questions. In addition to that, respondents were assured of the anonymity and confidentiality of the study at the beginning of the survey that there would be no right or wrong answers and they should answer as honestly as possible. Technical and unfamiliar terms in the survey were also defined to provide better understanding.

Third, the likelihood of CMV is lesser for a more complex conceptual framework. Following the suggestion, this study tested the relationship of TM/KM on financial and innovation performance separately. In addition, the interaction effect of senior management's perception on the strategic importance of HR is tested on the fore-mention relationships. This more complex model with a moderating variable would make it more difficult for respondents to visualise the tested effects. However, the most important aspects in preventing the possibility of CMV only would make sense if guided by a good theory. Hence, this PhD research study implemented RBT to support the conceptual framework.

Even though it is strongly recommended to use the design remedies approach for dealing with CMV, there are ways of to address the CMV problem after the variables in the study have already been measured. For example, Harman one factor analysis is often used to check whether variance in a single data can be largely attributed to a single factor. In this procedure, all variables of interest are entered into a factor analysis. Harman single factor test was performed to analyse the existence of common method variance in the study. A problem would arise if one general factor accounts for the majority of covariance in the variables (Podsakoff & Organ 1986). The result for Harman single test in this study gives 42% variance explained by a single factor (refer Table 4.6). This shows that the common method bias is not a major concern.

Another statistical procedure attempting to deal with CMV is the partial correlation procedure. In this approach, the hypothesis to be tested is whether the relationships among the variables of interest still exist after the common method factor has been statistically controlled. This would be done by first, by conducting a factor analysis. In factor analysis, the first un-rotated factor is partial out and the relationship

between the independent and criterion variables are examined to determine whether any meaningful correlation exists. Lastly, a scale trimming approach is also suggested by eliminating items that have low factor loading. The logic behind the trimming approach is to assume that the researcher can identify those items that the respondents perceive as conceptually similar on the scales of interest. Further explanation on factor analysis is elaborated in the following section.

Table 4.6: Harman Single Factor Test Result.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.523	42.481	42.481	5.523	42.481	42.481
2	1.883	14.484	56.965	1.883	14.484	56.965
3	1.065	8.193	65.158	1.065	8.193	65.158
4	.897	6.898	72.056			
5	.768	5.908	77.964			
6	.619	4.763	82.727			
7	.466	3.583	86.310			
8	.445	3.421	89.731			
9	.339	2.607	92.338			
10	.321	2.467	94.805			
11	.250	1.919	96.724			
12	.227	1.749	98.473			
13	.198	1.527	100.000			

Extraction Method: Principal Component Analysis.

In addition to the above approach, it is also suggested to separate the data collection for the measures. In other words, by collecting some measures at different times or to collect some measures at different places or by different media or by using some combination of these techniques. As in the case of the present study, online survey was utilised via QUALTRICS and the printed survey questionnaire was to the respondents directly. QUALTRICS online survey has several advantages that from the opinion of the present researcher can reduce CMV. First, through QUALTRICS, the present

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researcher could trace respondents who had read the online survey and make follow-up calls to increase the level of confidence in answering the online survey. Each respondent's progress could also be traced in terms of how many questions had been answered and how long it would take to finish the survey. A few follow-up calls were made by the present researcher when it had been observed that some respondents stopped answering the online survey at certain percentage of completion. Hence, the possibility of CMV is less likely to happen as some respondents answered the survey in multiple sessions. One advantage of QUALTRICS online survey is the possibility of respondents taking a break in answering the survey and continuing at later times. Respondents were informed on this possibility at the introduction page of the survey.

4.7   Factor Analysis

Factor analysis is an appropriate method for scale development when analysing a set of interval-level, non-dichotomous variables. It is a mathematically complex method of reducing a large set of variables to a smaller set of underlying variables referred to as factors. The aim of this analysis is to examine whether, on the basis if respondents' answers to survey questionnaires, a smaller number of more general factors that underlie answers to individual questions could be detected (De Vaus 2013: 185).

Factor analysis, a data reduction method, was utilised separately for both dependent variables, financial performance and innovation performance on other variables. There are four steps in forming scales using factor analysis. The four steps are:

1. Selecting the variables to be analysed

2. Extracting an initial set of factors

3. Extracting a final set of factors by 'rotation'

4. Constructing scales based on the results at step 3 and using these in future analysis.

Through factor analysis, the inter-relationships among the variables are analysed to find a new set of variables which represents a common or shared variation. Table 4.7 and 4.8 display the findings for both models and the result showed similar outcome. In order to reduce the likelihood of CMV, it is suggested to eliminate items with factor loading less than 0.5.

Table 4.7: Dependent Variable: Financial Performance.

Items	TMP	KMS	FP	PSI of HR
Identification and assessment of talent positions in the company.	.82			
Selection and recruitment of talented staff.	.79			
In-house programmes for developing and nurturing talented employees for the company.	.73			
Provision of financial performance incentives to reward talented staff.	.67			
Company's budget allocated specifically to talent mgmt.	.73			
Company's overall talent management effectiveness	.79			
My company often converts corporate culture or shared values into documented materials.		.65		
My company often converts employee knowledge or expertise into documented materials.		.75		
My company often enhances productivity (product/service quality and quantity) by renewing equipment.		.79		
My company encourages patent applications so that employee knowledge or expertise all over the country can be converted into company-owned assets.		-.64		
In my company, most of the knowledge is embedded in employees all over Malaysia.		-.52		
In my company, knowledge is often shared through personnel interactions, such as mentoring or rotations.		.69		
My company often acquires knowledge through strategic alliances, technology cooperation, mergers, acquisitions, or technology licensing.		.64		
Growth of sales			.86	
Profit margin on sales			.89	
Return on investment			.87	
Our company's HR practices provide us with an advantage over our competitors.				.86
Our HR practices enable our company to perform better than our competitors.				.85
Our company's HR practices are critical to the success of our company.				.71
Percentage of variance	**39.56**	**10.68**	**9.37**	**7.6**
KMO:	**.86**			
Bartlett's Test of Sphericity (Chi square =1690.50 , p<0.00 at .000)				

Table 4.8: Dependent Variable: Innovation Performance.

Items	TMP	KMS	IP	PSI of HR
Identification and assessment of talent positions in the company.	.83			
Selection and recruitment of talented staff.	.80			
In-house programmes for developing and nurturing talented employees for the company.	.73			
Provision of financial performance incentives to reward talented staff.	.66			
Company's budget allocated specifically to talent management.	.71			
Company's overall talent management effectiveness	.78			
My company often converts corporate culture or shared values into documented materials.		.68		
My company often converts employee knowledge or expertise into documented materials.		.77		
My company often enhances productivity (product/service quality and quantity) by renewing equipment.		.77		
My company encourages patent applications so that employee knowledge or expertise all over the country can be converted into company-owned assets.		-.59		
In my company, most of the knowledge is embedded in employees all over Malaysia.		-.54		
In my company, knowledge is often shared through personnel interactions, such as mentoring or rotations.		.69		
My company often acquires knowledge through strategic alliances, technology cooperation, mergers, acquisitions, or technology licensing.		.59		
Replacement of products being phased out.			.65	
Extension of product range within main product field through technologically new products.			.80	
Extension of product range within main product field through technologically improved products.			.83	
Extension of product range outside main product field.			.82	
Development of environment-friendly products.			.77	
Market share evolution.			.80	
Opening of new markets abroad.			.63	
Opening of new domestic target groups.			.78	
Our company's HR practices provide us with an advantage over our competitors.				.85
Our HR practices enable our company to perform better than our competitors.				.84
Our company's HR practices are critical to the success of our company.				.71
Percentage of variance	**11.26**	**8.47**	**38.29**	**6.76**
KMO:	**.864**			
Bartlett's Test of Sphericity (Chi square =2237.36 , p<0.00 at .000)				

According to Hair et al (2006), only factors with eigenvalues of more than 1.0 in the Rotation Sums of Squared Loadings will be considered as significant factors. As a result of the factor analysis, for the dependent variable of financial performance the KMO and Bartlett's Test results were generated and in this study, the KMO measure of sampling adequacy was 0.86 and the Bartlett's Test of Sphericity was significant (Chi square = 1690.50, $p<0.00$ at 0.000). Meanwhile, for innovation performance as a dependent variable, the KMO and Bartlett's Test results were generated. The KMO measure of sampling adequacy was 0.864 and the Bartlett's Test of Sphericity was significant (Chi square = 2237, $p<0.00$ at 0.000). From the results of this factor analysis, five variables were computed. The variables were TM Practices, KM Strategy, Perceived Strategic Importance of HR, Financial Performance, and Innovation Performance.

4.8 Testing U-shaped and Inverted U-shaped Relationship

To date, the development of quantitative study especially in terms of research method and analysis in management research is growing with new up to date suggestions and findings. The focus into testing the linear relationship sometimes are challenged with the possibilities of non-linear or curvilinear relationship. The growing number of research particularly exploring and analysing the non-linear and curvilinear relationship are detailed in *Chapter 2: Literature Review* of this thesis. One of the prominent references in elaborating and detailing the non-linear and curvilinear relationship is a book entitled, *Applied Multiple Regression/Correlation Analysis for the Behavioural Sciences*, (Cohen et al. 2003). They have suggested four approaches in examining non-linear relationship: (1) Power polynomials; (2) the use of monotonic non-linear

transformations; (3) non-linear regression; (4) Non-parametric regression approach. However, this particular PhD research only utilised the first two approaches.

Firstly, the most common method of fitting curves of almost any shape is power polynomial regression. The following is the polynomial equation:

$$Y = BX + CX^2 = DX^3 = \ldots = QX^{n-1} + A.$$

This polynomial equation relates the one variable X to Y by using (n-1) aspects of X to the criterion Y. In addition, the regression equation includes stand-in variables (X^2, x^3, etc.) that possess a known non-linear relationship to the original variables. In this first approach, the positive sign of the highest order terms in polynomial regressions determines the direction of the curvature. For example, in the quadratic equation, positive B^2 indicates a curve that is U-shaped; negative B^2 indicates a curve that is inverted U-shaped.

Secondly is the monotonic non-linear transformations that shrink or stretch portions of the scale differentially. These transformations change the relative spacing between adjacent points on the scale but maintain the rank order of the scores. The main purpose of this non-linear transformation of the independent variables as polynomials is to permit the use of linear multiple regression to characterise a non-linear relationship of the independent variable to Y. There are three main objectives for carrying out these transformations: (1) to simplify the relationship; (2) to eliminate heteroscedasticity; (3) to normalise residuals. To achieve these goals, this PhD research normalised some items for transformation with log X.

In addition to the above approaches, numerous articles published in high-impact journals have presented detailed reviews on various issues related to non-linear and

curvilinear relationships. For example, Haans et al. (2016) have reviewed articles exploring U-shaped relationships in published *Strategic Management Journal* during 1980-2012 period and explored the movement towards introducing moderation to quadratic relationships. These authors have provided proper guidelines in theorising and testing U-shaped and inverted U-shaped relationships hypothesised in this particular PhD research and also suggested some procedures in testing interaction effects on curvilinear relationships.

U-shaped and inverted U-shaped relationships are found to be increasingly explored in strategy research. In a recent literature review, Haans et al. (2016) prove the increasing number of publications investigating quadratic relationships and a movement towards introducing moderation to quadratic relationships has emerged especially in *Strategic Management Journal*.

Theoretically:

> A U-shaped relationship exists if the dependent variable Y first decreases with the independent variable X at a decreasing rate to reach a minimum, after which Y increases at an increasing rate as X continues to rise. An inverted U-shaped relationship exists if Y first increases with X at a decreasing rate to reach a maximum, after which Y decreases at an increasing rate. (Haans et al. 2016: 1178)

In this review, current practices for the entire process of theorising, hypothesising, and testing for U-shaped relationships in management research are elaborated. To provide evidence for a U-shaped relationship, the dependent variable Y is regressed on the dependent variable X and its square. Lind & Mehlum (2010) suggest a three-step procedure in establishing a quadratic relationship as follows:

$$Y = \beta_0 + \beta_1 X + \beta_2 X^2 \qquad\qquad (1)$$

1. β_2 needs to be significant and of the expected sign; a significant and negative β_2 indicates an inverted U-shaped relationship and a significant and positive β_2 indicates a U-shaped relationship.

2. The slope must be significantly steep at both ends of the data range.

3. The turning point needs to be located well within the data range.

It is important to note on the U-shaped relationships and also testing the moderation effects on U-shaped relationships can be detected from Ordinal Least Squares (OLS) regression analysis to analyse the significant β^2. However, further exploration on the data would give more potential insights on learning about the U-shaped quadratic relationship.

It is also interesting to note on the work of Spiller et al. (2013) who have reviewed the difference between 'spotlight' and 'floodlight' in measuring interaction effects. Spotlight test is the common practice for reporting a significant interaction of a measured variable X with a manipulated variable Z to examine simple effects of Z at different levels of X. Rather than following the common practice of reporting the spotlight tests at one standard deviation at above and below the mean of X, Johnson-Neyman technique or also known as 'floodlight' approach would also be utilised to explore the interaction effects. This floodlight perspective would also be used because TM/KM strategy could not provide the focal values from the normal OLS regression technique. This analysis has become more feasible from macros for SPSS, SAS, and R which makes computing Johnson-Neyman points more feasible for any researcher.

Summary

This chapter starts with the discussion of the ontology and epistemology of this PhD research which leads to the chosen methodology in this study. This is followed by the description of the methodology and statistical techniques employed in order to address the proposed research questions. This study was a quantitative study using online survey approach. QUALTRICS online survey software had been used for data collection which was able to sample 189 respondents. The respondents were senior management of Malaysian SMEs. This makes the present study more relevant as organisational level research.

All variables of this PhD research are discussed in 'Scale of Measurements' section of this chapter and justification for each of the measures, namely, TM practices, KM strategy, financial performance, innovation performance, perceived strategic importance of HR, and control variables, are explained. This PhD study used subjective and objective measures to increase the reliability of the analysis. Although, most variables used subjective measures, some objective measures such as the 1-InnoCERT rating (secondary data from SMECorp) was used as another dependent variable in order to elevate the robustness of this PhD research. Other objective measures included in the survey were sales turnover figure, number of employees, and age of the company.

SPSS 24 and SPSS PROCESS Macro were used to perform data analysis. An in-depth discussion on how to examine non-linear relationships follows. Some potential analysis in theorising and testing for U-shaped and inverted U-shaped quadratic relationship are also elaborated. This chapter ends with the introduction of Johnson-Neyman technique, also known as the 'spotlight' and 'floodlight' moderation analysis used as another robustness evaluation and will be described in the next chapter.

Chapter 5 **DESCRIPTIVE RESULTS**

This chapter provides the results of the preliminary data analysis, including summary sample statistics by industry. The percentage of companies from each industry are shared followed by company's age distribution. The respondents were also asked in the survey to indicate the percentage for number of employees in the departments listed. This was done to determine the importance of each of the departments listed in the SMEs. Higher percentage of employees in a department would indicate the significant importance of that department to the SMEs. The ensuing section presents frequency analysis to explore each of the items in the questionnaire. The frequency analysis provided a thorough overview on each item percentage and indicated the level of significance of such practices or strategy in the SMEs. This is followed by a discussion of the approaches adopted to assess the measures used in the analysis. The next section starts with a description of how missing values and outliers are treated in the sample. The techniques to analyse the data are discussed and justified. Particular attention is paid to the approach taken in dealing with Common Method Variance (CMV). After that, separate factor analyses for the dependent variables, financial and innovation performance are presented.

5.1   Descriptive Data

The total number of contact details given by SME Corp was 1,106. From this total number, 640 companies were from the manufacturing industry, 376 from services and other industry. A total of 90 companies were awarded the 1-Innovation Certification for Enterprise Rating & Transformation (1-InnoCERT). The survey questionnaire was emailed directly to the senior management of each company using QUALTRICS, an

online survey system. A total of 189 questionnaires were answered and returned. However, only 144 were usable (the remaining 45 were excluded due to missing data), given the confidentiality and complexity of the questionnaire. Therefore, the effective response rate was 13%, which is above the typical response rate of 10% for studies in SMEs (Dennis Jr. 2003). The low response rate was comparable to other studies on SMEs in Malaysia (Ho et al. 2016).

Out of the 144 companies included in the analysis, 41 had received the 1-InnoCERT. Even though the sample-frame was taken from SMEs' contact details given by SMECorp, two open-ended questions were included in the survey requesting information from senior management about the number of employees in their respective companies and sales turnover. However, 19 respondents were reluctant to share their company's sales turnover figures. These two questions were asked in order to double-check the current size of the SMEs. However, all companies were included in the analysis as the sample-frame provided by SMECorp was based on SMEs contact details as at 2013 (i.e., the year the data were given).

The respondents comprised 75% senior management team members and 25% others (senior HR managers and other senior executives in charge of HRM practices). The responding companies were also compared across the main characteristics of the sample, including industry type. The sample of 144 companies had a mean number of employees of 70 and the average age of the firms in the sample was 14 years. The sample was composed of relatively medium-sized enterprises as the mean of sales turnover of all the SMEs was RM16, 801,440. The distribution of the sample in terms of the sector of operation was as follows: Services 41%; Manufacturing 37.5%, Agriculture, Forestry, Fishing, 4.2%; Wholesale Trade 3.5%; Retail Trade 3.5%; Public

Administration 2.1%; Transportation and Public Utilities 1.4%, Construction 1.4%; and

Finance, Insurance, Real-Estate 0.7%. Mining industry was omitted from the analysis

as no SMEs fell into the category of mining industry from the dataset. In addition, to

prevent the potential of dummy variable trap, Retail Trade industry was also omitted

from the analysis. Dummy variable trap occurs when the independent variables are

multicollinear, that is, the scenario in which one or more variables are highly correlated.

Table 5.1: Age Category of the SMEs.

Age category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 10 years	57	39.6	40.4	40.4
	Between 11 and 20 years	55	38.2	39.0	79.4
	Between 21 and 30 years	21	14.6	14.9	94.3
	More than 31 years	8	5.6	5.7	100.0
	Total	141	97.9	100.0	
Missing	System	3	2.1		
Total		144	100.0		

The mean of company's age in the study was 14.34 years with a standard deviation of

9.1. This indicated that most of the companies in the study were matured and

established. Fifty-seven companies or 40.4% of the SMEs had been operating for less

than 10 years. Nearly 39% of the SMEs had been established between 10 and 20 years,

while 14.9% of the companies sampled had been operating between 20 and 30 years

old. Only a small percentage, that is, 5.7%, had existed for more than 30 years. Overall,

most companies were mature in terms of age (see Table 5.1 and Figure 5.1 below).
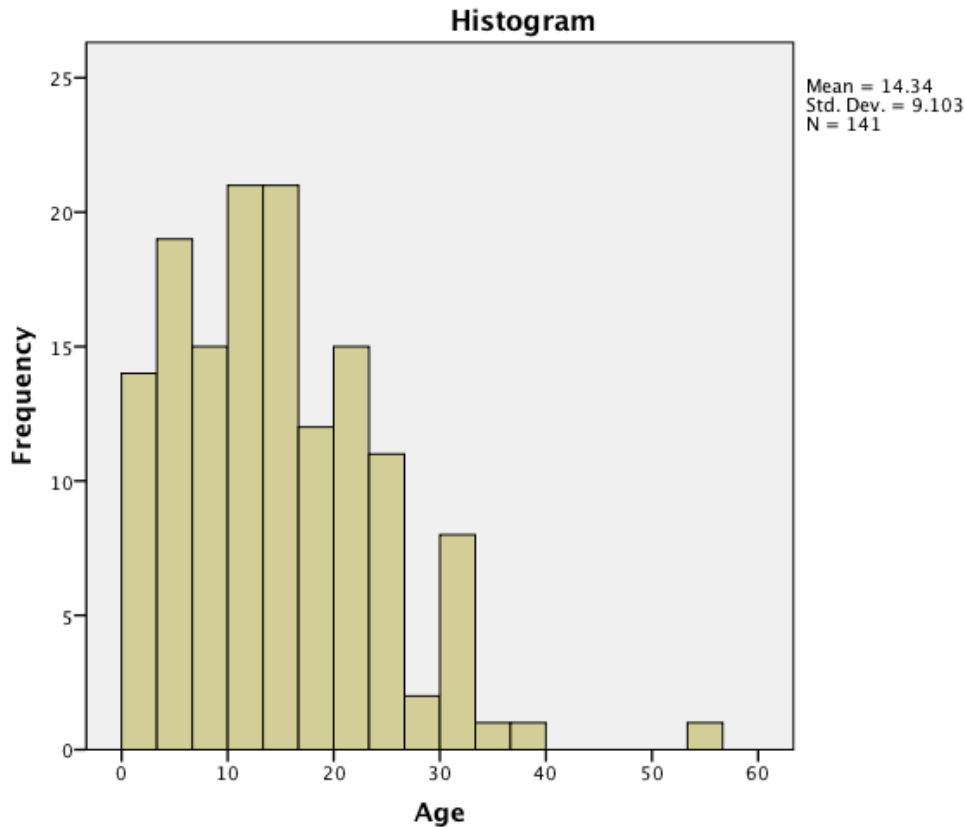
Figure 5.1: Histogram of Companies' Age Distribution.

The data obtained from SMECorp already indicated the type of industry for each company. However, the classification of industry by SMECorp Malaysia does not follow the Standard Industrial Classification (SIC) codes. Therefore, the type of industry of each respondents were recoded with this SIC code in order to generalise the result. Since the SIC codes are different from SMECorp industry code, about 30% or 41 companies respondents chose 'others' and reported their own industry group in the online survey. Some examples of the type of industry that the respondents reported were 'information technology', 'software R & D', 'commercial printer', 'agro-biotechnology', 'renewable energy', 'multimedia', 'LED light', 'law and legal' and many more. These responses were classified as closely as possible to the suitable industry classification according to SIC codes.

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Figure 5.2 shows the percentage of each industry category according to SIC codes. Manufacturing and services were the two main industries sampled in the present study. Most companies were from manufacturing industry (43%) while services industry accounted for 39% of the total respondents. The other responses came from agriculture and forestry (4.4%), public administration (2.2%), retail trade (3.6%), construction (1.5%), wholesale trade (3.6%), finance, insurance, real estate (.7%), transportation and public utilities (1.5%).
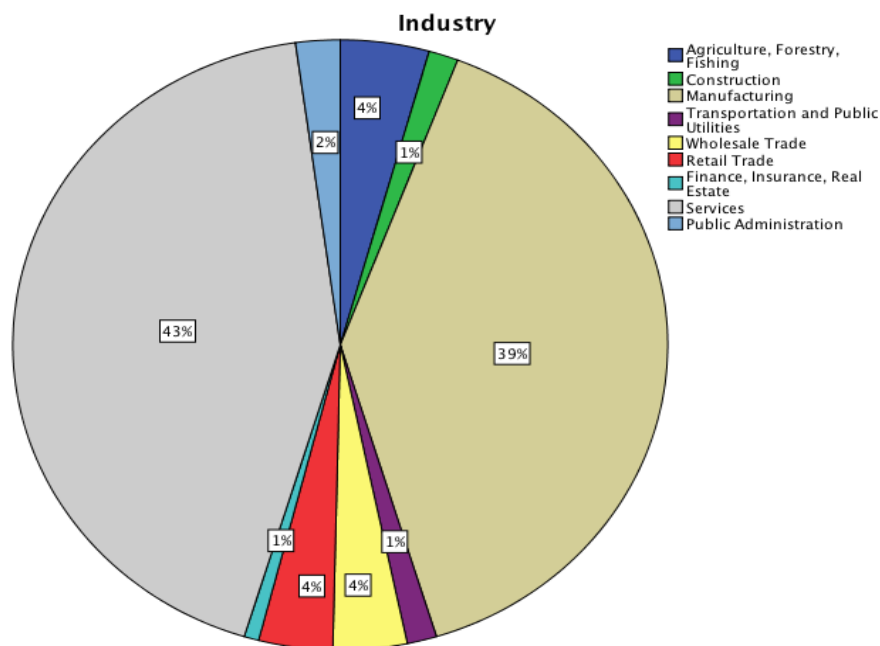
Figure 5.2: Industry Percentage According to SIC Industry Code.

The respondents in the present study who were members of the senior management of the SMEs were asked about their employees' level of education in their organisations by indicating them in percentage. The analysis was based on the mean figure of each level of education. The frequency analysis showed that only about 1% of the number of employees in the SME organisations sampled were educated up to doctoral degree or PhD level, while approximately 8% employees received education up to Master's

degree level. About 35.42% were undergraduates and approximately 22.67% had diploma qualifications. Lastly, 30.98% employees had SPM/vocational certification in the SMEs. Approximately 35.32% were skilled or technical employees and 29.42% were professionals in the sample. A total of 21.85% were semi-professional and only 14.56% of the overall employees were the clerical employees. In summary, most companies had skilled and professional employees in their organisation.

The respondents were also asked about the percentage of employees in specific departments like Sales & Marketing, Human Resource, Administration, Finance, Information Management, and Operation & Manufacturing. For most respondents, about 47.95%, worked in operation & manufacturing departments. About 16.5% of employees were in sales and marketing, 10.46% were in administration department, 9.34% in IT, 9% in finance, and 8% in human resource department. This result indicated the perception of senior management on the importance of HR in their organisations as only about 8% of the total number of employees in the company were in the HR department.

5.2   Frequencies Analysis

The percentage of respondents' answers were analysed using frequencies analysis to explore the initial pattern of respondents' answers from the survey results. This PhD research tested five important variables, namely: (1) senior management perception on the importance of HR; (2) TM practices; (3) KM strategy; (4) Financial performance; and, (4) Innovation performance. Frequency analysis was utilised to determine the initial pattern of respondents' answers. Firstly, the first three items asked respondents about their perceptions of strategic importance of HR in their respective organisations.

These would relate to the proposed moderating variable that may positively influence the association between TM and KM and their effects on organisational performance.

The first question asked the senior management about their perceptions of the advantage provided by HR practices over their competitors. 71% of senior management respondents agreed (somewhat agreed, agreed and strongly agreed) that their company HR practices had provided them with an advantage over their competitors. Only 9.8% of the senior management disagreed with the statement. However, 19.2% of the respondents chose to neither agree nor disagree that the competitive advantage had been as a result of HR practices of their companies compared to that of their competitors. The second question asked senior management about their perceptions of whether their HR practices enabled their companies to perform better than their competitors. Majority of the respondents (75.3%) agreed with this statement while 16.4% were neutral and only 8.3% disagreed. Lastly, the senior management were asked about their perceptions of whether their company's HR practices had been critical to the success of their companies. About 87.7% of them believed that HR practises would be the critical success factors for the companies. The pattern of the frequency analysis indicated positive perceptions of senior management on the strategic importance of HR as more than 70% of the respondents believed that strategic HR would be important for their organisations.

The second construct of this study is TM practices. Respondents were asked about TM practices implementation in their companies and compared their company TM practices with those of the industry practices.

The first TM practices asked were about the identification and assessment of talent positions in the respondents' respective companies. About 34.2% of the respondents believed that their company TM practices had been superior to those of the industry practices. More than half of the total number of respondents or 52.7% of them perceived the identification and assessment of talent positions in their respective companies to be similar to those of the industry practices while only 13% declared that TM practices in their companies were below those of the industry practices.

The second item that asked the respondents about TM practices in their companies was related to selection and recruitment of talented staff. Almost 30.8% of the respondents believed that their companies were implementing these practices above the norms in the industry. Nevertheless, more than half of them, that is, 58.9% were neutral, or in other words, these respondents perceived the TM practices related to selection and recruitment of talented staff in their companies to be similar to those of the industry practices. Only 10.3% viewed these practices to be below industry practices. The results seemed to reflect the level of awareness and confidence of these senior management on TM practices in SMEs. Although nearly 60% of them believed that their companies had been implementing almost similar TM practices with others in the same industry, the common practices were basically related to attracting, training, and retaining the talented employees.

The third item asked about training and development programmes for talented employees. Majority of the respondents (42.4%) believed that the training and development practices implemented in their companies were above industry practices; 39.7% opted for neutral answer stating that their practices were about the same as the

industry practices and 17.9% admitted implementing training and development practices below the level of industry practices.

The fourth question requested respondents to give information about the provision of financial performance incentives to reward talented staff. A total of 48.6% of the respondents believed that their company had provided more incentives to talented staff as compared to industry practices. The other 35.6% and 15.8% stated that the incentives had been similar to the industry practices and below industry practices, respectively.

The fifth item asked respondents about their company's budget allocation specifically for TM. The majority of respondents (46.6%) declared that their company practices were about the same as those of the industry practices. A total of 28.1% of the respondents perceived that their companies had provided specific budget allocation for TM above that of the industry practices while 25.3% perceived otherwise.

Lastly, the respondents were asked about their companies' overall TM effectiveness. A total of 39.7% of the respondents perceived overall TM effectiveness of their companies to be above that of the industry practices whereas and 17.2% believed otherwise. Nearly half of the respondents, or 43.2%, viewed their companies' overall TM effectiveness to similar to that of the industry practices.

The overall results of frequency analysis for TM practices variable indicated that retaining talented employees would be the most challenging practices in SMEs. Hence, more effort would be needed as nearly half of the respondents believed that their companies had provided more incentives to talented employees compared to those of the industry practices.

Information was also collected on KM strategies in Malaysian SMEs. Seven items were chosen in evaluating the KM strategies implemented in respondents' companies. The first item sought the agreement of respondents on the following statement: *"My company often converts corporate culture or shared values into documented materials"*. Slightly more than half of the respondents, or 55.5 %, agreed with the statement, while 32.2% were neutral and 12.4% disagreed with the statement. The second item was *"My company often converts employee knowledge or expertise into documented materials"*. This item received 65% responses from respondents who agreed with the statement, while 25.3% neither agreed nor disagreed, and 9.6% disagreed. The third item was *"My company often enhance productivity (product/service quality and quantity) by renewing equipment"*. For this statement, 63% respondents agreed, 30.8% were neutral and 6.1% respondents disagreed. Furthermore, when asked about the following statement*: "My company encourages patent applications so that employees or expertise all over the country can be converted into company-owned assets"*, 46.5% of respondents agreed with the statement, while 37.7% were neutral and 15.7% of respondents disagreed. The above four questions mainly asked questions related to technology-centred KM strategy.

The following three items explored the people-centred KM strategy. The first statement for this sought the respondents' agreement on the following statement: *"In my company, most of the knowledge is embedded in employees all over Malaysia"*. A total of 46.9% of respondents agreed with the statement, while 25.3% were neutral and 17.9% disagreed. The second item for people-centred KM strategy asked about knowledge sharing in respondents' companies. The second statement was: *"In my company, knowledge is often shared through personnel interactions, such as mentoring*

or rotations". Majority of the respondents, 79.5%, agreed with the given statement, while 15.8% remained neutral, and only 4.8% disagreed. Lastly, respondents were given a statement related to knowledge acquisition. The third statement was: *"My company often acquires knowledge through strategic alliances, technology cooperation, mergers, acquisitions, or technology licensing"*. The frequencies analysis showed 58.9% of agreement, 26.7% neutral opinion, and 3.4% disagreement.

In summary, KM strategy variables reflected the importance of KM strategy in SMEs as the frequency results of respondents agreeing with the given statements that related to KM strategy ranged from 56% to 80%. What stands out from the result is that senior management were more concerned and agreed that this particular KM strategy would be important for their respective companies.

The first dependent variable in this study is financial performance. Respondents were asked to rate their company's performance over the three years compared to the competitors in their industry. There were three items under financial performance construct. The first of these was *growth of sales*. The frequencies analysis indicated that 64.4% of the respondents answered that their companies performed better financially than their competitors, while 26% respondents believed that their companies' financial performance was equal to that of the competitors. Only 9.6% perceived their companies to have performed financially worse than their competitors.

The second financial performance indicator was *profit margin on sales*. A total of 61% of respondents believed that their companies were better off than their competitors in terms of profit margin on sales while 26% respondents believed that

their companies were on par with their competitors. Only 13% respondents thought that their companies' profit margin on sales were worse than that of their competitors.

The last financial performance indicator was *return on investment.* About 58.3% of respondents stated that their companies' return on investment were better than that of their competitors while 11.6% stated otherwise. Approximately 30.1% of respondents stated that their companies' return on investment was about the same at that of their competitors in the same industry. Although these three items subjectively measured senior management's perceptions of their companies' current financial performance, these three items reflected the positive performance of Malaysian SMEs.

The second dependent variable in this study is innovation performance. Respondents were asked to state the performance of their companies as compared to their competitors with respect to innovation performance.

The first item under innovation performance construct was about replacement of products being phased out. About 63.7% of respondents believed that their companies were performing innovatively better than their competitors; 28.8% thought that innovation performance of their companies was about the same with that of their competitors while 7.6% believed that their companies were not performing innovatively any better or in other words, worse than their competitors.

The second item for innovation performance was related to extension of product range within main product field through technologically *new* products. Majority of the respondents, that is, 69.2% of the senior management stated that their companies were performing innovatively better than their competitors in this regard. Slightly more than one-fifth of the total number of respondents, or, 22.6%, perceived their companies to

be performing the same as their competitors. Only 8.3% said that their companies were worse off than their competitors.

The third item was related to extension of product range within main product field through technologically *improved* products. A total of 73.3% of the respondents said that their companies were better than their competitors whereas 5.4% said otherwise. The remaining 21.2% remained neutral about their companies' performance in extension of product range within main product field through technological *improved* products, compared to that of their competitors.

The fourth item asked about extension of product range *outside* main product field. Similarly, majority of respondents, that is, 65% the senior management sampled in the present study believed that their companies were better than their competitors in this aspect although about 23.3% of the respondents said that their companies' performance was about the same as that of their competitors. Only 11.6% thought that their companies had performed worse than their competitors in the same industry in this aspect. In addition to that, when asked about the development of environment-friendly products in the companies, 63% stated that their companies were doing better than their competitors, while 30.8% remained neutral, and only 6.1% believed that their companies were doing worse compared to their competitors.

Meanwhile, respondents were also asked to rate the market share of their companies. More than half of the respondents comprising 63.1% of the senior management sampled in the present study stated that their companies' market share was better than that of their competitors while 25.3% thought that their companies had equal

share of the market with their competitors. Only 11.6% stated that their companies' market share evaluation was worse, compared to competitors in the same industry.

Furthermore, innovation performance in terms of the possibility of opening of new markets abroad was also asked. Majority of the respondents, that is, 64.8% of the senior management thought that they were performing better, 24% rated their companies' performance to be about the same with that of their competitors, and 11% evaluated their companies to be worse than their competitors.

Finally, the last item in evaluating innovation performance was related to the possibility of opening of new domestic target groups. For this item, 66.4% respondents believed that their companies were performing better than their competitors in this aspect whereas 8.3% believed otherwise. The remaining 25.3% of the respondents thought their companies' innovation performance in that aspect was about the same as that of their competitors.

In conclusion, since both dependent variables (i.e., financial performance and innovation performance) subjectively measured organisational performance, nearly all frequency analysis results were leaning toward positive perceptions of organisational performance. Hence, this PhD study also included other objective measures for innovation performance to increase the reliability of the analysis of the results which will be discussed in the next chapter.

5.3   Assessment of Measures

Normality and Data Transformation

Correlation and multiple regression research design requires data to be normally distributed. Hence, normality test was performed on all items in the questionnaires.

Whether the distributions had satisfied the normality assumption could be detected by analysing the skewness. The rule of thumb for skewness category is as follows: <-1 or >+1 for highly skewed; (2) between -1 and -0.5 or between +0.5 and +1 for moderately skewed; and, (3) between – 0.5 and +0.5 for approximately symmetrical. All items involved in this study were examined by analysing boxplot, histogram and normality plot via descriptive statistics function in SPSS version 24. The results indicated that there were highly and moderately skewed items. For this study, the present researcher only transformed highly skewed items. The items that were transformed using log normal transformation were KM strategy (item numbers 1, 2, 3, and 5), TM practices (item number 5), financial performance (item numbers 1 and 3), innovation performance (item numbers 1, 2, and 3), and perceived strategic importance of HR (item numbers 1, 2, and 3). After all the items were normalised, the research variables were grouped into TM practices, KM strategy, Senior managements' perceived strategic importance of HR, Financial Performance, and Innovation Performance.

Skewness and Kurtosis

After the transformation process using log transformation, the skewness and kurtosis analysis were performed to check the current normal distribution (Sharma 1996). Skewness is the symmetry of the mean distribution of a variable, while kurtosis is the peakedness of the mean distribution. The study expected that the values of skewness and kurtosis were not significantly different from zero, and that would signal normal distribution of the continuous variables (Tabachnick & Fidell 2001). In order to test whether the variables were normally distributed, descriptive statistics of the data were examined and the results of univariate analysis are presented in Table 5.2.

Table 5.2: Scores of Skewness and Kurtosis.

	Mean	**Std. Deviation**	**Skewness**		**Kurtosis**	
			z-value	Std.er	z-value	Std.er
TM Practices	3.2	.68	-.30	.20	1.25	.40
KM Strategy	1.3	.21	-.49	.20	-.03	.40
Financial Performance	3.5	.85	-.78	.20	.71	.40
Innovation Performance	4.9	.96	-.69	.20	.93	.40
Perceived Strategic Importance of HR	.38	.18	-.007	.20	.09	.40

If the calculated *z* value at probability of .01 is within the range of -2.58 and +2.58 (Hair et al. 1998) or less than the critical value of 1.96 for alpha level of .05 (Sharma 1996), then the normality of the distribution could be assumed. Based on the observed *z* values of the variables, all of them were within the acceptable range or acceptably "not different from zero", thus the normality assumption had been met.

5.4   Reliability and Validity Test

The result of the reliability measurement for the revised variables is shown in Table 5.3 below.

Table 5.3: Cronbach's Alpha Coefficient Values for All Revised Variables.

Constructs	**Number of items**	**Cronbach alpha**
Talent Management Practices	6	0.90
Knowledge Management Strategy	7	0.85
Financial Performance	3	0.93
Innovation Performance	8	0.92
Perceived Strategic Importance of HR	3	0.85

George and Mallery provide the following rules of thumb: "- > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable" (2003: 231). All the variables in this study ranged between 0.85 to 0.93, which indicated good and excellent reliability, and validity in the research.

Summary

This particular chapter focuses on exploring the available data to give preliminary overview and description that would be significant to this PhD research. The chapter starts with an overview of the available data and number of respondents sampled in this PhD study. The number of employees, age of each companies, sales turnover and type of industry were also explored in the QUALTRICS online survey. The distribution of respondents based on their positions and also the types of industry were also classified. Items of measurements for TM practices, KM strategy, f=Financial Performance, Innovation Performance and Senior management's perceived strategic importance of HR were adopted from past research. This chapter also describes the descriptive data and frequencies analysis as well as assessment of measures in terms of normality, skewness and kurtosis. The result of the Cronbach's alpha coefficient values for all the revised items indicated good to excellent reliability.

Chapter 6 RESULTS OF THE ANALYSIS

This chapter presents the main results of this PhD research starting with the correlation matrix of the available data. The main results were calculated based on Ordinal Least Squares (OLS) regression analysis, using SPSS version 24. There were three available measures for innovation performance, which made hypothesis-testing for innovation performance more robust. The first set of data was the main one available from the quantitative survey questionnaires sent to the targeted respondents. The second set of secondary data was the 1-InnoCERT rating classification given by SMECorp in 2013 and was later updated up to 2016. Examples of these classifications are A, AA, AAA. Binary and multinomial logistic regressions were used in order to test Hypothesis 1(b) and Hypothesis 2(b). Besides using the OLS regression, this study also ran analysis using SPSS PROCESS Macro (Hayes 2012) for conditional moderation analysis and Johnson-Neyman technique for the 'floodlight' analysis. The results of conditional moderation effects at low, moderate and high levels of moderating variables will be discussed further. In addition, for each of the hypotheses, the U-shaped quadratic relationship was further tested as recommended by Haans et al. (2016) in testing U-shaped and inverted U-shaped relationships in this study and the three-step approach in learning about the U-shaped quadratic relationship as suggested by Lind & Mehlum (2010).

6.1 Descriptive Statistics and Correlation

Table 6.1 shows the descriptive statistics and correlations results in terms of the means, standard deviations, and correlation matrix for the variables in this study. As shown in the table, TM practices were both found to be related to financial performance ($r = .51$, $p < 0.01$) and innovation performance ($r = .50$, $p < 0.01$). KM strategy was also both related to financial performance ($r = -.31$, $p < 0.01$) and innovation performance ($r = -.37$, $p < .01$). Furthermore, financial performance was related to the bottom line innovation performance ($r = .66$, $p < 0.01$). For the control variables, 1-InnoCERT was related to innovation performance ($r = .22$, $p < 0.01$) and KM strategy ($r = .19$, $p < .05$). Company's age was found to be correlated with number of employees ($r = .45$, $p < 0.01$), sales turnover ($r = .31$, $p < 0.01$), services industry ($r = -.17$, $p < 0.01$) and TM practices ($r = -.19$, $p < 0.05$). The number of employees was positively correlated with sales turnover, ($r = .40$, $p < 0.01$). Sales turnover was positively correlated with retail industry ($r = .24$, $p < 0.01$) while agriculture industry was negatively correlated with services industry ($r = -.17$, $p < 0.05$) and TM practices, ($r = -.26$, $r < 0.01$). In addition, manufacturing industry and services industry were negatively correlated ($r = -.65$, $p < 0.01$). Finance industry was found to be negatively correlated with perceived strategic importance of HR ($r = -.17$, $p < 0.05$). Lastly, services industry were positively correlated with TM practices ($r = .22$, $p < 0.01$) and perceived strategic importance of HR ($r = -.18$, $p < 0.05$).

Table 6.1: Descriptive Statistics and Correlations.

		Mean	Std. Deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1-InnoCERT	.27	.45	1.00																	
2	Age	14.34	9.10	-.04	1.00																
3	Employees	72.15	93.72	-.02	.45***	1.00															
4	Sales	27479771	48213174	-.01	.31***	.40***	1.00														
5	Agri.	.04	.20	.19**	.07	-.08	-.10	1.00												
6	Construction	.01	.12	-.07	-.03	-.08	-.05	-.02	1.00											
7	Manufacturing	.38	.49	.08	.10	.05	-.08	-.16	-.09	1.00										
8	Transportation	.01	.12	.06	.04	-.05	-.04	-.02	-.01	-.09	1.00									
9	Wholesale	.03	.18	-.12	.06	-.01	-.01	-.04	-.02	-.15	-.02	1.00								
10	Retail	.03	.18	-.12	.01	.06	.24***	-.04	-.02	-.15	-.02	-.04	1.00							
11	Finance	.01	.08	.14	-.11	-.06	-.04	-.02	-.01	-.06	-.01	-.02	-.02	1.00						
12	Services	.41	.49	.00	-.17**	.02	.03	-.17*	-.10	-.65***	-.10	-.16	-.16	-.07	1.00					
13	Public	.02	.14	-.09	.11	.03	.04	-.03	-.02	-.11	-.02	-.03	-.03	-.01	-.12	1.00				
14	TM practices	3.24	.68	.06	-.19**	-.03	.08	-.26***	-.01	-.09	.02	.04	.06	.03	.22***	-.11	1.00			
15	KM strategy	1.38	.21	.19**	.08	-.01	.13	-.12	.02	-.14	.12	.06	.01	.15	.14	.04	.39***	1.00		
16	PSI of HR	.38	.18	-.06	.05	-.07	-.12	.06	.06	.08	.07	-.08	-.02	-.17*	-.18**	.04	-.43***	-.25***	1.00	
17	Fin.Performance	3.58	.85	.04	-.13	.04	.03	-.06	-.01	-.07	-.06	-.01	.09	-.06	.12	-.08	.51***	-.31***	-.28***	1.00	
18	Inno. Performance	4.97	.96	.22***	-.11	.06	.07	.03	-.03	-.08	-.09	.00	.10	.10	.11	-.07	.50***	-.37***	-.30***	.66***	1.00

Notes: N=144, Standardised coefficients are reported. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. **** $p < 0.001$

6.2   Results for Hypotheses Testing

Prior to the analysis, the dataset was checked for normality and variability. The following charts in Figure 6.1 are the summaries of the normality and variability residual of all the 8 hypotheses in this study.

Hypothesis 1(a)   Hypothesis 1(b)   Hypothesis 2(a)   Hypothesis 2(b)

Hypothesis 3(a)   Hypothesis 3(b)   Hypothesis 4(a)   Hypothesis 4(b)
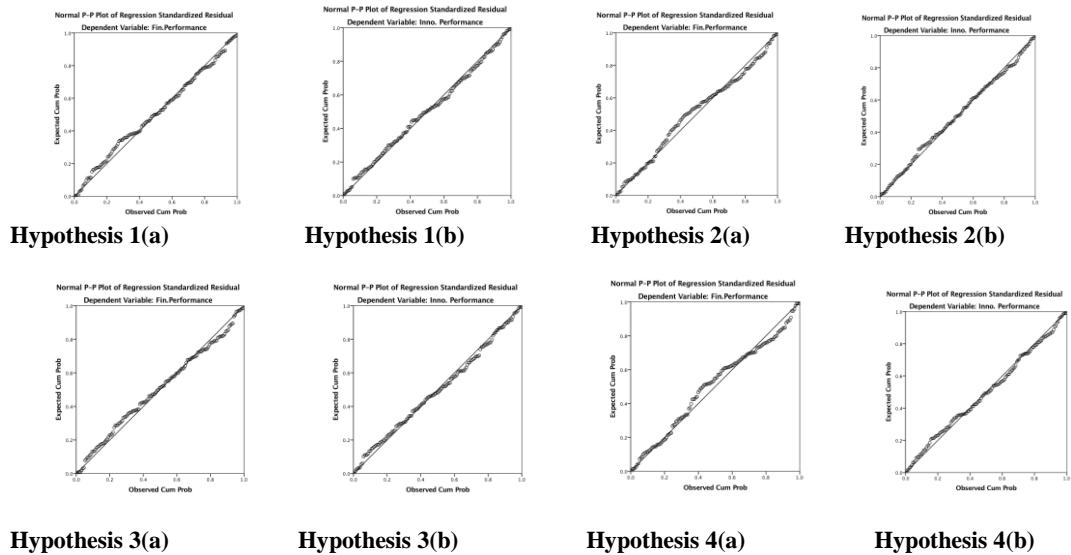
Figure 6.1: Normal P-Plot of Regression Standardised Residuals for all the Hypotheses.

The following illustrations in Figure 6.2 are homoscedasticity scatterplots for all the 8 hypotheses in this study. For normally distributed variables, both linearity and homoscedasticity had been met (Hair 1998). Homoscedasticity means that the band enclosing the residuals would approximately be equal in width for all values of the predicted dependent variables (i.e., financial performance and innovation performance). Figure 6.2 presents the scatterplots under the conditions of homoscedasticity in this study. In short, it was presumed in this study that the multivariate assumptions of normality, linearity and homoscedasticity had all been met.
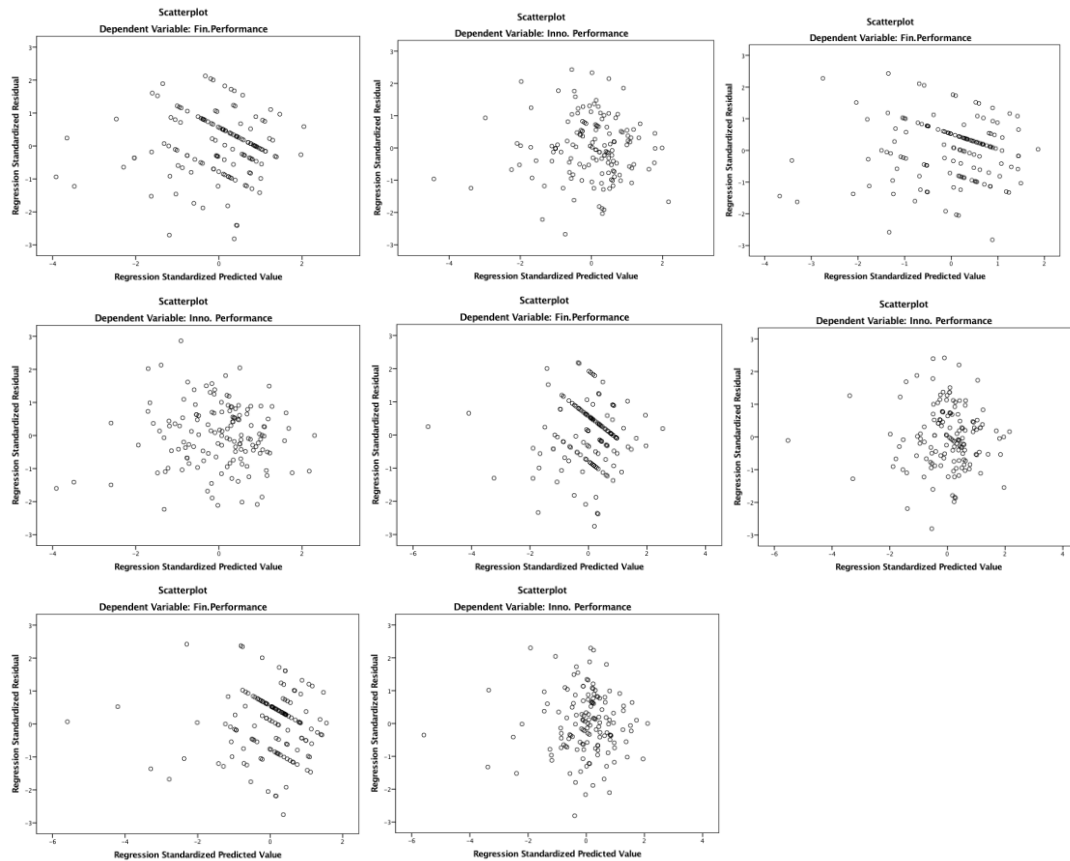
Figure 6.2: Homoscedasticity Scatterplots [from clockwise; Hypothesis 1(a), Hypothesis 1(b), Hypothesis 2(a), Hypothesis 2(b), Hypothesis 3(a), Hypothesis 3(b), Hypothesis 4(a), and Hypothesis 4(b)]

Table 6.2 shows the results of the OLS regression analysis. This method is designed to assess whether a single variable or set of variables explain additional variance over the variance explained by previous sets of variables (Cohen et al. 2003). The models in this study explained R^2 ranging from 21% to 35% of the variance in financial performance and R^2 between 27% and 38% of the variance in innovation performance. Without any variables, the baseline in Model 1 was not statistically significant. All the models in Table 6.2 were significant as the model summary for Model 2 was significant at F (2, 128) = 24.14, p < 0.001. Model 3 also indicated a significant effect at F (5, 125) = 11.1, p < .000). Model 4 [F (2, 128) = 11.76, p < .001], Model 5[F (5, 125) = 8.77, p < .000], in Model 6 [F (2, 128) = 24.47. p < 0.001], Model 7 [F (5,125) = 10.31, p < .000], Model 8 [F (2, 128) = 13.32, p < 0.001], and Model 9 [F (5,125) = 7.5, p < .001].

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Dependent variables	Financial Performance					Innovation Performance			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Control variables									
1-InnoCERT	.07	.00	-.03	.01	-.03	.14**	.12**	.13*	.12*
Age	-.16	-.12	-.2	-.22**	-.21**	-.10	-.19	-.21**	-.19**
Employees	.10	.13	.15	.14	.15	.11	.14	.13	.14
Sales turnover	.00	-.03	-.06	-.02	-.06	.02	.00	.03	.00
Agri. Ind.	-.05	.02	-.14	-.02	-.14	.23*	.10	.19	.10
Construction Ind.	.00	-.07	-.13	-.06	-.13	.01	-.03	.02	-.03
Manufacturing Ind.	-.03	-.27	-.48	-.15	-.18	.09	-.04	.18	-.04
Transportation Ind.	-.05	-.13	-.18	-.11	-.18	-.08	-.12	-.07	-.12
Wholesale Ind.	.01	-.10	-.22	-.08	-.22	.05	-.03	.07	-.03
Retail & Trade Ind.	.10	-.04	-.09	.02	-.09	.11	.08	.16	.08
Fin & Real Est. Ind.	-.08	-.13	-.26	-.11	-.26	.08	-.02	.08	-.02
Services Ind.	.07	-.27	-.48	-.12	-.14	.10	-.04	.21	-.04
Public Admin. Ind.	-.06	-.09	-.21	-.13	-.21	.04	-.06	.00	-.06
Main effects									
TMP		.50****	.36***			.48****	.40****		
TMP square		-.19**	.01			-.18**	-.06		
KMS				.30****	.20**			.31****	.24****
KMS square				-.20**	.10			-.19**	.01
Moderating variable									
PSI of HR			-.06		-.06		-.01		-.05
Interaction Effects									
TMP x PSI of HR			.18*				.09		
TMP square x PSI of HR			-.17				-.15		
KMP x PSI of HR					.14				.08
KMS square x PSI of HR					-.36**				-.28*
R^2	.06	.32****	.35****	.21****	.31****	.36****	.38****	.27****	.32****
Change in R^2	.06	.26****	.03****	.15**	.24****	.24****	.26****	.15****	.20****

Notes: N=144, Standardised coefficients are reported. * $p < 0.1$,** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Talent Management and Financial Performance

Results showed that Hypothesis 1(a) predicting a curvilinear relationship between TM practices and financial performance was supported (see Table 6.1 for OLS regression results). Hypothesis 1(a) suggested an inverted U-curved relationship between TM practices and financial performance as the main effect of TM practices was positive and significant ($\beta = 0.50$, $p < 0.001$) and the extent of TM practices squared was negative and significant ($\beta = -0.19$, $p < 0.05$). The following graph illustrates the relationship between TM practices and financial performance.
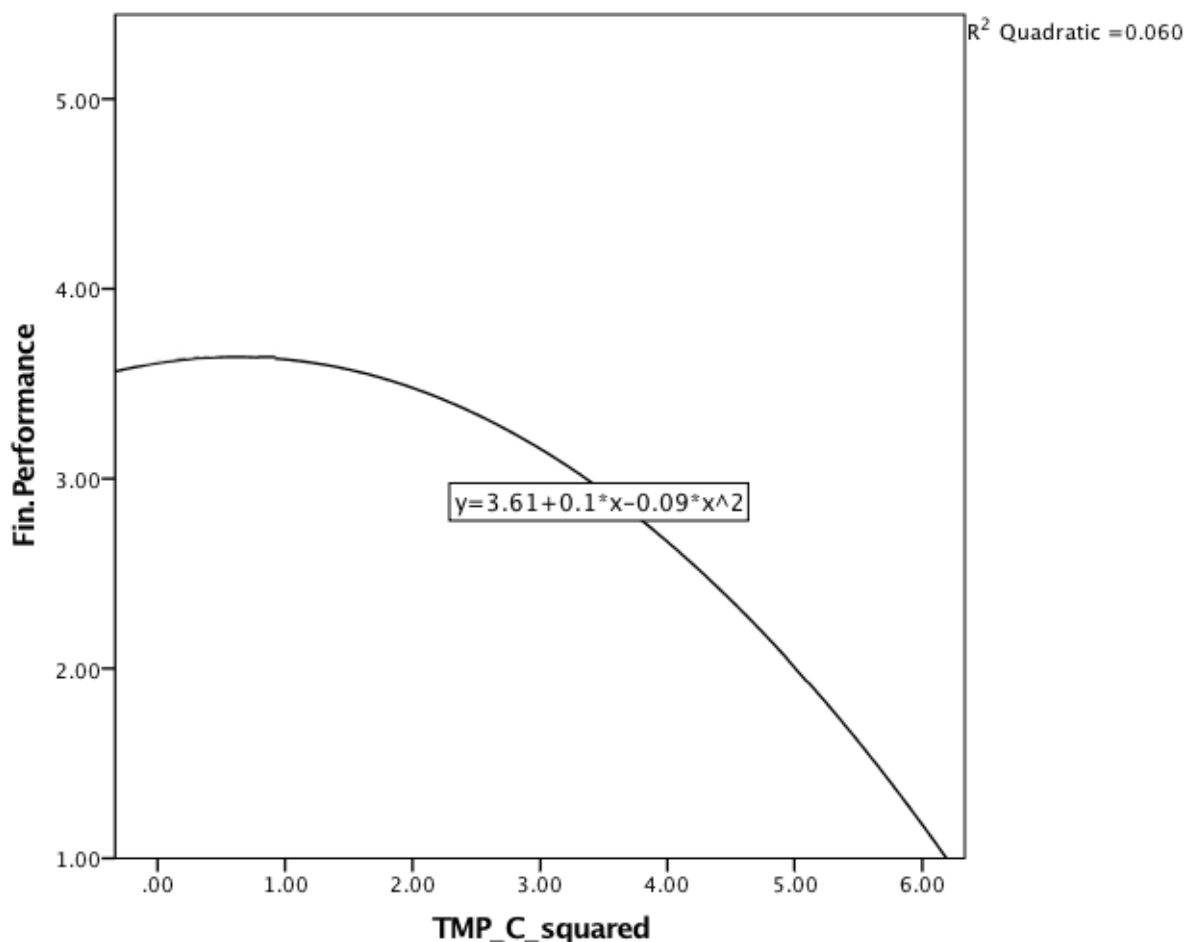
Figure 6.3: TM Practices and Financial Performance Curvilinear Relationship.

As a second test of the U-curved shape of the relationship, this study followed the recommendation made by Haans et al. (2016: 1179) in theorising and testing U-shaped relationships . Two 'countervailing forces' of cost and benefits were considered and a graph was plotted by separating the data at the turning point of the inverted U-curved. According to Haans et al. (2016), there are two types of combinations of latent mechanisms that can result in an inverted U-shaped relationship, namely, the additive and the multiplicative combinations. The following Table 6.3 illustrates the combinations of latent mechanisms resulting in an inverted U-shaped relationship.

Table 6.3: Additive and Multiplicative Combinations of Latent Mechanisms Resulting in an Inverted U-shaped Relationship (Haans et al. 2016).
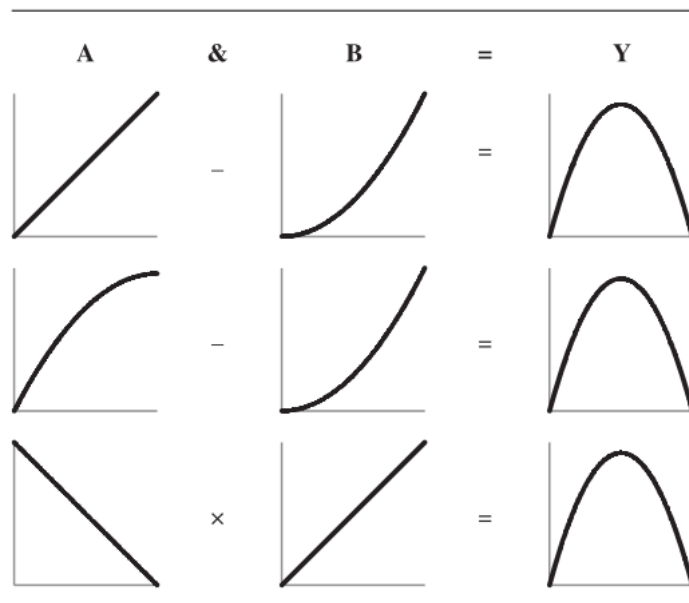
The results of this test indicated a multiplicative combination of TM practices latent mechanisms resulting in an inverted U-shaped relationship for Hypothesis 1(a) as illustrated in Figure 6.3 below.
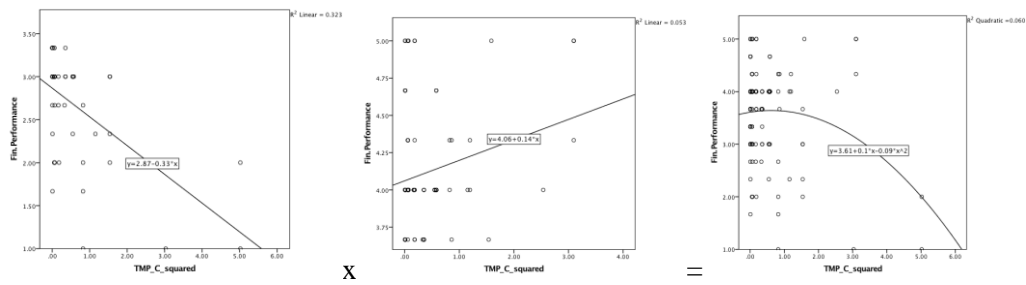
Figure 6.4: Multiplicative Combination of Hypothesis 1(a) Latent Mechanism.

As a third test, as suggested by Lind & Mehlum (2010), a three-step approach in testing for U-curved was performed. In this test, the slope must be sufficiently steep at both ends of the data range. In addition, for an inverted U-shaped curve, the slope at TM_L/KM_L, which is $\beta_1 + 2\beta_2 X_L$, should be positive and significant and the slope at TM_H/KM_H which is $\beta_1 + 2\beta_2 X_H$, should be negative and significant. Both Lind and Mehlum (2010) have further emphasised the critical importance of both slope tests to be significant. If only one is significant, the true relationship might be merely one half of a U-shapes that can be more parsimoniously fitted by Y being a logarithmic or exponential function of X. The turning point for Hypothesis 1(a) was calculated by differentiating the following formula, $Y = 3.61 = 0.1X - 0.09X^2$, dy/dx: $0.1 - 0.18X = 0$, $X = 0.56$, hence, $Y = 3.64$: (0.56, 3.64).

For Hypothesis 1(a), the inverted U-shaped relationship was re-regressed with financial performance by splitting the data into low and high ends. The result of the analysis indicated no significant relationship at TM_L: $R^2 = .081$, $F (1, 57) = .066$, $p = .798$, proving no significant slope at low end of TM variable. By contrast, at high end of TM_H: $R^2 = .211$, $F (1, 60) = 4.182$, $p < .05$, the relationship between TM_H and financial performance was significant at $\beta = -.303$, $p < .05$. Hence, the true relationship between TM practices and financial performance relationship indicated a one half of a U-shaped at high level of TM practices implementation. However, the turning point

was located well within the data range which further supported the curvilinearity of the relationship. In summary, Hypothesis 1(a) was fully supported although the last test as suggested by Lind & Mehlum (2010) had indicated a one half of a U-shaped relationship between TM practices and financial performance. This is because the turning point was located quite well within the data range which further supported the inverted U-shaped relationship.

Talent Management and Innovation Performance

Hypothesis 1(b) proposed an inverted U-shaped relationship between TM practices and innovation performance. This study utilised three different innovation performance measures. The first innovation performance was measured using the survey results while the second and third innovation performance measures used secondary data of 1-InnoCERT rating as dependent variables. For the first approach, the R^2 in Model 6 indicates 36% of the variance in innovation performance was explained by all the variables in the model (see Table 6.2). What stands out in Table 6.2 is that Hypothesis 1(b) also described an inverted U-shaped association between TM practices and innovation performance as the main effect of TM practices was positive and significant ($\beta = 0.48$, $p < 0.001$) and the extent of TM practices was negative and significant ($\beta = -0.18$, $p < 0.05$) with innovation performance.
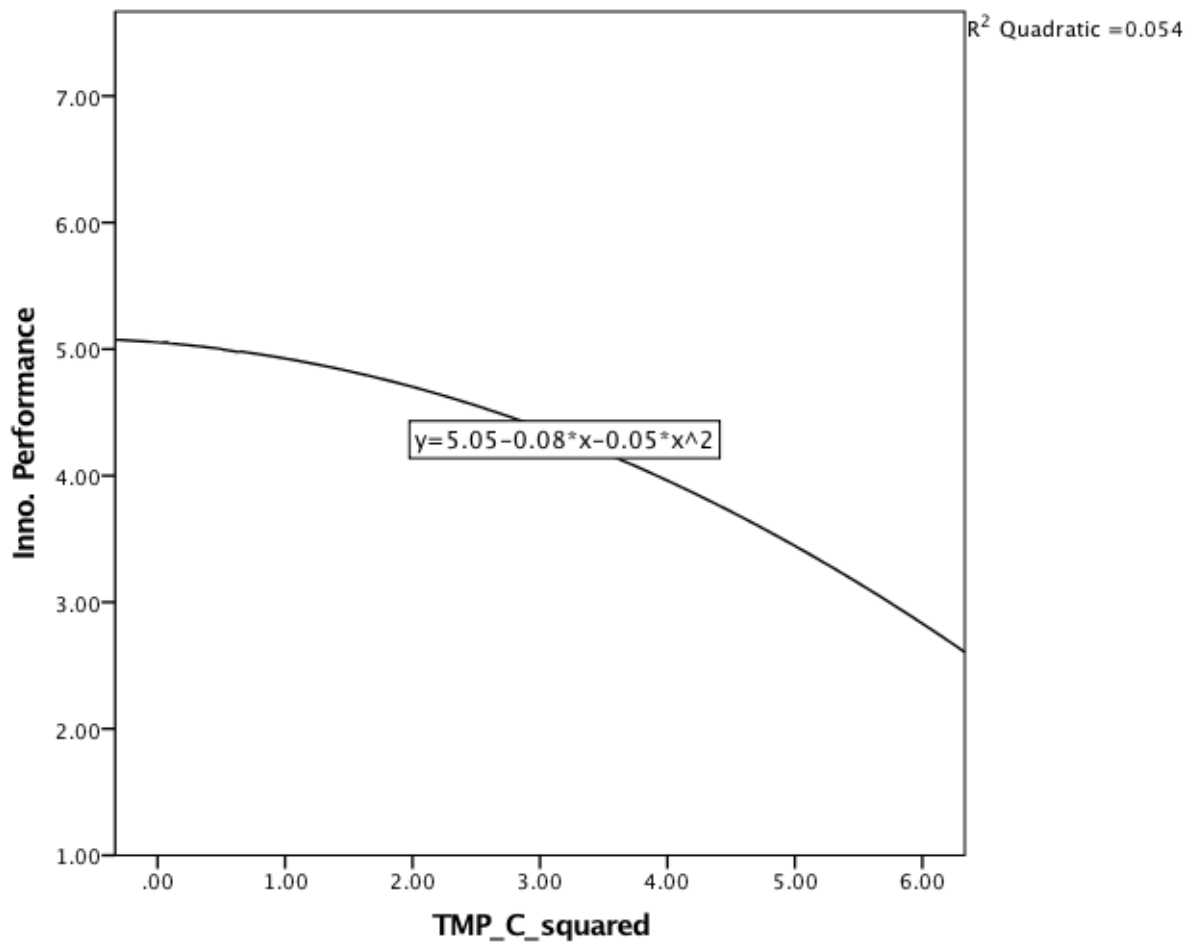
Figure 6.5: TM practices and Innovation Performance Relationship

In addition to the OLS multiple regression result, this PhD study also followed the recommendation made by Haans et al. (2016) in the second approach of testing the curvilinear relationship. This approach suggests that the sample base should be split on the turning point and separate regressions should be conducted to further confirm the existence of a curvilinear relationship especially the inverted U-curved. In order to find the turning point of this graph, $Y = 5.05 - 0.08X - 0.05X^2$, $dy/dx = 0$ of the equation was calculated. The turning point for TM practices and innovation performance curvilinear relationship was at (-0.8, 4.09). The sample was split at 4.09 of innovation performance.
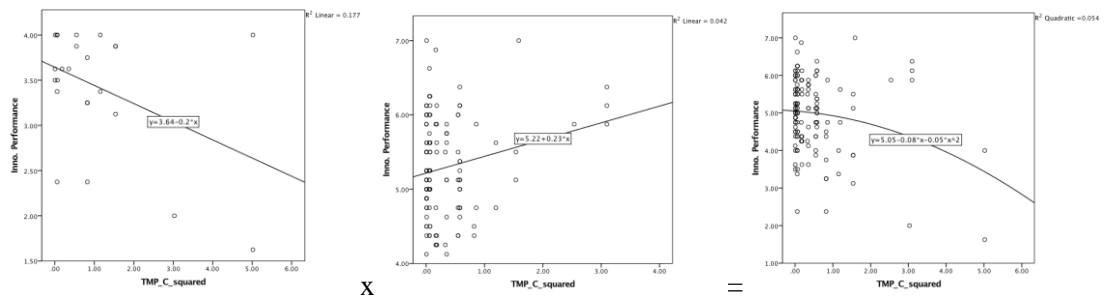
Figure 6.6: Multiplicative Combination of Hypothesis 1(b) Latent Mechanism.

The result of this analysis indicated a multiplicative combination of TM practices latent mechanisms resulting in an inverted U-shaped relationship for Hypothesis 1(b). However, the graph of the inverted U-shape did not yield a nice inverted U-shaped curve and the turning point was not located well within the data range. Hence, further analysis to test the robustness of the curvilinear was made using the following approach.

Similarly, the third test, as suggested by Lind & Mehlum's (2010) in their three-step approach, was utilised to reaffirm the U-curve relationship. Following the same procedure as explained earlier in testing the relationship between TM practices and financial performance, the U-curve relationship between TM practices and innovation performance was assessed. Results showed TM_L and innovation performance relationship $R^2 = .192$, $F (1, 57) = .113$, $p = .738$. The relationship between TM_L and innovation performance was found to be not significant at $\beta = -.041$, $p = .738$. By contrast, TM_H and innovation performance yielded $R^2 = .287$, $F (1, 60) = 2.053$, $p = .157$. The relationship between TM_L and innovation performance was also found to be not significant at $\beta = -.202$, $p = .157$. Thus, the relationship between TM practices and innovation performance were not significantly quadratic in nature as TM_L and TM_H relationship with innovation performance were not significant.

In addition, this PhD study also utilised other innovation performance measures besides the data obtained from the online survey. This analysis tested the association

between TM practices and innovation performance using the second innovation performance measures by separating companies with 1-innoCERT certification and non-certified companies. In order to test Hypothesis 1(b), binary logistic regression was used (see Table 6.4). This analysis utilised a different set of dependent variables, namely, 1-InnoCERT-certified companies (41 companies) and non-1-InnoCERT-certified companies (103 companies). The SMEs were divided into two dichotomous groups: 1 = 1-InnoCERT certified, 0 = non-1-InnoCERT- certified. The model proved to be statistically significant as this was supported by the value of Chi-Square = 11.52, $p < 0.1$, indicating that the model was able to separate innovative and non-innovative SMEs based on 1-InnoCERT certification. The model explained between 7.7% (Cox and Snell R-square) and 9.3% (Nagelkerke R-Square) of variance. However, the result of Hypothesis 1(b) in the binary logistic regression did not produce any significant effect ($\beta = -0.054$, $p = 0.86$) and thus did not support Hypothesis 1(b).

Table 6.4: Binary Logistics Regression Results.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1ᵃ	TMP	-.054	.308	.031	1	.860	.947
	KMS	1.969	1.035	3.622	1	.057	7.165
	Constant	-3.539	1.486	5.669	1	.017	.029

a. Variable(s) entered on step 1: TMP, KMS.
Notes: N=144, Standardised coefficients are reported. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. **** $p < 0.001$
The control variables (i.e. Age, number of employees, sales turnover and industry) results are not included in the table above.

The third analysis utilised the third innovation performance measurement by separating innovation performance variable into four categories of 1-InnoCERT rating (A, AA, AAA and not certified companies). As the estimated coefficients in Table 6.5 suggest, TM practices had no significant relationship with innovation performance for A, AA, and AAA when 'Not-certified 1-InnoCERT' became the reference category. Hence, the result also did not support Hypothesis 1(b).

Table 6.5: Multinomial Logistic Regression Result.

Parameter Estimates

1-InnoCERT certification category[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
A	Intercept	-.900	1.893	.226	1	.634			
	TMP	-.004	.446	.000	1	.992	.996	.415	2.385
	KMS	-.811	1.505	.291	1	.590	.444	.023	8.485
AA	Intercept	-7.158	2.390	8.965	1	.003			
	TMP	-.070	.422	.028	1	.868	.932	.408	2.131
	KMS	3.964	1.560	6.454	1	.011	52.668	2.474	1121.368
AA A	Intercept	-8.614	3.765	5.235	1	.022			
	TMP	.089	.643	.019	1	.889	1.094	.310	3.860
	KMS	3.910	2.434	2.581	1	.108	49.901	.423	5885.277

a. The reference category is: Not-certified 1-InnoCERT.
  Notes: N=144, Standardised coefficients are reported. * p < 0.1, ** p < 0.05, *** p < 0.01. **** p < 0.001

In summary, although the results of OLS regression analysis indicated significant result for an inverted U-curved relationship, further tests as recommended by Haans et al. (2016) and Lind & Mehlum (2010) indicated non-significant results for Hypothesis 1(b) to be considered as an inverted U-shaped quadratic relationship. The same applied to the hypothesis testing using different innovation performance measures, that is, the secondary data of 1-InnoCERT rating given by SMECorp. The analyses with the second and third set of innovation performance measures that followed indicated no supporting results for Hypothesis 1(b). Therefore, Hypothesis 1(b) was not supported.

Knowledge Management Strategy and Financial Performance

Hypothesis 2(a) predicted a curvilinear relationship between KM Strategy and financial performance. The R^2 in Model 4 indicated 21% of the variance in financial performance was explained by all the variables in the model (see Table 6.2). Strong support was found for Hypothesis 2(a), which described an inverted U-shaped relationship between

KM strategy and financial performance as the main effect of KM strategy was positive and significant ($\beta = 0.30$, $p < 0.001$) and the extent of KM strategy squared was negative and significant ($\beta = -0.20$, $p < 0.05$).
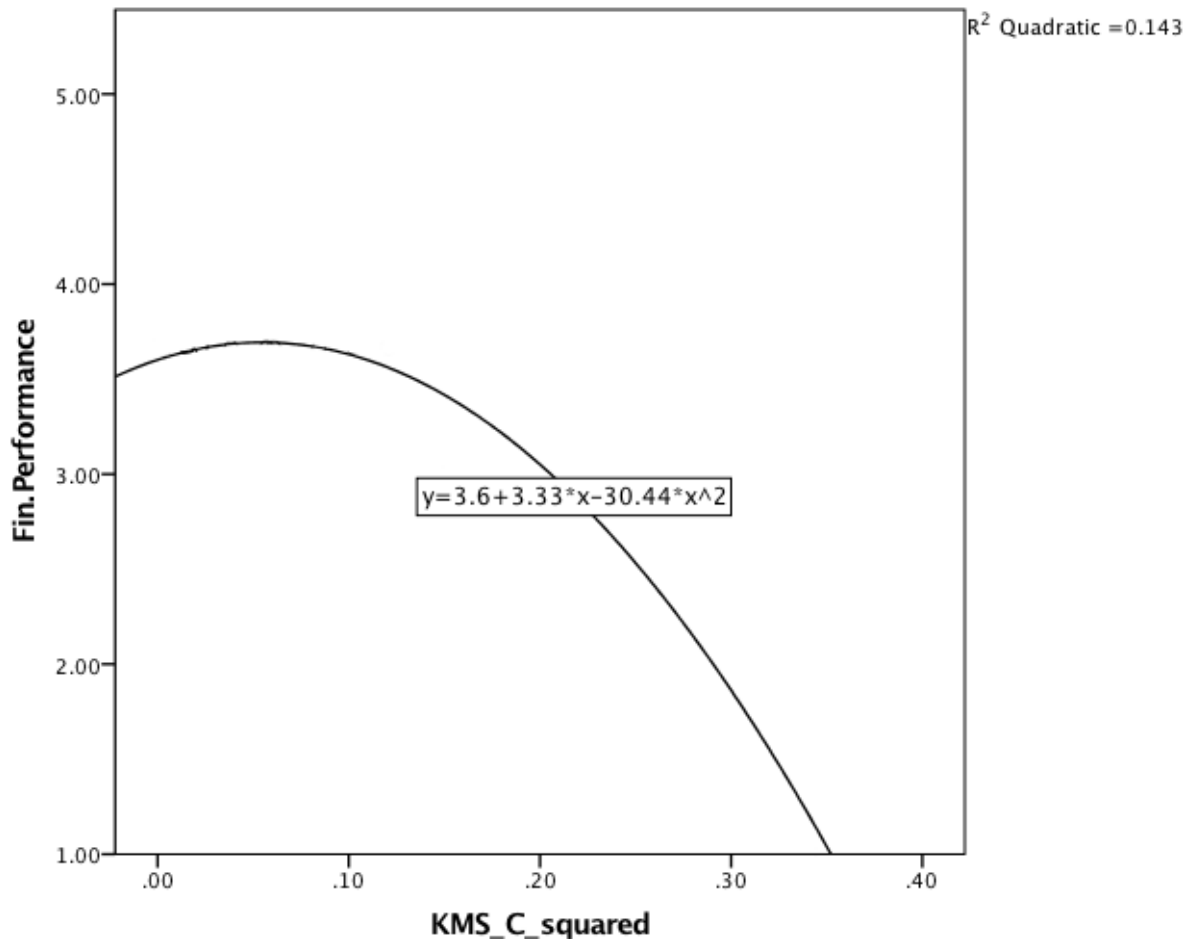
Figure 6.7: KM Strategy and Financial Performance Relationship

As a second test of the U-curved shape for Hypothesis 2(a), the sample base was split on the turning point and separate regressions were conducted to further confirm the existence of a curvilinear relationship. The turning point of the following graph was calculated by differentiating the curvilinear relationship equation, $Y = 3.6 + 3.33X - 30.44X^2$. $Dy/dx = 3.33 - 60.88X = 0$. Hence, $X = 0.06$, $Y = 3.91$. At turning point of (0.06, 3.91), innovation performance was split at 3.91 and the linear graphs of both

sides were plotted separately for the inverted U-curved graph. The result of the multiplication of both sides illustrates an inverted U-shape graph with the turning located nicely within the data range (Figure 6.8 below).
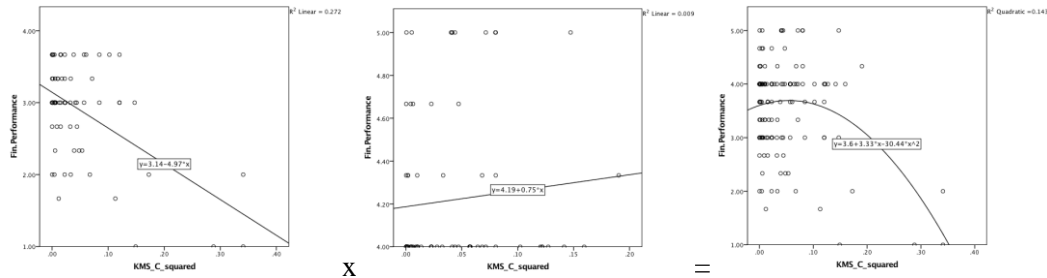
Figure 6.8: Multiplicative Combination of Hypothesis 2(a) Latent Mechanism.

As a third test, Lind & Mehlum (2010) three-step approach was utilised. Separating KM strategy variable into KM_L and KM_H, the result of KM strategy and financial performance relationship at low level of KM strategy, KM_L indicated R^2 of 12.9%, $F (1, 61) = 3.17$, significant at $p < 0.1$. The linear regression result showed that $\beta = -.221$, $p < 0.1$ indicating a significant negative linear relationship. By contrast, with $R^2 = 25.7\%$, $F (1, 56) = 10.23$, $p < .002$, the relationship between KM strategy at high end, KM_H was significant at $\beta = .44$, $p < .002$. Hence, since both of the slope tests were significant, the true relationship was an inverted U-shaped quadratic relationship. Therefore, Hypothesis 2(a) was purely supported based on all these three tests of U-curve analysis.

Knowledge Management Strategy and Innovation Performance

Hypothesis 2(b) proposed an inverted U-shaped relationship between KM strategy and innovation performance. This study utilised three innovation performance measures. The first measure made use of the results of the quantitative survey, the second measure was obtained by dividing the companies into 1-InnoCERT-certified and non-1-

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InnoCERT-certified companies, while the third innovation performance measure was obtained by dividing companies based on the types of 1-InnoCERT rating (i.e., A, AA, AAA, and non-certified 1-InnoCERT companies). In testing Hypothesis 2(b), a few approaches were adopted to ascertain the association between KM strategy and innovation performance. Besides OLS regression analysis, this study also tested Hypothesis 2(b) with binary (see Table 6.4) and multinomial logistic regression (see Table 6.5).

The relationship between KM strategy and innovation performance was hypothesised to be curvilinear and the result in Model 8 from OLS regression provided supporting result for Hypothesis 2(b); with $R^2 = 0.27$, $P < .001$ which indicated 27% of the variance in innovation performance was explained by all the variables in the model. Model 8 in Table 6.2 described an inverted U-shaped relationship between KM strategy and innovation performance as the main effect of KM strategy was positive and significant ($\beta = 0.31$, $p < 0.001$) and the extent of KM Strategy was negative and significant ($\beta = -0.19$, $p < 0.05$) with innovation performance. Hence, Hypothesis 2(b) was supported.
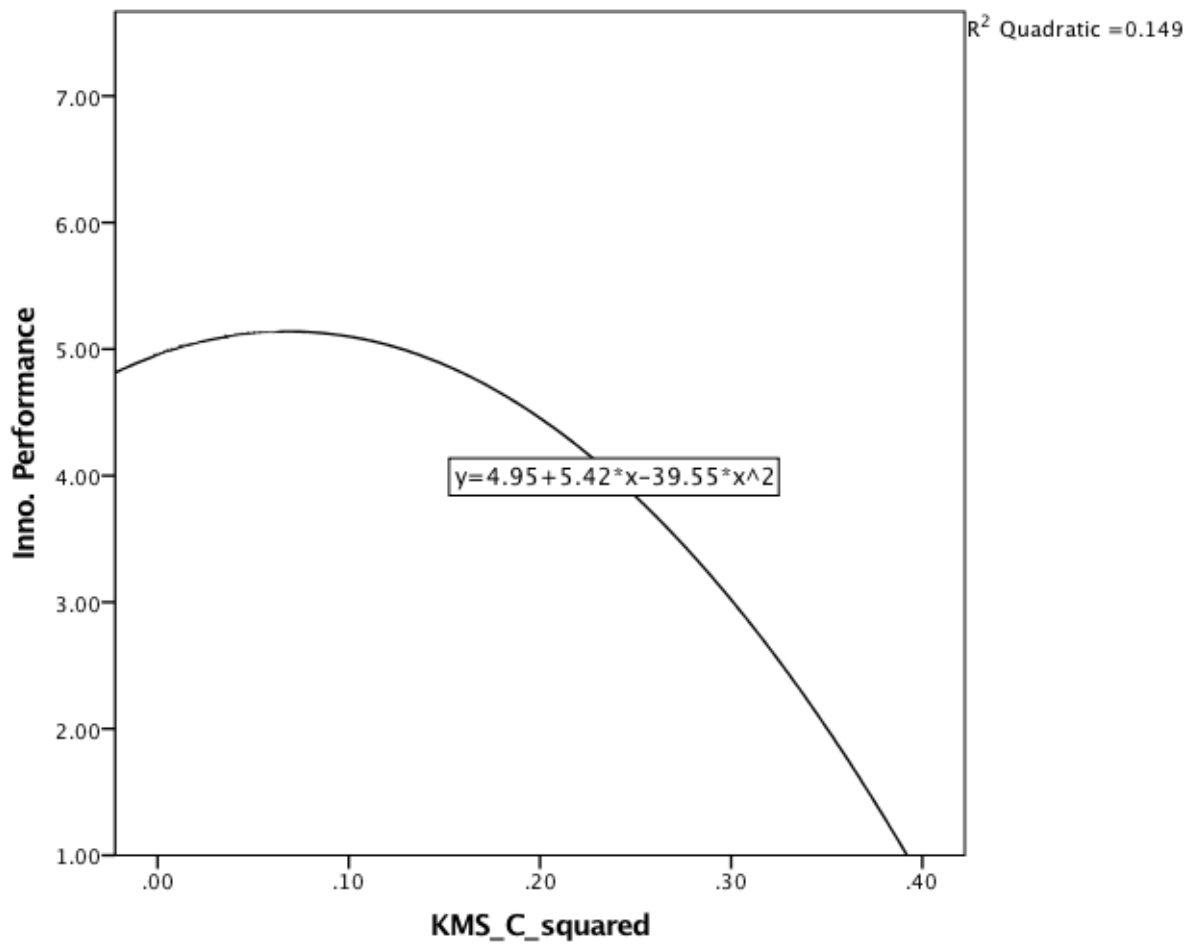
Figure 6.8: KM Strategy and Innovation Performance Relationship

This study also followed the recommendation made by Haans et al. (2016) to split the sample base on the turning point and conduct separate regressions to further confirm the existence of a curvilinear relationship. The turning point of KM–innovation performance curvilinear relationship was at: (0.07, 5.14).
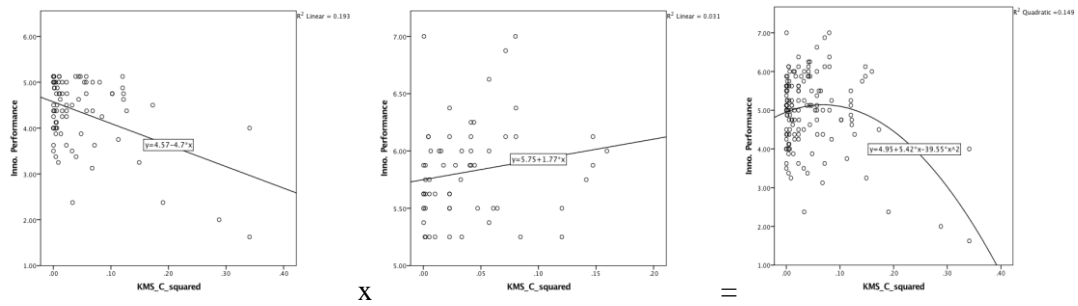
Figure 6.9: Multiplicative Combination of Hypothesis 2(b) Latent Mechanism.

The above figure illustrates an inverted U-shaped relationship between KM strategy and innovation performance relationship.

As the third test of testing the U-curved shape of the relationship, an approach was adopted by splitting the independent variable, in this case, KM strategy into high and low value, that is, KM_H and KM_L, as suggested by Lind & Mehlum (2010). As for KM_L and innovation performance relationship, $R^2 = 14.4\%$, F (1, 61) = .044, p = .834 indicating a non-significant relationship between KM_L and innovation performance. In addition, the result of linear regression relationship between KM_L and innovation performance relationship was not significant at $\beta = -.026$, p = .834. However, the result of the regression analysis for KM_H and innovation performance yielded $R^2 = .403$ indicating that 40.3% of the variance in innovation performance was explained by KM strategy at high end of the data with a model summary of F (1, 56) = 18.81, p < .000. The regression result of KM_H and innovation performance displayed significant relationship at $\beta = -.499$, p < .000. Since only one end, namely, KM_H was significant, the true relationship between KM strategy and innovation performance might be merely one half of a U-shape.

The second alternative measure for innovation performance used binary logistic regression in testing Hypothesis 2(b). As shown in Table 6.4, it is apparent that there was a significant support for hypothesis 2(b) with $\beta = 1.97$, p < 0.1, which means that

for every 1 unit increase in KM strategy, the likelihood of innovation performance to increase for SMEs with 1-InnoCERT rating certification would nearly be doubled.

In addition, using the third alternative measure of innovation performance, a more detailed analysis for Hypothesis 2(b) using multinomial logistic regression yielded better insight. The companies were separated into four categories: A, AA, AAA, and non-certified companies. As indicated in Table 6.5, as non-1-InnoCERT-certified companies became the reference category, SMEs with AA rating produced significant result, $\beta = 3.96$, $p < 0.01$. The results of multinomial regression explained that for an additional unit of KM strategy implementation in SMEs with AA rating, the odds of innovation performance would be increased by a factor of 3.96. This means for an additional implementation of KM strategy, the innovation performance would be increased nearly 4 times. In conclusion, although Lind and Mehlum's procedure did not produce a nice inverted U-shaped quadratic graph, using all the available measures for innovation performance indicated that there was full support for Hypothesis 2(b) as all the results from all three analyses (i.e., OLS regression, binomial regression and multinomial regression) for all the available three measures for innovation performance were supportive of Hypothesis 2(b).

Moderating Effects of Senior Management's Perception of Strategic Importance of HR

In Hypothesis 3(a), the senior management's perception on strategic importance (PSI) of HR was posited to positively moderate the curvilinear relationship between TM practices and financial performance. Specifically, it was expected that increasing senior management's perception would increase the positive effect of low levels of TM practices and reduce the negative effect of high level of TM practice implementation.

As shown by Model 3 in Table 6.2, 35% of the variance in financial performance was explained by the variables ($R^2 = 0.35$, p < .000). However, there was no evidence of significant interaction effect of senior management's attention on TM practices and financial performance curvilinear relationship (β = -0.17, P > 0.1). In addition to the aforementioned result, as shown in Model 3, the linear relationship between TM practices and financial performance was significant (β = 0.36, p < 0.01) and the interaction effect on the direct relationship also yielded positive significant effects (β = 0.18. p < 0.1).

By constrast, for Hypothesis 3(b), 38% of the variance in innovation performance was explained by the variables (R^2 = .38, p < 0.001). However, it is apparent from the result that Hypothesis 3(b) was also not supported; there were no significant interaction effects of senior management's attention on TM practices and innovation U-curved curvilinear relationship (β = -0.15, p > 0.1). In addition to the aforementioned result, as shown in Model 7, the linear relationship between TM practices and innovation performance was significant (β = 0.40, p < 0.001) but the interaction effect on the direct relationship was not significant (β = 0.09. p > 0.1).

In Hypothesis 4(a), it was argued that the interaction of senior management' PSI of HR would positively moderate the inverted U-shaped relationship between the extent of KM strategy and financial performance. Surprisingly, as shown by Model 5 for Hypothesis 4(a), there were negative significant interaction effects of senior management's PSI of HR on KM strategy and financial performance curvilinear relationship [Hypothesis 4(a), β interaction = -0.36, p < 0.05]. Figure 6.10 illustrates that there were the negative interaction effects on KM strategy and financial performance inverted U-shaped graph. The figure shows the observed relationships

between KM strategy and financial performance, with two values of senior management's perception: low and high, represented by the mean value of senior management's perception and one standard deviation above and below the mean, respectively. This indicated a clear evidence of negative significant interaction effect of senior management's perception on the strategic importance of HR on KM strategy and financial performance relationship at high level of senior management's attention. The graph also indicates that at low level of senior management's perception on the strategic importance of HR, the optimal point of the inverted U-curve shape is higher nearly reaching 4 unit of financial performance increment. The inflection point of the inverted U-curved graph at high level of CEO's attention is at (-0.001, 3.62) and at low level of senior management's attention is at (0.07, 3.88).
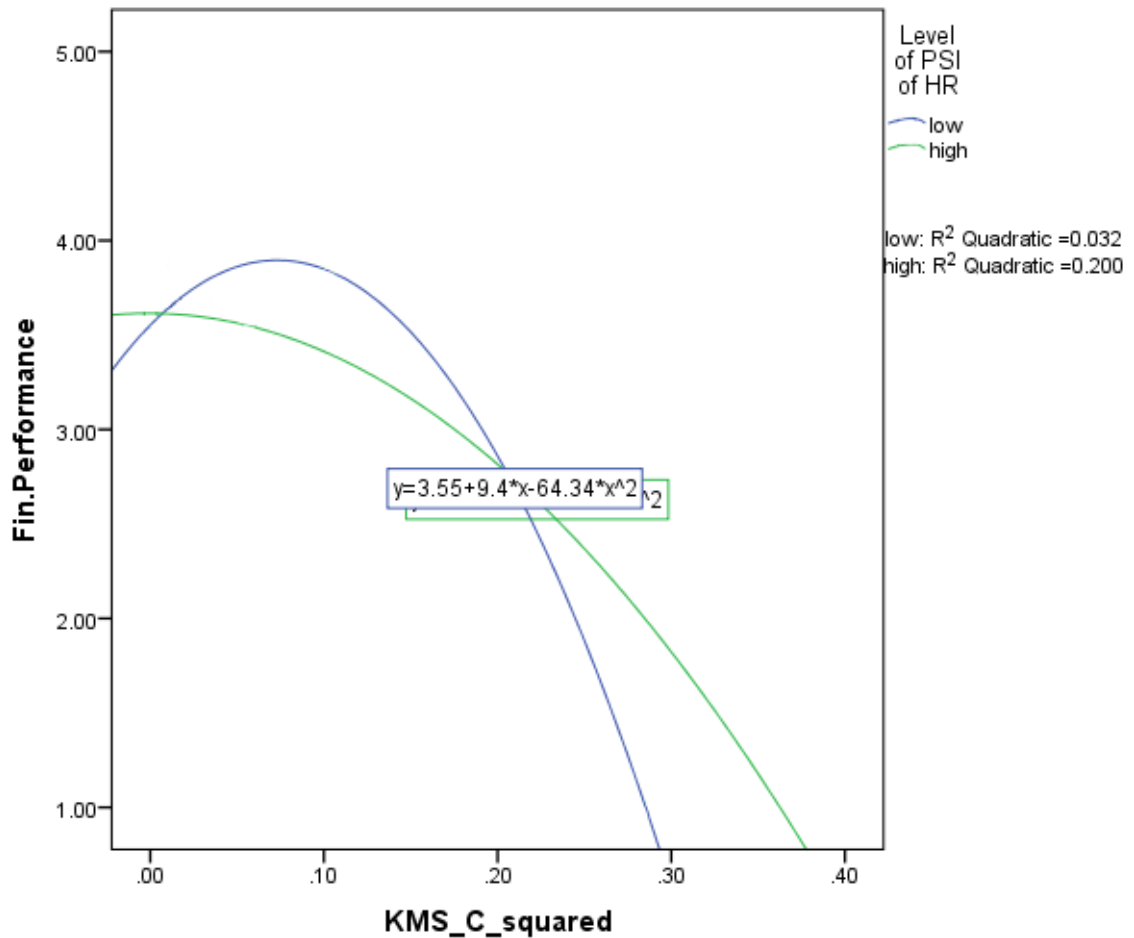
Figure 6.10: The Moderating Effect of PSI of HR for the Relationship between KM Strategy Squared and Financial Performance.

As illustrated in Figure 6.10, the downward shift of the curve is opposite to what was expected in the hypothesis, but the flattening of the right hand side of the curve may indicate some evidence of a positive effect. Since the illustrated graph could not detect the possibility of positive interaction effect, more exploratory analysis would be required to further analyse the result. Additional analysis was done by conducting a conditional moderating analysis on the moderating effects suggested in Hypothesis 4(a) in order to test the conditional moderation effect at low, moderate, and high level of senior management's attention in greater detail. This study utilised SPSS PROCESS Macro (Hayes 2013) for conditional moderation analysis (see Table 3 in Appendix 2 of this thesis for the full results).

The following Table 6.6 shows the conditional moderation effect for Hypothesis 4(a). According to the result from conditional moderation analysis, the table below indicates positive interaction effects of senior management attention at low level of attention as an increase of one unit in Senior management's attention would increase financial performance by 4.15 units (b = 4.15, p < 0.05). The result of the conditional moderation effects provided partial support for Hypothesis 4(a) as there was a possible positive significant interaction effect at low level of Senior management's attention.

Table 6.6: Conditional Effect of KM Strategy on Financial Performance at Values of the Moderator.

Moderator: Senior management's PSI of HR	Effect	se	t	p
-.18 (low)	4.15	2.13	1.95	.05
.00 (moderate)	.83	1.59	.52	.60
.18 (high)	-2.49	-1.84	-1.84	.07

Note: Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator.

The following Figure 6.11 illustrates the conditional moderation effect for Hypothesis 4(a) that was partially supported at low level of senior management's attention. The blue line indicates the low senior management's PSI of HR on KM strategy and financial performance relationship.
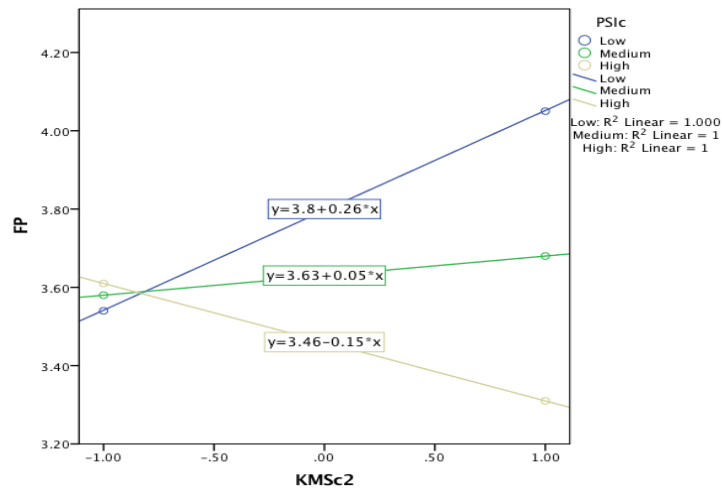
Figure 6.11: Conditional Moderation Effects for KM Strategy – Financial Performance.

In addition, the interaction effects of senior management's perception of the strategic importance of HR was also tested using Johnson-Neyman (1936) analysis that is also known as 'floodlight' analysis to show where the simple effect was significant and where it was not. As previous analysis indicates partial support for Hypothesis 4(a), this Johnson-Neyman analysis was used to study and explore the significant interaction effect on KM strategy and financial performance curvilinear relationship. Preacher et al. (2006) have recommended using bootstrap samples to measure the conditional effects. Based on their recommendation, conditional effects based on 1,000 bootstrap was analysed using Johnson-Neyman technique in SPSS PROCESS Macro. This analysis assessed the continuous moderator on an arbitrary scale and showing the range over which the simple effect was significant. Hence, for this study, the results of this 'floodlight' analysis indicated that the range of significance was between $4.26 < \beta < 7.66$ at low level of senior management's attention and $-2.68 < \beta < -7.70$ at high level of senior management's attention. These two floodlights' shines indicated a potential of non-linear interaction effects on KM strategy and financial performance curvilinear relationship. The full results of this analysis are provided in Appendix 2 of this thesis.

As shown in Figure 6.10, the inverted U-curve graph at high and low levels of senior management's attention were further explored to reaffirm the curvilinearity. Thus, the second test was dome by splitting the data at its turning point (Haans et al. 2016) in order to explore the inverted U-shaped relationships as it was being moderated by senior management's perception on the strategic importance of HR. Given the equation of moderation graphs at low and high levels of senior management's perception on the strategic importance of HR, the turning point at low level of senior management's perception was at 3.89: financial performance and at high level of senior management's perception was at 3.62: financial performance. The flattening of the inverted U-curved indicated that the curvilinearity of KM and financial performance relationship was weakened by the moderator at high level of senior management's attention as illustrated in Figure 6.12.
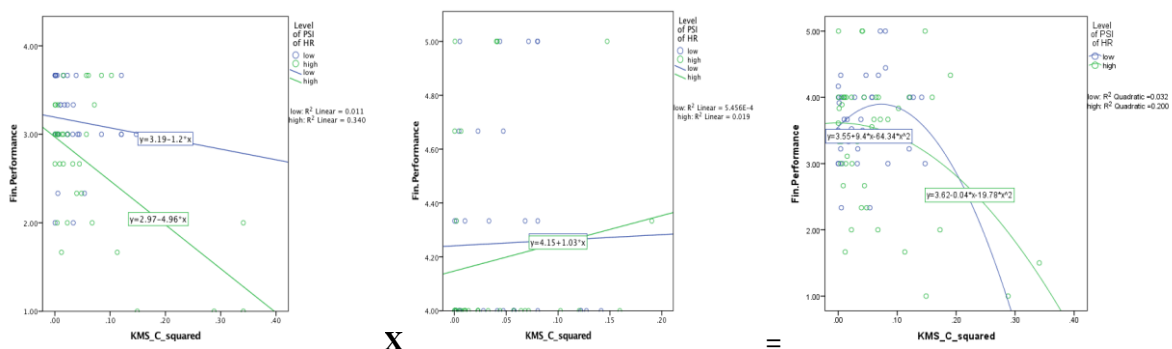
Figure 6.12: Multiplicative Flattening: Moderator Weakens at High Level of Senior management's Perception.

The third test was done by separating the independent variable at high and low levels as suggested by Lind & Mehlum (2010). As for KM_L and financial performance relationship, $R^2 = 14.4\%$, $F(1, 61) = .044$, $p = .834$ indicating a non-significant model. In addition, the result of linear regression relationship between KM_L and financial performance relationship was not significant at $\beta = -.026$, $p = .834$. However, the result of the regression analysis for KM_H and financial performance yielded $R^2 = .403$

indicating that 40.3% of the variance in financial performance was explained at high end of the data with a model summary of $F (1, 56) = 18.81$, $p < .000$. The regression results of KM_H and financial performance displayed significant relationship at $\beta = .499$, $p < .000$. Since only one end: KM_H was significant, the true relationship between KM strategy and financial performance might be merely one half of a U-shape. It can be concluded from all the above analysis that Hypothesis 4(a) was partially supported.

The results from OLS regression in Table 6.2 (Model 7 and Model 9) show that neither Hypothesis 3(b) [$\beta = -.15$, $p > 0.5$] nor 4(b) [$\beta = -.28$, $p < 0.1$] and Hypothesis 4(b) were supported because the relevant coefficients were not statistically significant for Hypothesis 3(b), and was statistically significant but with the opposite sign for Hypothesis 4(b). Hypothesis 3(b) and Hypothesis 4(b) suggested that the interaction of senior management's perception on the strategic importance of HR would have a positive moderating effect on the relationship between KM strategy and TM, on the one hand, and innovation performance, on the other. To further explore a potential moderating effect, Figure 6.13 below illustrates the observed interaction effects of senior management's perception at high and low levels on KM strategy and innovation performance relationship.
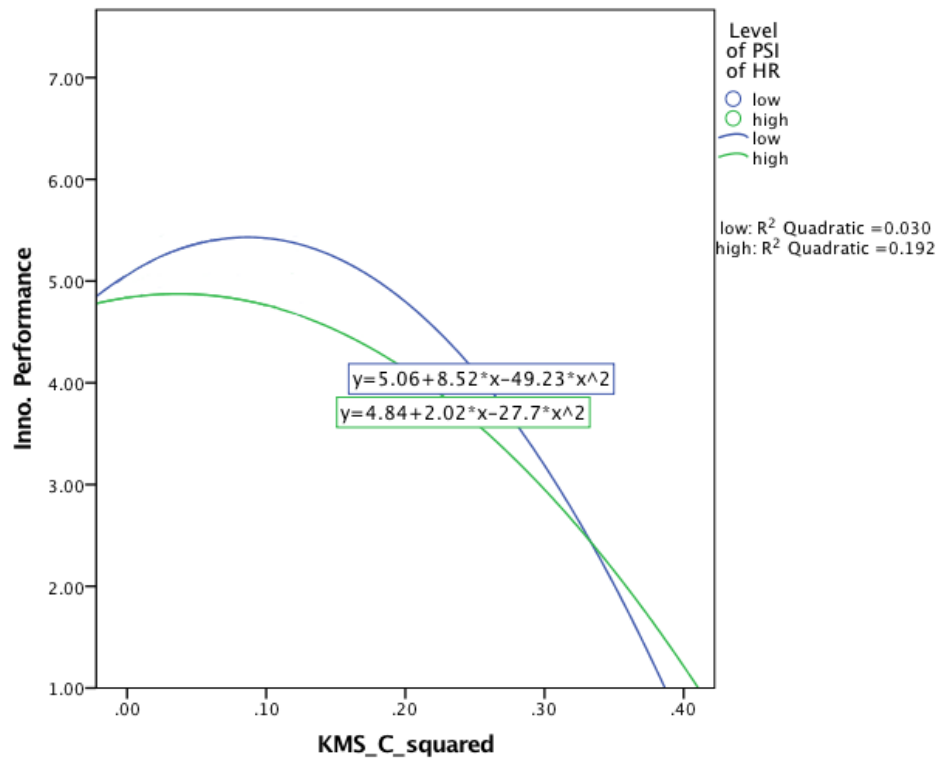
Figure 6.13: The Moderating Effect of PSI of HR for the Relationship between KM Strategy Squared and Innovation Performance.

Figure 6.13 indicates that there may be a conditional moderating effect for Hypothesis 3(b) and 4(b), which was explored through conditional moderating analysis. Hence, the conditional moderation effect was tested for Hypothesis 3(b) and Hypothesis 4(b). For Hypothesis 3(b), there was no positive significant interaction effects of senior management's perceived strategic importance on TM practices and innovation performance curvilinear relationship. For Hypothesis 4(b), the results also indicated no significant positive interaction of senior management perceived strategic importance of HR on KM strategy and innovation performance curvilinear relationship. What stands out in the following Table 6.7 is the negative significant interaction effect at high level of senior management's attention for Hypothesis 3(b): β = -.22, p < .05] and Hypothesis 4(b): [β = -2.76, p < 0.1]. Thus, Hypothesis 3(b) and 4(b) were not supported.

Table 6.7: Conditional Effect of TM practices on Innovation Performance at Values of the Moderator.

Moderator: Senior management's PSI of HR	Effect	se	t	p
-.18 (low)	-.04	.14	-.25	.80
.00 (moderate)	-.13	.11	-1.18	.24
.18 (high)	-.22	.11	-2.01	.05

Note: Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator.

Table 6.8: Conditional Effect of KM strategy on Innovation Performance at Values of the Moderator.

Moderator: Senior management's PSI of HR	Effect	se	t	p
-.18 (low)	2.94	2.14	1.37	.17
.00 (moderate)	.09	1.43	.06	.95
.18 (high)	-2.76	1.47	-1.88	.06

Note: Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator.

Summary

In this chapter, different ways to test the hypotheses in the present research are explained and their results are presented. Besides OLS regression, in testing the direct curvilinear relationships, there was a second analysis as recommended in the guideline provided by Haans et al. (2016) in theorising and testing an inverted U-shaped relationships. A third analysis was performed as suggested by Lind & Mehlum (2010) in their three-step procedure. In this analysis, if two out of three analyses give significant support for the hypothesis, the proposed hypothesis would be fully supported. Furthermore, for Hypothesis 1(b) and Hypothesis 2(b), this study utilised three independent measures for innovation performance. The first measure data used the results from the quantitative survey while the second and third measures used secondary data of 1-InnoCERT rating as dependent variables.

In summary, the overall results of this study provided full support for Hypotheses 1(a), 2(a), 2(b), partial support for Hypothesis 4(a), and no significant support for Hypotheses 1(b), 3(a), 3(b), and 4(b). Combined together, the results suggested that although all the results from OLS regression indicated significant U-shape relationships between TM- and KM on performance, Hypothesis 1(b) was found to be not supported based on the results of the other two measures as recommended by Haans et al. (2016) and suggested by Lind & Mehlum (2010) regarding U-shaped and quadratic graphs. Hypothesis 1(a), Hypothesis 2(a), and Hypothesis 2(b) were all supported although the last test as suggested by Lind & Mehlum (2010) indicated only a one half of a U-shaped relationship. Based on all the tests, the only quadratic relationship that fit to be considered as a perfect U-shape was Hypothesis 2(a) as all the three analysis indicated significant support to establish a quadratic relationship.

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Chapter 7 **DISCUSSION**

In this final chapter, the results of each hypothesis are discussed and compared with empirical evidence from previous studies. This chapter thus presents the discussion of theoretical contribution to RBT and strategic human capital resources, resource orchestration theory, and attention-based view. This is followed by another discussion on practical contribution. This chapter ends with conclusions, limitation and suggestion for future research.

7.1   Talent Management and Financial Performance

In Hypothesis 1(a), it was argued that the level of TM practices implementation in SMEs would have an inverted U-shape relationship with financial performance. This hypothesis was fully supported based on the analysis of OLS regression, the turning point method (Haans et al. 2016), and regressing the data at high and low range of the data (Lind & Mehlum 2010). Since two of the analyses significantly provided full support, and partial support using Lind & Mehlum (2010) approach, it can be concluded that Hypothesis 1(a) was supported. The present research findings have shown that TM practices and financial performance would have a curvilinear relationship if the graph produced an inverted U-curved shape.

In response to the question of 'what is the relationship between TM practices and financial performance?', TM in the context of SMEs will be associated with higher financial performance; however, beyond some point, too much investment on TM practices will be associated with lower financial performance. The significant and negative coefficients for squared terms in Model 2 of Table 6.2 mean that the positive

relationship between TM and financial performance would diminish at higher levels, and may even become negative and form an inverted U-shape. The findings about curvilinear relationship would be indicative of finite and beneficial effects of engagement in TM practices on financial performance. The notion of the more the better would not apply indefinitely in relation to the effect of TM on financial performance in SMEs.

This study offers several contributions to TM literature. First, testing and finding support for the theory with two measures of organisational performance in Malaysian SMEs. The results in the present study showed that the relationship between TM practices and financial performance had followed an inverted U-shaped pattern, and they clearly suggested that theories and models concerning the TM/KM – financial/innovation performance must move beyond linear assumptions to accommodate more complicated effects (all negative/curvilinear references). Second, this study has found that the relationship between TM practices and financial performance in medium-sized enterprises would not hold universally. Third, the benefits gained from TM practices and financial performance relationship may be maximised at different levels of TM practices as a function of organisational level capabilities. Lastly, the relationship between TM practices and financial performance may produce below zero return if these capabilities were deficient.

Wiklund & Shepherd (2003) had found positive linear relationship between entrepreneurial orientation and performance in the context of SMEs by examining the performance from ten different dimensions of performance, namely, sales growth, revenue growth, growth in the number of employees, net profit margin, product/service innovation, process innovation, adoption of new technology, product/service quality,

product/service variety, and customer satisfaction whereas this PhD research has found an inverted U-shaped relationship between TM practices and financial performance only by examining growth of sales, profit margin on sales, and return on investment.

The difference between these two studies results from the performance measures as the researcher in this PhD study separated financial performance from innovation performance whereas in their study, Wiklund and Shepherd (2003) had combined these two measures into one performance construct. They also did not explore the potential of curvilinear effects of entrepreneurship orientation and performance relationship, leaving gaps for possible exploration. Their study had utilised entrepreneurial orientation as the important measure of the way a firm would be organised. Entrepreneurial organisation enhances the performance benefit of a firm's knowledge-based resources by focusing attention on the utilisation of these resources to discover and exploit opportunities. Hence, the differences between these two studies have been justified. The result of Hypothesis 1(a) has provided stronger effects of TM by testing the effect of TM on financial performance alone. With two different dependent variables, different effects can be seen specifically to the targeted performance measures (Crook et al. 2008).

Miller & Shamsie (1996) also found positive linear relationship between talent management and financial performance in Hollywood film studio. This study, won the best paper award, had tested RBT in two different environments (i.e., stable/predictable versus uncertain/unpredictable). Although this PhD research did not test the proposed conceptual framework in two different environments or settings, it could be a good comparison research in the future. The result of Hypothesis 1(a) has indicated significant inverted U-curved relationship found in an emerging market like Malaysia.

There are two reasons that can explain these contrasting findings. First, these two studies were performed in two different contexts. Miller and Shamsie (1996) study had focused on small Hollywood film studios in a developed country (the US), as compared to this PhD research, which was based on Malaysian SMEs. One of their interesting findings had been the "knowledge-based resources contribute most to financial performance in uncertain – that is changing and unpredictable-environments" (Miller & Shamsie 1996: 519). In relation to the "unpredictable-environments" in Malaysia, according to Global Talent Competitiveness Index (GTCI) 2015-16, it has been noted that "Malaysia's long-term attractiveness as a talent hub is, however, currently put to the test as the country weathers through its biggest political crisis since its independence in 1957" (Lanvin & Evans 2015: 73). Furthermore, the New Economic Policy has been argued to be one of the main reasons why Chinese and Indian talent have left Malaysia to work in other countries despite Malaysia being the second most attractive country for talent in ASEAN after Singapore. The above-mentioned report indicates Malaysia's unpredictable environments that signify stronger relationship between knowledge-based resources (i.e., talent) and financial performance relationship.

Second, unlike Miller and Shamsie's (1996) study which had tested the relationship of knowledge-based resources in a single industry (i.e., Entertainment), the present study tested the relationship of TM and financial performance in various types of industry and this has contributed further to the different findings between both studies. These two different findings on TM – performance relationship have indicated that TM–performance relationship is very contextual in nature. Different research context would give different results as the relationship between TM practices and

performance are very much related to the people in the organisations. People have become an important element because 'talent' has become a critical ingredient for gaining a competitive advantage (Sparrow & Makram 2015).

Hitt et al. (2001) have also discovered an important finding on curvilinear relationship between human capital and organisational performance in professional law firms. The sample of their study had been drawn from the list of the one hundred largest law firms in the United States. They have suggest that some forms of human capital, such as 'quality of the law school attended by partners' and 'total experience as partners in the focal firm' would be costly. Thus, early investment in such human capital may not produce substantial enough benefits to offset the costs. In the case of Malaysian SMEs, the early investment of TM practices does benefit organisational performance up to a certain point; however, up to the inflection point, SMEs could not cope with the cost and the net effect of the relationship would turn negative. This explains the difference between the findings of Hitt et al. (2001) and the result of this study. In their study, they had found U-curved effects between human capital and performance relationship, while in the present study, results showed an inverted U-curved effects between TM practices–performance relationship. The reason of this difference is because the present study was conducted in the context of smaller organisations with 'liability of smallness' which led to diminishing marginal effects in TM practices implementation. The different findings of these two studies have indicated the high influence of context in both studies.

The findings of the present study reflected those of Swaab et al. (2014) who had discovered that too much talent would impair team performance. They had argued that more talent in a group would disrupt the teamwork and too much top talent could

produce diminishing marginal returns and even decrease performance by hindering intra-team coordination. Even though Swaab et al. (2014) had examined interdependence and performance in the team of sports players, the empirical evidence supported the curvilinear relationship between talent and team performance in SMEs. Due to smaller number of employees and less hierarchical structure, the level of interdependence between employees in SMEs would be higher as compared to large organisations. Though more talented employees would often facilitate team performance, but only to a point; beyond certain point, the marginal benefits of more talented employees would decrease and eventually the net effect of TM on performance would turn negative. Comparison between the findings of the present study and those of other studies in the past have confirmed TM–financial performance curvilinear relationship especially in the context of SMEs.

Furthermore, Groysberg et al. (2011) had discovered that having a high proportion of talented team members could negatively affect the performance of financial research team. The present study found that with higher proportion of talented employees in the group, the result indicated decreasing marginal return up to 65.1% talented analyst and a downward slope when greater than 65.1% of analysts were talented employees. This study has found support for the argument that teams or organisations would benefit up to a point from having highly talented employees. With higher proportions of talented employees, the marginal benefits from these talents would decrease and lead to negative effects on financial performance. This study has confirmed Hypothesis 1(a) on the inverted U-curved effects of TM–financial performance relationship.

7.2   Talent Management and Innovation Performance

On the other spectrum, this study has also tested the relationships between TM practices and innovation performance relationship. The result supported Hypothesis 1(b) which argued that TM would have an inverted U-curved curvilinear relationship with innovation performance. This result was in contrast to the findings of past studies by Groysberg, Sant, et al. (2008) and Groysberg, Lee, et al. (2008) on the negative contribution of new talented employees on organisational performance through their ability in replicating their success in a new environment. New talented employees would need some time before they could accelerate their performance especially if the positions relied heavily on teamwork, knowledge sharing and innovation. They had further suggested that adding good talented employees into the organisation would not always give positive effects on performance especially in short term. Most new employees would need at least 5 years to adapt with the new environment. Even if the star employees had moved to a new organisation with the same capability from their previous company, it was found that the decline in performance would occur within the first two years in new organisation. These findings have broadly described the U-curved effects of talented employees' contribution on performance.

Both of the findings of these past studies have been found to be inconsistent with the result of the present study which indicated an inverted U-curved effect of TM-innovation performance relationship found in the context of SMEs. These different results are possibly due to the different type of relationship tested: (1) talent– performance relationship versus (2) TM practices–performance relationship. The present researcher would argue that the former relationship had tested the effect of individual talent on organisational performance, whereas the latter relationship referred

to the management of talent at organisational level on organisational performance relationship. The management of talent at organisational level has valuable contribution on performance (Sparrow & Makram 2015). Hence, seen through the RBT lens for collective TM, the management of talent would be represented by strategic human capital resources that would include knowledge, skills, capabilities, intelligence, relationships and experiences of the employees.

"RBT argues that talent resources are strategic assets that have the potential to create and capture value and execute business strategies" (Sparrow & Makram 2015: 254).

Sparrow & Makram (2015) have further emphasised organisations to organise ('O') their talent in order to exploit the potential of its resources, if they are to sustain competitive advantage.

In addition to the above empirical evidences, this study has produced results which corroborated the findings of a great deal with the previous work by Swaab et al. (2014) on the relationship between the number of talents and performance relationship from psychological science perspective. In the literature review chapter, supporting arguments on the importance of teamwork in influencing innovation performance have confirmed the association between TM practices and innovation performance. However, Swaab et al. (2014) study had demonstrated that the marginal benefit of more talent would decrease among teams with high level of task interdependence among team members. One of their interesting findings is that too-much-talent effect would emerge only when there would be a high level of interdependence among members in the team or in the organisation. As innovation teams have high interdependence characteristic for innovation, the likelihood of too-much-talent effects to take place in

the context of SMEs are possible. Therefore, comparison between the findings of the present study and those of other studies has confirmed the finding of this research for Hypothesis 1(b) in relation to inverted U-curved effects found in TM practices and innovation performance relationship.

7.3   Knowledge Management Strategy and Financial Performance

The results of the present research have shown an inverted U-curved relationship between KM strategy and financial performance. At high level of KM strategy implementation, the relationship between KM strategy and financial performance would turn negative. A possible explanation of this might be due to the nature of KM strategy implementation that would be costly for smaller organisation to gain full benefits from the investment. Furthermore, the implementation of KM strategy in the context of smaller organisations would require high level of managerial attention. However, managerial attention may be a resource constrain. Hence, these two drawbacks would be causing the negative effects on financial performance.

It is interesting to compare the present findings with those of Uotila et al. (2009) study in which curvilinear relationship had been found between the relative amount of exploration and financial performance sampled from 279 manufacturing organisations. Their arguments were based on March's (1991) work which had defined exploration as activities that may include things would captures search, experimentation, discovery, and innovation, while exploitation activities may include selection, implementation, and execution. The balance between these two constructs (i.e., exploration and exploitation) was found to have curvilinear relationship with financial performance. Exploitation would need to be balanced with exploration-oriented activities as these would help the organisation to develop new knowledge and create those capabilities

necessary for long-term prosperity (Uotila et al. 2009: 222). Their findings on the curvilinear relationship between the relative amount of exploration and financial performance had supported March's (1991) argument that a balance between exploration and exploitation should provide optimal performance levels, and that such a balance would involve a trade-off between exploration and exploitation.

Exploration and exploitation are very much related to absorption capacity theory (Cohen & Levinthal 1990), which are also very much related to internal and external search for new knowledge. There are three potential reasons that lead to excessive marginal costs from these strategy in SMEs. First, there may be too many ideas to process. Second, there may be too few ideas to warrant serious consideration. Third, ideas may simply come at the wrong time (Koput 1997: 529). Furthermore, too much attention on searching different external knowledge resources can, at some point, be detrimental and SMEs are less capable as compared to large companies in manufacturing industry. Besides, the relationship between absorptive capacity and financial performance has been shown to be subject to diminishing returns due to 'absorptive capacity problem' (Koput 1997, cited in Laursen & Salter 2005). Thus the curvilinear relationship between KM strategy and financial performance is significant in the context of Malaysian SMEs.

It is also important to compare the results of Hypothesis 2(a) with relevant studies in the same research context, that is, Malaysian SMEs. Hence, the comparison between Hypothesis 2(a) results with the results from a study conducted by Ho et al. (2016) have confirmed the inverted U-shaped relationship between KM strategy and financial performance in Malaysian SMEs. In their study, Ho et al. (2016) had examined the relationship between manufacturing competitive capabilities and

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organisational performance relationship in a sample of 145 manufacturing SMEs. Their findings had revealed the real capabilities of Malaysian manufacturing SMEs. The results of the present PhD research showed that manufacturing SMEs would still incapable to exploit the available resources for positive outcome. Although Malaysian government has been taking steps to encourage innovation, such efforts would take time before positive outcomes could be observed.

There are similarities between the dependent variables in this study and those described by Ho et al. (2016) as both studies have utilised financial and non-financial organisational performance as dependent variables in the research model. Surprisingly, their study had revealed that none of the manufacturing capabilities had a significant positive impact on the SMEs financial performance. A possible explanation for the non-significant results between SMEs' manufacturing capabilities and financial performance would be perhaps due to the non-linearity of the relationships. The non-significant results were reflected by the findings of this study on the curvilinear relationship of KM strategy and performance of Malaysian SMEs. Hence, Ho et al. (2016) results would most probably be related to the curvilinear relationship of Hypothesis 2(a). There could possibly be a curvilinear relationship between SMEs manufacturing capabilities and organisational performance in the context of Malaysia. In summary, the result of Hypothesis 2(a) was consistent with the findings from Ho et al. (2016) study as both empirical evidences were from the same research context, namely, the Malaysian SMEs.

7.4 Knowledge Management Strategy and Innovation Performance

The result of Hypothesis 2(b) has also indicated an inverted U-shaped relationship between KM strategy and innovation performance, which has shown the diminishing

marginal effects between KM strategy and innovation performance relationship. This finding has broadly supported the works of other researchers in this area linking KM strategy with innovation performance. Although Dahlander et al. (2016) study had focused on IBM, that is, a large global technology and services business, and this PhD study focused on Senior management in SMEs, the characteristics of respondents in both of these studies are quite similar. For example, the samples in both studies were tasked with innovation search and these respondents were able to trace how different allocations of attention would affect knowledge search and innovation outcomes. In SMEs, senior management are the "communication stars" in maintaining external and internal information sources for better innovation performance (Allen 1977). Hence, the results from Dahlander et al. (2016) study can be compared with the findings from this PhD research.

As illustrated in Figure 6.6, the inflection point for the diminishing effects to occur is at 5.14 unit of innovation outcome, which would indicate a relatively moderate innovation performance. Comparing the result of Hypothesis 2(b) and the findings of Dahlander et al. (2016), although there was a positive relationship between external search and innovation outcome, however, at organisational level there would be diminishing marginal returns between knowledge search breadth and innovation performance. They have shown that employees in the sample who allocated more attention to external rather than internal information sources would less likely improve innovation performance. This has been very much reflected in the title of their article: *'One foot in, one foot out: how does individuals' external search breadth affect innovation outcomes?'*

The results of the study conducted by Dahlander et al. (2016) seem to be consistent with those of the Hypothesis 2(b) curvilinear relationship. In the context of SMEs, senior management play the most important role in search strategy. Knowledge search is more likely to be conducted by the senior management who are the individuals straddling the SMEs and its environment. The balance between external and internal sources of knowledge is essential for innovation. However, transferring ideas from external sources into the organisation is challenging especially in the context of SMEs. Ideas from external sources often do not transfer well and can be difficult to integrate with existing activities due to limited resources and capabilities.

The diminishing effect that occurred at 5.14 unit of innovation performance outcome seems to indicate the imbalance between the senior management's attention on external and internal knowledge search. At high level of KM strategy implementation, senior management may put too much attention on internal information sources and that would limit novel innovations that may require input from external search. Attention-based theory typically would focus on how leaders like the senior management would influence or direct the attention of organisations members (Li et al. 2013). The result of Hypothesis 2(b) has extended Attention-based view theory through the inverted U-curved graph of KM strategy and innovation performance: "…any allocation of attention has an opportunity cost", (Dahlander et al. 2016: 281 quoting Ocasio 1997; 2011). This study has accounted the opportunity cost associated with innovation search. Hence, senior management would need to give the right level of attention between internal and external search for better innovation performance.

In addition, the importance of having the right balance between internal and external search for innovation had also been supported in a quantitative study on a

sample of 627 manufacturing firms conducted by Estrada et al. (2014). This study had tested the impact of internal knowledge sharing and formal knowledge protection on mechanisms on the relationship between competitor collaboration and organisational innovation performance. The findings of this study had provided support for the negative effects of coopetition on innovation performance without internal knowledge sharing and knowledge protection mechanisms influencing the relationship. These two mechanisms had emphasised the importance of internal and external mechanisms for positive innovation performance benefits. However, unintended knowledge spillovers of valuable knowledge might substantially harm the innovative skills and capabilities of the organisations (Nieto & Santamaria 2007), which could hamper organisational innovation performance.

Lastly, the result of Hypothesis 2(b) has further supported the idea proposed by Laursen & Salter (2005) in explaining the role of openness in explaining innovation performance among UK manufacturing organisations. They had explored the relationship between the openness of organisational external search strategies and innovation performance. In the search for new innovation opportunities, most companies would often invest considerable amount of resources. Such investments increase organisational capability in creating, using, and recombining new and existing knowledge for innovation. However, the result of this empirical evidence had supported inverted U-shaped effects of external search depth and breadth on innovation performance (Laursen & Salter 2005). 'The absorptive capacity problem', 'the timing problem', and 'the attention allocation problem' were the three related reasons that explained why over-searching may have a negative influence on innovation performance. These results have been in agreement with the findings of the present PhD

research on the curvilinear relationship between KM strategy and innovation performance which have confirmed the effect of 'over-search' that hinders innovation performance (Katila & Ahuja 2002).

In summary, these three empirical evidences have been supportive of the curvilinear relationship between KM strategy and innovation performance, especially in the context of SMEs where managerial attention and resources are constrained. One contribution of Hypothesis 2(b) is the emerging contextual or contingency perspective on KM literature, which emphasises that the performance implications of KM strategy relationships are contingent on the context in which the relationships are embedded. In this study, the context of SMEs in an emerging economy such as Malaysia has given significant impact on the results.

7.5 Moderating Effects of Senior Management's Perception of Strategic Importance of HR

In this study, senior management's perception of the strategic importance of HR was the moderating variable proposed to have positive interaction effects on all the curvilinear relationships. However, the results from OLS regression analysis did not support all the four hypotheses. Hypothesis 3(a) and 3(b) were not significant while Hypothesis 4(a) and Hypothesis 4(b) were negatively significant which have resulted in all of these hypotheses rejected. However, the result of Conditional Moderation Effect using SPSS PROCESS Macro indicated partial support for Hypothesis 4(a) in which senior management's attention positively influenced KM strategy and financial performance curvilinear relationship at low level of senior management's attention.

In Hypothesis 3(a), it was posited that senior management's perception on strategic importance of HR would positively moderate the curvilinear relationship

between TM practices and financial performance. However, the result was not supported. There was no significant interaction effect of senior management's perception of the strategic importance of HR on TM practices and financial performance curvilinear relationship. Similarly, in Hypothesis 3(b), it was posited that senior management's perception on the strategic importance of HR would positively moderate the curvilinear relationship between TM practices and innovation performance. The result also indicated that there were no significant interaction effects of senior management's attention on TM practices and innovation performance curvilinear relationship. The results seemed to indicate that the level of awareness on the importance of TM in the context of smaller organisations was still low among senior management in Malaysian SMEs. However, if senior management were aware on the significant association between TM practices or KM strategy and organisational performance, they should consider implementing these two strategic HR practices in these medium-sized enterprises.

There are three possible reasons why senior management's perception on the strategic importance of HR did not influence TM practices and organisational performance curvilinear relationship. First, the insignificant relationships were perhaps due to the lack of awareness among the senior management on the importance of TM practices in the context of SMEs. Although the senior management perceived that strategic HR would be important as indicated in the survey results, that is, 87.7% of senior management sampled in the present study believed that HR practises would be a critical success factor for the companies, this somehow did not reflect their level of awareness on the importance of TM practices in their organisations. Hence, it would be better for future research to explore the level of TM awareness in the organisations prior

to asking the question on the implementation of TM practices.

Second, senior management's perception of the strategic importance of HR had no significant interaction on TM practices and organisational performance curvilinear relationship because SMEs would spend less on HR professionals and would less likely have an HR strategy compared to large companies. Furthermore, they would focus more on the administration rather than on strategic level. Size was one of the reasons that supported the non-significant effect of the moderating variable on TM–performance curvilinear relationship. Due to the size, SMEs would prefer to adopt an informal approach to TM instead of implementing best practices approach to TM, which would be effective in the context of large MNEs or large organisations. Furthermore, due to the fast changing environment in terms of the growing phase in SMEs, issues related to talent attraction, identification, and retention would likely vary at different stages during the growth of SMEs.

Lastly, economic theories argue that because of the associated costs, acceptable economies of scale must be reached before sophisticated TM practices can be implemented. A central tenet of strategic HRM literature is the linking of high performance work practices with organisational performance. However, significant investment in HR practices is required, incurring both direct and indirect costs. The potential of better performance gains could be offset by these additional costs which make the decision-makers especially senior management reluctant to implement this costly HR strategy. Hence, when the interaction effect of senior management's attention was tested on TM practices and financial performance curvilinear relationship, the result did not support the hypothesis.

In Hypothesis 4(a), it was posited that senior management's perception on the strategic importance of HR would positively influence KM strategy and financial performance relationship. Although the result in Model 5 from OLS regression indicated negative significant interaction effects of senior management's perception on the strategic importance of HR on KM strategy and financial performance curvilinear relationship, further analysis utilising conditional moderation analysis using SPSS PROCESS Macro indicated partial support for positive interaction effects at low level of senior management's attention [$\beta = 4.15$, $p < 0.05$], that is, one unit increase in KM strategy implementation would improve financial performance by 4.15 units.

This interesting finding has highlighted SMEs' capability in implementing KM strategy in their organisations. Due to senior management's multiple roles in the organisations, too much attention on specific strategy like KM would be detrimental to the potential positive effects on financial performance. The result may have indicated the importance of KM strategy to be implemented in the context of SMEs; however, senior management need to give the right level of attention on KM strategy. As evidenced by the result, at low level of senior management's attention, KM strategy would positively enhance financial performance. The partial support of Hypothesis 4(a) in this study has extended Attention-based theory (ABV) because the present study was conducted in a dynamic, uncertain, and competitive environment. This study has succeeded in filling the critical research gap studying how individuals (i.e., senior management) allocate their attention among the people inside and outside their respective organisations and how this would affect performance outcomes. The level of attention on strategic HR inside the organisations could not solely be on the shoulder

of the senior management and hence, if the level of attention exceeds the right level of focus, too much attention would compromise organisational performance.

This finding has been consistent with those of Dahlander et al. (2016: 281) that used attention-based view theory which "…recognised that the attention of both individual and organisations is a scarce resources and that any allocation of attention has an opportunity cost (Ocasio 1997; Ocasio 2011)". They had explored how individuals' allocation of attention would affect the efficacy of search breadth and match survey data with complete patent records, to examine search behaviour of IBM employees. Their results had indicated that employees that allocated external search and internal information sources would be more innovative and would positively contribute to organisational performance.

Comparisons between the findings of other studies and the present study have confirmed the potential positive interaction effects on KM strategy and financial performance curvilinear relationship. Wiklund & Shepherd (2003) had utilised the same theoretical concept with that of the present study within RBT framework, developing the so-called VRIO framework (Barney 1991; Barney 1995). In the present study, the belief held was that organisation's resources should not only be valuable, rare, and inimitable to sustain competitive advantage, but the company must also have an appropriate organisation ('O') in place to take advantage of these resources. This PhD research has extended RBT by considering the relationship between a firm's organisation ('O') and its resources that fit the ('VRI') characteristics in explaining performance. The theoretical argument, which tested the relationship between talented and knowledgeable employees as strategic resources that fit 'VRI' characteristics on organisational performance and senior management's managerial role in orchestrating

the strategic resources (i.e., talent and knowledge) would signify the organisation ('O') characteristic (Barney 1995).

Senior management's perception on the strategic importance of HR plays an important role in orchestrating the available resources in the organisations. Some scholars have perceived TM and KM strategy as part of HR investments (Chaui 2008; Minbaeva 2013). Thus, organisations can make use of any practices that are related to these two constructs like training, recruitment, compensations, knowledge sharing and other practices to increase the value, rareness, non-substitutability, and inimitability of the human resources. There are differences between high investment organisations and low investment organisations. At high level of investment organisations, TM and KM are used as strategies for building workforce that create competitive advantage. However, unlike large companies, in low investment organisations such as SMEs, TM and KM do have positive effects on competitive advantages but they could not opt to implement the same strategies as large organisations (McAdam & Reid 2001; Durst & Edvardsson 2012; Cui et al. 2016). A note of caution is due here since there is a diminishing return effect on TM-and KM on performance relationship; however, senior management should not totally reject such strategies for fear of decline in performance. The suggested mechanisms as discussed in *Chapter 3: Conceptual Framework* of this PhD thesis have managed to capture the causal drivers of the observed relationships.

It is interesting to note that, "RBT researchers have emphasised the accumulation of human capital as a source of competitive advantage but have tended to ignore the risks of resource accumulation efforts" – be it talent or knowledge (Shaw et al. 2013: 573). There are possibilities of negative and curvilinear effects of human capital accumulation on performance especially in the context of SMEs. The

relationship between human capital and performance is very contextual (Gilman et al. 2015). Furthermore, Crook et al. (2011: 452) have suggested that understanding the point at which, and conditions under which, "human capital begin to diminish and lose its value" is a critical direction for strategy research.

Thus, Shaw et al. (2013) have attempted to better understand how human capital losses relate to organisational performance under differing level of HR investments. They propose that, increasing the potential of inimitability of human capital pool means more damage to organisational performance when human capital losses occur. This is in line with the results of Hypothesis 1(a) which have found inverted U-curved effects in TM and financial performance relationship due to loss of talented employees and also Hypothesis 4(a) in which positive interaction effects of senior management's attention on KM–financial performance relationship would occur at low level of senior management's perception on the strategic importance of HR.

A combined RBT and strategic human capital theory would yield a particular theoretical form of the relationship between strategic human capital resources and organisational performance. It has been noted that several recent studies (Björkman et al. 2013; Groysberg, Lee, et al. 2008; Groysberg, Sant, et al. 2008) have reported robust negative linear relationships between strategic human capital resources (i.e., talent and knowledge) and performance but have failed to report tests for curvilinearity. This PhD research tested TM and KM curvilinear relationship with organisational performance. In addition, senior management's perceived strategic importance of HR would act as the moderating variable that might influence the curvilinear relationships. It has been found that senior management's attention would positively influence KM strategy and financial performance curvilinear relationship at low level of interaction effect.

Shaw et al. (2013) in Study 1 of their research, found a significant moderating effect at high level of HRM investments on human capital losses and performance. Human capital or talents can meet the criteria for sustained advantages when HRM investments are high because TM/KM practices increase the knowledge, skills, and capabilities of talents. In a nutshell, Shaw et al. (2013) findings had revealed that among high HRM investment organisations, human capital or talent losses were the most damaging to performance as they would initially increase, but the relationship would be weakened at higher loss levels. Their results had indicated that organisations would risk more dramatic performance decrements through human capital depletion.

In addition to the previous comparison, the partial support of Hypothesis 4(a) at low level of senior management attention on strategic importance of HR indicated SMEs' capabilities in balancing strategic practices implementation with available resources in the organisations. Brush & Chaganti (1999) had found that owner resources, commitment, and organisational resources would be positively related to financial performance. However, the interaction effects of the combinations of these resources were negative on performance. For example, owner resources and organisational resources combined together or organisational resources and commitment together would result in negative effects on financial performance. This would signify the importance of combining the available resources in the organisations especially for SMEs. Resource orchestration theory explains the role of senior management to effectively structure leverage, and bundle organisation resources. This is where senior management would play the most important role in influencing any strategic practices and organisational performance relationships. With regards to SMEs' capabilities, senior management should and can only give significant level of

attention on the strategic importance of HR for positive benefits from TM and KM implementation.

The following interesting quote which reflects the roles of senior management, in the context of SMEs signifies the moderating variable in this PhD research: *"..the failure to match strategy and environment hurts financial performance"* (Miller 1991: 34). The role of 'matching' the strategy, organisational capability and the environment are in the hands of senior management. The aforementioned quote emphasises the importance of senior management in influencing TM/KM strategy and organisational performance curvilinear relationships. This perspective reflects resource orchestration theory as extension of RBT that explicitly addresses the role of senior management's attention to effectively structure, leverage, and bundle organisation resources.

In accordance with the present results, Mihalache et al. (2012) has demonstrated that top management team shared vision flattens the inverted U-shaped relationship between offshoring primary functions and innovation performance at high level of top management team as compared to firms with low level of top management team shared vision. "Top management team shared vision represents the collective goals among TMT members regarding a common and desired strategic direction of the firm" (R. Mihalache et al. 2012: 1484 citing Jansen et al. 2008; Tsai and Ghosahl 1998). They further argue that top management team with high shared vision are likely to value a more limited set of options than top management team with low shared vision. Indeed, their result points out, those organisations that have a low top management team shared vision experience a steep inverting U-shape relationship between offshoring and innovation performance. In line with their hypothesis, organisation with high top management team shared vision experience rather flat (i.e., less positive) relationship

between lower levels of offshoring and innovation performance. A comparison between the finding on the partial support of Hypothesis 4(a) with those of R. Mihalache et al. (2012) study has confirmed positive benefits of low level of attention on KM strategy and financial performance curvilinear relationship.

The role of senior management in orchestrating valuable, rare, and inimitable resources (i.e., talent and knowledge) has significant influence on KM–performance curvilinear relationships. Theoretically, managerial roles through senior management's attention would positively influence the strength of the relationships between valuable resources (i.e., knowledge) and organisational performance. Although Wiklund and Shepherd (2003) have managed to prove the positive interaction effects of managerial roles on knowledge-based resources and performance relationship, the present findings have further explained the right level of attention that senior management and owner manager should give when implementing any strategic decision in the context of SMEs. SMEs would gain advantage from KM strategy at low level of senior management's perception on the strategic importance of HR. This is because, in the context of smaller organisations, too much attention on KM strategy might deviate other strategic focus of the organisations.

In addition, there are similarities between senior management's perceived strategic importance of HR and resource management moderating variable in a study conducted by Sirmon et al. (2008). Their results had indicated that the efficacy between managerial actions and performance would depend on contextual factors and the deployment of flexibility of specific resources. Hence, resource management actions would be critical in achieving sustainable competitive advantage. The positive influence of senior management's perception of strategic importance of HR on KM

strategy and financial performance curvilinear relationship would reflect the contextual factors in this PhD research since the context of this study was the SMEs in Malaysia. Although Sirmon et al. (2008) had focused on a team of baseball players, their study confirmed the positive interaction effect of resource management on comparative resource advantage in batting, pitching, and fielding skills set of an organisation's human capital and performance in a baseball team. The theoretical contribution of the present PhD research to RBT is the extension of resource-based logic beyond the context of baseball team to business organisations, particularly SMEs where senior management's attention would positively influence KM strategy and financial performance relationship.

Perhaps, the right justification for senior management to give minimum (or low) attention on strategic HR that would lead to positive interaction effect on financial performance relationship could be influenced by the "liability of smallness" in SMEs. This justification is consistent with that of Greer et al.'s (2015) findings in a study which had tested the effect of senior management's perception of strategic importance of HR on strategic staffing and organisational performance. The dependent variables in Greer et al.'s (2015) study were divided into two constructs, namely, perceived firm performance and average sales growth. Their study had not provided promising interaction effects of PSI of HR on strategic staffing and average sales growth. The tests for moderation effect of PSI of HR had only found positive interaction effects of PSI of HR on strategic staffing and perceived firm performance. Contrary to expectation, Greer et al. (2015) had not found any interaction effects of PSI of HR on strategic staffing variables and average sales growth. These results seemed to reflect sales as the main focus of all SMEs. Hence, no matter at what level of senior management's

perception on the strategic importance of HR, focus on sales growth would always be of the most significant importance.

The present research makes a unique contribution as smaller organisations have lesser resources and capabilities to exploit the available resources in the company that would lead to higher diminishing return effects on KM strategy and financial performance relationship. The findings of this study have highlighted important parts of RBT that would require further empirical examination. The results have suggested that greater consideration on the role of managers in resource-based logic would be vital for more complete understanding of how competitive advantage should be created and sustained. The partial support for Hypothesis 4(a) has emphasised the importance of firm's organisation ("O") in influencing the effects of knowledge-based resources on financial performance. Perhaps, talent and knowledge resources would need different management effort in structuring, leveraging, and bundling them for better performance (Sirmon et al. 2011).

The results of the interaction effects of senior management's attention on KM strategy and financial performance curvilinear relationship seem to suggest a non-linear moderating variable in which positive influence would be found at low level of senior management's attention and would change to negative influence at high level of senior management' attention or perception on the strategic importance of HR. These results have been consistent with the two evolving processes as suggested by Henderson et al. (2006: 458): (1) the degree of internal fit between organisation's strategy and its senior management's paradigm; and (2) the degree of external mismatch between the paradigm and the environment. In accordance with the present results, Henderson et al. (2006) have demonstrated an inverted U-curved relationship between CEO tenure and

impact on organisational performance especially in dynamic environment. The result of Hypothesis 4(a) might help senior management to direct the right level of attention on strategic importance of HR in SMEs. With regards to KM strategy implementation, senior management would also need to balance the right level of implementation to fit SMEs capabilities.

In Hypothesis 4(b) it was posited that senior management's perception on the strategic importance of HR would positively influence KM strategy and innovation performance curvilinear relationship. This hypothesis was not supported. Although the result in Model 9 was statistically significant, the result indicated opposite sign for Hypothesis 4(b). The result of Hypothesis 4(b) showed that it would not always be good to invest in KM strategy for innovation especially in the context of smaller organisations as it has been proven that there would be negative effect at high level of senior management's attention on KM strategy and innovation performance curvilinear relationship (see Table 6.8).

This contributes to our understanding in the following ways. First, since the negative effects on innovation performance occurred at high level of senior management attention, extra efforts and focus from the senior management alone would not be sufficient in improving innovation performance. For SMEs to elevate their innovation performance, the organisations would need to develop and leverage critical organisational-level capabilities that could be effectively utilised in conjunction with senior management's attention and focus. For example, J. Wales et al. (2013) have suggested information and communication technology capability and network capability as two important elements for innovation. Second, implementing KM strategy would be costly especially for smaller organisations like SMEs. Due to the

liability of smallness, the cost of implementing KM strategy would offset the benefits gained from it. Furthermore, the combination of resource constraints faced by SMEs and the resource-intensive nature of KM strategy and innovation activities may limit the performance effects.

In addition, the result of Hypothesis 4(b) indicated that, it would be more crucial for senior management especially in the context of SMEs to balance their attention between internal and external environment for KM strategy implementation. Too much attention allocated in either one of these two environments would lead to negative effects on innovation performance (Pierce & Aguinis 2013). Hence, at low level of senior management's attention on the strategic importance of HR, they could prevent the negative effects of 'over-search' for new innovative ideas where too many ideas would lead to wrong decision in realising the most suitable investment. To achieve better performance, senior management would need to figure out how to allocate their attention to a variety of external information sources while still focusing on the internal needs of the organisation so that any particular strategy implementation would give positive effects on performance.

The result of Hypothesis 4(b) mirrored those of the previous study that had examined the relationship between top management team's attention and global strategic posture (Levy 2005). The study had found positive relationship between top management team's attention to external environment and global strategic posture. However, top management team's attention to internal environment had been negatively related with global strategic posture. This finding had broadly supported the negative effects of wrong allocation of attention either on internal or external environment for global investment. This result seemed to support the negative effects

of senior management's attention on KM strategy and innovation performance in this PhD research.

Senior management's attention on the strategic importance of HR would positively influence KM strategy and innovation performance if senior management focused on external knowledge search for new innovative ideas and not directing too much attention towards internal KM strategy implementation. The low level of senior management's attention in SMEs would signify their organisational capability for innovation as noted by Levy (2005: 800): "…managers have only limited information processing capacity, and therefore allocate their attention among various aspects of the environment". This quotation explains the negative interaction effects of senior management's attention on the strategic importance of HR on KM strategy and innovation performance curvilinear relationship if they give too much attention on knowledge creation, which requires external knowledge search for innovation and internal KM strategy implementation in the organisations.

Hence, the negative interaction effects of senior management's attention on KM strategy and innovation performance curvilinear relationship in the present study was due to the level of attention given to internal and external environments with regards to KM strategy implementation. This also accords with observation in the previous studies which showed that senior management had played the important role in searching for new knowledge especially in the context of SMEs. In the context of smaller organisations, "KM processes are also influenced by factors surrounding the organisation and its environment" (Wee & Chua 2013: 960). Hence, internal and external environment would undeniably influence KM strategy and processes in SMEs and high level of attention given on external search would have negative influence on

KM – innovation performance relationship.

In addition to the environment factors that led to negative influence at high level of senior management's attention, the result of Hypothesis 4(b) has been consistent with that of J. Wales et al. (2013) study in which 'resource orchestration' arguments had been utilised by theorising that the ability of SMEs to translate entrepreneurial orientation into heightened performance would be dependent on their capacity to develop and leverage critical organisational capabilities that could be effectively utilised in conjunction with entrepreneurial orientation. Entrepreneurial orientation has been defined as 'strategy-making practices that are entrepreneurial in nature'. Hence, entrepreneurial orientation would influence senior management's decision-making process and entrepreneurial behaviour that would contribute to innovation performance. This argument has been consistent with the present study which suggests the ability of senior management of SMEs to translate TM/KM into better innovation performance would be dependent on senior management's perception on the strategic importance of human resources in the organisations.

7.6 Theoretical Contribution

The results of this research are significant for several reasons. First, they have supported the recent arguments of some human resource management scholars regarding the importance of strategic human capital (Wright et al. 2013) to organisational outcomes (Barney 1995; Lepak & Snell 1999; Ray et al. 2004; Coff & Kryscynski 2011; Ployhart & Moliterno 2011a). Equally important, the results have provided strong support for the RBT and arguments by several strategy scholars in recent years on the role of managers and managerial attention influence in sustaining competitive advantages (Barney 1991; Boxall 1996; Crook et al. 2008; Sirmon et al. 2007; Sirmon et al. 2011;

Nason & Wiklund 2015). More importantly, the results have supported talent and knowledge management as approaches in managing human capital strategically in the context of smaller organisations like Malaysian SMEs.

This study offers several contributions to TM, KM, and strategic management literature. First, it has contributed to testing and finding support for the theory with two measures of organisational performance in Malaysian SMEs. The results have shown that the relationship between TM/KM strategy and organisational performance followed an inverted U-shaped pattern, and they clearly suggest that theories and models concerning the TM/KM–financial/innovation performance must move beyond linear assumptions to accommodate more complicated effects like negative or curvilinear (Mihalache et al. 2012; Wales et al. 2013). Specifically, KM strategy was most strongly associated with financial performance at low level of senior management's perception on the strategic importance of HR, that is, SMEs would benefit from KM strategy when senior management gave the right level of attention (i.e., "low") on KM strategy implementation in the organisations. Hence, SMEs with too much attention from the senior management on KM strategy implementation would hinder financial and innovation performance.

Resource-Based View Theory/Strategic Human Capital Resources

Particularly, this study has extended RBT by offering a rationale to why TM and KM may possess a curvilinear relationship with organisational performance in medium-sized enterprises. The results have largely been supported by the theoretical arguments presented, suggesting that the effects of TM and KM strategy on organisational performance would be both direct and indirect. Through the integration of strategic human capital resources theory and resource management literature in

current RBT theory, the micro-macro divide is bridged by simultaneously informing, expanding, and extending both areas of research by empirically testing the related model to both areas of research.

On the one hand, this study also contributes to strategic human capital theory. Strategic human capital is the organisational level human capital resources, where the unit-level resource is unique and inimitable (Ployhart et al. 2014). The contribution of the present study to the literature has been made in three ways. First, this study has empirically tested the relationship between strategic human capital (i.e., talent and knowledge) and financial and innovation performance. One important finding is the inverted U-curved relationship between TM/KM and organisational performance relationships. It is suggested that SMEs would only benefited from TM and KM up to a certain point of implementation as too much of TM/KM effort would lead to diminishing marginal effects on performance. Second, as talent is the primary resource in the organisations studied, this research has provided a direct test of the RBT, suggesting that organisations should use resources to create a competitive advantage. In other words, organisational resources, in particular those that are valuable, rare, and inimitable can be used as a basis for and as an aid to implement strategies that can create a competitive advantage (Barney & Wright 1998).

Resource Orchestration Theory

Resource orchestration theory has been a useful instrument to be used to analyse the consequences of senior management's perception on the strategic importance of HR on TM/KM strategy and organisational performance relationships. Drawing upon the tenets of resource orchestration theory, strategic human capital resources (i.e. talent and knowledge) effect is posited as a novel theoretic lens in explaining the existence of

diminishing, even harmful, returns associated with increasing levels of TM/KM in SMEs. A key theoretical implication of these findings is that resource orchestration capabilities through senior management or top management team appear to play an important role in maximising the utility of KM strategy in SMEs. The results have suggested that curvilinearity within the TM/KM-performance relationship would occur when SMEs lack specific capabilities that would enable them to orchestrate their strategic human capital resources more effectively. An interesting finding of this empirical study has shown a significant influence of low level of senior management's perception on the strategic of HR on KM–financial performance curvilinear relationship.

Attention-Based View Theory

On the other hand, another important finding is that senior management's perception on the strategic importance of HR influence KM strategy and financial performance curvilinear relationship. This significant finding contributes to the resource management perspective in three ways. First, this finding has empirically proved the implementation of attention-based view theory through the moderating variable in this study (Sirmon et al. 2011). This study has extended attention-based view arguments by theorising that the ability of smaller organisations like medium-sized enterprises to translate talent and knowledge into heightened performance would be dependent on senior management's attention on the strategic importance of HR. At the right level of senior management's attention on HR, suitable efforts to efficiently and effectively orchestrate knowledge would positively strengthen KM–financial performance curvilinear relationship. Although the positive interaction effects would be positive at low level of senior management's attention, such effects would give an

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indication of the capability of SMEs in their KM strategy implementation. These interaction effects would explore important aspects of ABV theory in the context of SMEs.

7.8   Practical Contribution and Policy Implication

There are several practical implications of the findings of this study which generate useful and actionable insights for senior management of small organisations. The evidence from this study has suggested that SMEs in Malaysia, especially the medium-sized enterprises, would be capable of gaining positive benefits from the implementation of TM practices and KM strategy in their organisations. With regards to the curvilinear relationship that is inverted U-curved in nature, it is useful for SMEs in Malaysia to distinguish between the marginal benefits and costs associated with increases in TM/KM strategy implementation. If the marginal costs increase more quickly than the marginal benefits, the performance-related returns derived from TM and KM strategy implementation would diminish and become negative. Hence, the right level of TM and KM strategy implementation in SMEs would certainly benefit the organisations. These organisations would just need to invest up to the right level that would fit the organisations' own capabilities. Too much focus on these two strategies would be detrimental to the overall performance of a company.

In addition, it is important for managers to recognise that, when not accompanied by critical organisational level resource orchestration capabilities, increasing level of TM/KM strategy would be less beneficial, even harmful, to the performance of the SMEs. The positive interaction effect at low level of senior management's perception on KM strategy–financial performance relationship has suggested that managers would be wise to increase KM strategy implementation in

tandem with firm size. The results of this PhD research suggest that increasing KM strategy implementation too far ahead of growth in firm size would likely have notably harmful effects on performance.

The main practical implication of this study is the TM/KM-strategy fit which highlights the importance of TM practices and KM strategy alignment with the organisation's overall strategy. The management of strategic human capital with the right level of attention from senior management in medium-sized enterprises would give ample contribution to financial performance. The extent of investment on TM practices and KM strategy need to be aligned accordingly due to the curvilinear effects of TM/KM on performance. The right level of attention on KM investment is essential in order to gain the right balance between KM implementation and organisational capability. The findings of this study have supported the 'too-much-talent' effects that would negatively influence financial performance. This negative effect can be reduced especially if senior management in SMEs play their role in ensuring the strategic fit between KM strategy and the available resources in the organisations.

The following discussion concentrates on the implications of the research findings on certain policy and strategic planning pertaining to Malaysian SMEs in Malaysia and ASEAN. With regards to the TMGT effects that explain the curvilinear relationship between TM-and KM on SMEs' performance, this has elevated the urgency for the Malaysian government through SMECorp. More attention should be given to developing the required knowledge and skills for SMEs' senior management in managing talent and knowledge in their organisations. The impact of ASEAN Economic Community in creating a competitive, innovative, and dynamic ASEAN contributes to the development of new policies related to Malaysian SMEs. The

aforementioned findings and practical contributions would need further support from the government in elevating human capital development in Malaysia.

The Malaysian SMEs Master Plan 2012-2020 has promoted the new approach to SME development, which is more outcome-based and seems to outline a more comprehensive plan for SMEs in Malaysia. For example, the Human Resource Development Fund (HRFD) has shown a strong positive impact on investment, capital intensity and productivity of these SMEs. The findings from this PhD research should be the starting point in finding new ways in implementing TM practices and KM strategy in the context of Malaysian SMEs. These results have important implications for developing and designing new programmes in these two SMEs performance levers: (1) Innovation and technology adoption; and, (2) Human capital development. Perhaps, SMECorp could promote TM and KM strategy implementation in medium-sized enterprises, improve their capability and help these enterprises manage their strategic human capital resources akin to the way large enterprises manage theirs in the future.
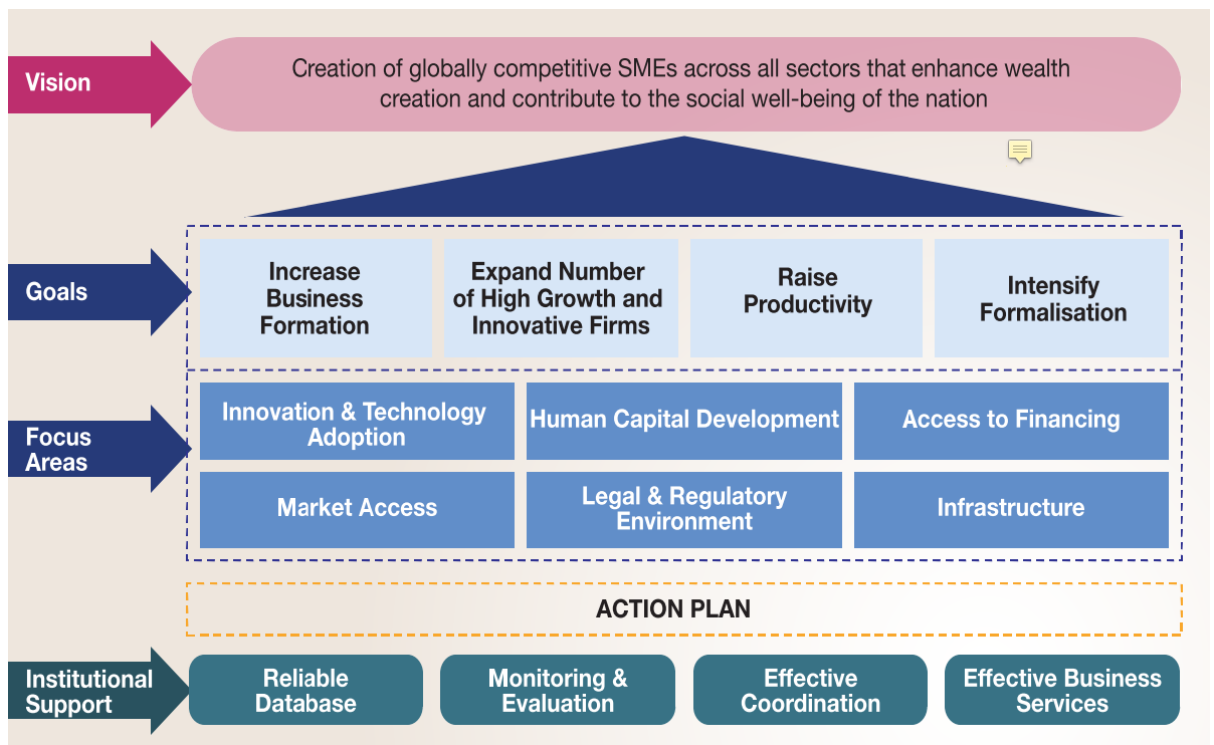
Figure 7.1: New SME Development Framework.

Furthermore, these findings have significant implications for better SME Master Plan 2012–2020 implementation. This study suggests the importance of managing strategic human capital resources even in smaller organisations like SMEs. TM practices and KM strategy are practices that promote the improvement of unit-level capacities (i.e., organisational performance) based on individual knowledge, skills, and abilities that are accessible for unit-relevant competitive advantage (Ployhart et al. 2014: 376). The results of this research have supported the idea that talent and knowledge management are practices that could contribute for SMEs' human capital development performance lever as suggested in the SME Master Plan 2012–2020. Figure 7.1 above illustrates the new SME development framework outline in the master plan. The present study has established a quantitative framework for detecting potential positive effects of TM and KM strategy on performance of Malaysian SMEs. Future

research should explore using qualitative study to find out to what extent these SMEs, especially the medium-sized ones, could benefit from TM and KM strategy.

In the present study, 1-InnoCERT rating was utilised as alternative dependent variable for Hypothesis 1(b) and 2(b). However, the result of Hypothesis 1(b) was not supported. Only Hypothesis 2(b) indicated significant results for both binomial and multinomial regressions using the 1-InnoCERT rating (not-certified, A, AA, and AAA). The results from the analysis suggested positive effects between KM strategy and innovation performance in the sample of 41 companies with 1-InnoCERT certification. This finding is particularly a relevant external assessment on the success of 1-InnoCERT programmes. The findings of the present study could be used to help SMECorp as the accountable government body in achieving one of the important goals of expanding number of high growth and innovative firms. Perhaps, since KM strategy has positive association with innovation performance up to a certain point and would turn negative if too much focus is given on the implementation of KM strategy, the 1-InnoCERT programmes could include TM and KM strategic implementation that is developed to suit SMEs as possible ways to elevate innovation performance in the programme.

7.9 Conclusions, Limitations and Suggestions for Future Research

The current results have confirmed the association between TM and KM strategy and their effects on organisational performance. Although the research design of this study utilised a single data collection effort in which the same respondents provided information for both assessments of their current TM and KM practices as well as organisational performance, this study also used 1-InooCERT rating (A,AA,AAA, and not-certified) SMEs for 2013–2016 as other innovation performance measures. The

results have indicated positive relationship between KM strategy and innovation performance and positive association between TM and KM strategy and their effects on financial performance. These results have also suggested some interesting implications for future research. Future research should focus on study designs that would be able to better demonstrate the causal order to show that TM and KM strategy, when implemented correctly, can positively generate higher organisational performance. This calls for a focus on gathering data at multiple points in time as suggested by Wright et al. (2005) and Wall & Wood (2005). Therefore, the results of Hypotheses 1(a), 2(a), 2(b) indicated curvilinear association between TM-and KM on organisational performance.

An indication of positive TM development in the context of Asia has been reflected in 2015-2016 reports on the Global Talent Competitiveness Index: International Mobility and Talent Attraction is of significant relevant to Asia and ASEAN. However, Malaysia's long-term attractiveness as a talent hub is currently put to test as the country weathers through its biggest political crisis and uncertainty. Hence, research on TM and KM in the context of Malaysia would give new insights due to the unique influence of internal and external environment on human capital development in the country.

This study has also examined the role of senior management in SMEs in orchestrating the most strategic resources in the organisations (i.e., talents and knowledge). OLS regression analysis revealed that the relationships between TM-and KM on organisational performance are inverted U-curved in nature. Further analysis as recommended by Haans et al. (2016) and suggested by Lind & Mehlum (2010) have confirmed the inverted U-shape quadratic association between (1) TM and financial

performance, and (2) KM on organisational performance. However, although the results of OLS regression analysis illustrated inverted U-shape relationships for all the hypotheses, the graphs confirmed that not all relationships showed sufficiently steep slope at both ends of the data range (see Appendix 4). The overall analysis indicated that only Hypothesis 1(a), 2(a), and 2(b) were fit to be considered as a quadratic U-shape.

In addition, the second major finding from the analysis using SPSS PROCESS Macro is that, the conditional moderation analysis indicated that senior management's perception on the strategic importance of HR would positively influence KM strategy and financial performance relationship at low level of interaction. Combined together, these results suggested that although there were diminishing marginal effects on TM and KM strategy implementation in the context of Malaysian medium-sized enterprises, senior management should not totally neglect these strategies for fear of decline in performance (Haans et al. 2016). The positive interaction effects of senior management's perception on the strategic importance of HR indicated the important role of senior management in orchestrating knowledge as strategic resources. Furthermore, according to absorptive capacity theory that views the ability of organisations to utilise external knowledge and absorb them internally, in the context of medium-sized enterprises, the organisations' absorptive capacity would depend on the senior manager as the person who stands at the interface of either the organisation and the external environment (Cohen & Levinthal 1990).

This thesis has provided a deeper insight into Malaysian SMEs' capability in implementing TM and KM strategy. The results on the inverted U-shaped effects of TM-and KM on performance have suggested that increasing level of TM-and KM

appear beneficial to a point, after which positive returns would cease and performance would begin to decline. Hence, these results have suggested that the maximum positive effect of TM-and KM on performance, at least in terms of SMEs, would occur at lower level of TM-and KM strategy implementation. Hence, for future research, it is suggested that this research should be extended in an exploratory study by interviewing the senior management especially the CEOs of these SMEs on the implementation of TM and KM in their organisations. Perhaps, exploratory case study or interviews could determine the maximum implementation level that would positively contribute to organisational performance before the TMGT effects occurs.

With regards to the turning point, the numbers would not give practical effects as the points were calculated from the equation of the curvilinear graph from the available data from the online survey. What is more important for future research is to further investigate, perhaps with qualitative interview to explore to what extent SMEs are capable in implementing TM and KM strategy. Since the main findings of this study have highlighted the inverted U-shaped relationship between TM, KM relationship and organisational performance, questions such as how TM and KM would be implemented in organisations would give valuable insights and to what extent they would invest in such strategy that are beneficial for positive association between TM practices and KM strategy on performance.

Lastly, the results from Johnson-Neyman technique of conditional process modelling using SPSS PROCESS Macro indicated alternative approach to examine interaction effect from the 'floodlight' perspective (Spiller et al. 2013). There were two floodlight shines: on the lower end (between $\beta = 4.26$ and 7.66) and high end (between $\beta = -2.68$ and -7.7) of the range of values of the continuous predictor (KM strategy) for

which the group differences were statistically significant (see Johnson-Neyman analysis in Table 3, in Appendix 3 of this thesis). This indicated the possibility of non-linear interaction effect on the quadratic U-shape relationship that would signify a potential future research.

This study had some limitations. The first limitation was the self-reporting by the senior management. This is a problem common for organisational level study concerning whether an individual response can represent the intended organisational level situation may exist. In the context of SMEs, the senior management would be the ones who would capture the birds' eyes view on the overall organisations' management. Hence, to alleviate this problem, Harman one-factor test indicated that common method variance was not a major concern. In addition, this study also used multiple sources and measures for innovation performance. Besides the data obtained from the online survey, the 1-INNOcert certification rating from SMECorp was used as alternative measures in testing Hypothesis 1(b) and Hypothesis 2(b). This multiple sources of data were one of the approaches suggested by Podsakoff et al. (2003) in reducing the problem of common method variance.

Second, there may be an effect, related to the duration of time during which the respondents were asked to provide their responses. However, using QUALTRICS software for the online survey, the duration taken by respondents to finish the online survey had been recorded. This increased the reliability of the available data. Since this PhD study used data collected in one point of time (May–July 2015), this raises the issue of causality of TM, KM and their effects on performance. Hence, the results of this particular PhD study have indicated the 'association' (rather than 'causality') between TM practices and KM strategy and their effects on organisational performance.

Third, the model was examined in Malaysian SMEs, which is an emerging economy in South East Asia. Perhaps a comparative study testing the proposed model between developed and developing countries would give a valuable new insight. Finally, future research could also explore other intervening mechanisms that could possibly link TM and KM with organisational performance. In this study, based on attention-based view theory, senior management perceived strategic importance of HR has been found to have positively influenced the association between KM strategy and financial performance at low level of attention. There is also a need to consider what would lead senior management to direct their attention and focus on these specific knowledge-based strategies and how they implement these strategies in the context of smaller organisations.

In conclusion, while the positive effects of TM and KM on organisational performance have been generally well established in the literature, the present researcher has observed that, *ceteris paribus*, high levels of TM and KM serve to diminish organisational performance in SMEs context. SMEs need TM and KM practices encompassing resignation to the situation, flexibility and resilience in order to survive and progress (Stokes et al. 2015). Hopefully, this study will inspire additional research linking TM and KM with moderating conditions and non-linear performance outcomes.

REFERENCES LIST

Aguinis, H., Gottfredson, R.K. & Joo, H., 2013. Best-Practice Recommendations for Defining, Identifying, and Handling Outliers. *Organizational Research Methods*, 16(2), pp.270–301.

Alegre, J. & Chiva, R., 2008. Assessing the impact of organizational learning capability on product innovation performance: An empirical test. *Technovation*, 28(6), pp.315–326.

Alegre, J., Sengupta, K. & Lapiedra, R., 2011. Knowledge management and innovation performance in a high-tech SMEs industry. *International Small Business Journal*, 31(4), pp.454–470.

Alexander, A.T., Neyer, A.-K. & Huizingh, K.R.E., 2016. Introduction to the special issue: transferring knowledge for innovation. *R&D Management*, 46(2), pp.305–311.

Alias, N.E., Noor, N.M. & Hassan, R., 2014. Examining the Mediating Effect of Employee Engagement on the Relationship between Talent Management Practices and Employee Retention in the Information and Technology (IT) Organizations in Malaysia. *Journal of Human Resource Management and Labor Studies*, 2(2), pp.227–242.

Allison, P., 2002. Missing Data. Quantitative Applications in the Social Sciences. In *British Journal of Mathematical and Statistical Psychology*. pp. 193–196.

Alnuaimi, T. & George, G., 2015. Appropriability and the retrieval of knowledge after spillovers. *Strategic Management Journal*, 37(3).

Alvarez, S. a. & Busenitz, L.W., 2001. The entrepreneurship of resource based theory. *Journal of Management*, 27(2001), pp.755–775.

Andaya, B.W. and Andaya, L.Y., 2016. *A history of Malaysia*. Palgrave Macmillan.

Argote, L., McEvily, B. & Reagans, R., 2003. Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes. *Management Science*, 49(4), pp.571–582.

Armstrong, C.E. & Shimizu, K., 2007. A Review of Approaches to Empirical Research on the Resource-Based View of the Firm . *Journal of Management*, 33(6), pp.959–986.

ASEAN Secretariat, 2015. *Thinking globally, prospering regionally - ASEAN Economic Community 2015* 2015th ed. A. S. A. 2014, ed., Jakarta, Indonesia: Copyright Association of Southeast Asian Nations (ASEAN) 2014.

Ashton, C. & Morton, L., 2005. Managing talent for competitive advantage: Taking a systemic approach to talent management. *Strategic HR Review*, 4(5), pp.28–31.

Ayetuoma, O., Swailes, S. & Handley, J., 2015. *Differentiating Talent Identification Practices: Case studies from the UK public and private sectors.*, Spain.

Baptista Nunes, M. et al., 2006. Knowledge management issues in knowledge intensive SMEs. *Journal of Documentation*, 62(1), pp.101–119.

Barnett, M.L., 2008. An attention-based view of real options reasoning. *Academy of Management Review*, 33(3), pp.606–628.

Barney, J., 1991. Firm resources and sustained competitive advantage. *Journal of management*, 17(1), pp.99–120.

Barney, J., 2001. The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27(6), pp.625–641.

Barney, J. & Wright, P., 1998. On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37(1), pp.31–46.

Barney, J.B., 1995. Looking inside for competitive advantage. *Academy of Management Perspectives*, 9(4), pp.49–61.

Barney, J.B. & Arikan, A.M., 2001. *The Resource-based View: Origins and Implications*,

Barney, J.B., Ketchen, D.J. & Wright, M., 2011. The Future of Resource-Based Theory: Revitalization or Decline? *Journal of Management*, 37(5), pp.1299–1315.

Barrick, M.R. et al., 2015. Collective organizational engagement: Linking motivational antecedents, strategic implementation, and firm performance. *Academy of Management Journal*, 58(1), pp.111–135.

Baskerville, R. and Dulipovici, A., 2006. The theoretical foundations of knowledge management. *Knowledge Management Research & Practice*, *4*(2), pp.83-105.

Becker, B.E. & Huselid, M.A., 2006. Strategic Human Resources Management: Where Do We Go From Here? *Journal of Management*, 32(6), pp.898–925.

Becker, G., Becker, B. & Gerhart, B., 1996. The impact of human resource management on organizational performance: Progress and prospects. *Academy of management journal*, 39(4), pp.779–801.

Bell, S.T. et al., 2011. Getting Specific about Demographic Diversity Variable and Team Performance Relationships: A Meta-Analysis. *Journal of Management*, 37(3), pp.709–743.

Bendersky, C. & Hays, N. a., 2012. Status Conflict in Groups. *Organization Science*, 23(2), pp.323–340.

Berman, S.L., Down, J. & Hill, C.W.L., 2002. Tacit knowledge as a source of competitive advantage in the national basketball association. *Academy of Management Journal*, 45(1), pp.13–31.

Björkman, I. et al., 2013. Talent or Not? Employee Reactions to Talent Identification. *Human Resource Management*, 52(2), pp.195–214.

Bogner, W. & Bansal, P., 2007. Knowledge management as the basis of sustained high performance. *Journal of Management Studies*.

Boh, W.F., Nguyen, T.T. & Xu, Y., 2013. Knowledge transfer across dissimilar cultures. *Journal of Knowledge Management*, 17, pp.29–46.

Boudreau, J. & Ramstad, P., 2007. *Beyond HR: The new science of human capital*,

Boudreau, J.W., 2013. Appreciating and "retooling" diversity in talent management conceptual models: A commentary on "The psychology of talent management: A review and research agenda." *Human Resource Management Review*, 23(4), pp.286–289.

Boudreau, J.W. & Ramstad, P.M., 2005a. Talentship, talent segmentation, and sustainability: A new HR decision science paradigm for a new strategy definition. *Human Resource Management*, 44(2), pp.129–136.

Boudreau, J.W. & Ramstad, P.M., 2005b. Talentship, talent segmentation, and sustainability: A new HR decision science paradigm for a new strategy definition. *Human Resource Management*, 44(2), pp.129–136.

Boxall, P., 1998. Achieving competitive advantage through human resource strategy: towards a theory of industry dynamics. *Human Resource Management Review*, 8(3), pp.265–288.

Boxall, P., 2012. High-performance work systems: what, why, how and for whom? *Asia Pacific Journal of Human Resources*, 50(2), pp.169–186.

Boxall, P., 1996. The Strategic HRM Debate and the Resource-Based View of the Firm. *Human resource management journal*, 6(3), p.59.

Boxall, P. & Purcell, J., 2000. Strategic human resource management: where have we come from and where should we be going? *International Journal of Management Reviews*, 2(2), pp.183–203.

Brush, C.G. & Chaganti, R., 1999. Businesses without glamour? an analysis of resources on performance by size and age in small service and retail firms. *Journal of Business Venturing*, 14(3), pp.233–257.

Bryson, A., Forth, J. & Kirby, S., 2005. High-involvement management practices, trade union representation and workplace performance in Britain. *Scottish Journal of Political Economy*, 52(3), pp.451–491.

Bullock, N. et al., 2009. Talent identification and deliberate programming in skeleton: ice novice to Winter Olympian in 14 months. *Journal of sports sciences*, 27(4), pp.397–404.

Busse, C., Mahlendorf, M.D. & Bode, C., 2016. The ABC for Studying the Too-Much-of-a-Good-Thing Effect: A Competitive Mediation Framework Linking Antecedents, Benefits, and Costs. *Organizational Research Methods*, 19(1), pp.131–153.

Cappelli, P., 2009. A supply chain model for talent management. *People & Strategy*, 32, pp.4–

7.

Cappelli, P., 2008a. Talent Management for the Twenty-First Century. *Harvard Business Review*.

Cappelli, P., 2008b. Talent on demand. In *Harvard Business School Publishing, Boston, MA*. Boston, MA: Harvard Business Press.

Cappelli, P. & Keller, J., 2014. Talent Management: Conceptual Approaches and Practical Challenges. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, pp.305–331.

Caridi-Zahavi, O., Carmeli, A. & Arazy, O., 2016. The Influence of CEOs' Visionary Innovation Leadership on the Performance of High-Technology Ventures: The Mediating Roles of Connectivity and Knowledge Integration. *Journal of Product Innovation Management*, 33(3), pp.356–376.

Carmeli, A. & Schaubroeck, J., 2005a. How leveraging human resource capital with its competitive distinctiveness enhances the performance of commercial and public organizations. *Human Resource Management*, 44(4), pp.391–412.

Carmeli, A. & Schaubroeck, J., 2005b. How leveraging human resource capital with its competitive distinctiveness enhances the performance of commercial and public organizations. *Human Resource Management*, 44(4), pp.391–412.

Chadee, D. & Raman, R., 2012. External knowledge and performance of offshore IT service providers in India: the mediating role of talent management. *Asia Pacific Journal of Human Resources*, 50(4), pp.459–482.

Chadwick, C., Way, S.A., et al., 2013. Boundary Conditions of the High-Investment Human Resource Systems-Small-Firm Labor Productivity Relationship. *Personnel Psychology*, 66(2), pp.311–343.

Chadwick, C., Way, S.A., et al., 2013. Boundary Conditions of the High-Investment Human Resource Systems-Small-Firm Labor Productivity Relationship. *Personnel Psychology*, 66(2), pp.311–343.

Chadwick, C. & Dabu, A., 2009. Human Resources, Human Resource Management, and the Competitive Advantage of Firms: Toward a More Comprehensive Model of Causal Linkages. *Organization Science*, 20(1), pp.253–272.

Chadwick, C., Super, J.F. & Kwon, K., 2015. Resource orchestration in practice: CEO emphasis on SHRM, commitment-based HR systems, and firm performance. *Strategic Management Journal*, 36(3), pp.360–376.

Chami-Malaeb, R. & Garavan, T., 2013. Talent and leadership development practices as drivers of intention to stay in Lebanese organisations: the mediating role of affective commitment. *The International Journal of Human Resource Management*, 24(21), pp.4046–4062.

Chang, S.J., van Witteloostuijn, A. & Eden, L., 2010. From the Editors: Common method variance in international business research. *Journal of International Business Studies*, 41(2), pp.178–184.

Chaui, X., 2008. *Is talent management just " old wine in new bottles "? -------the case of Multinational Corporations in Beijing*.

Chen, C.J. & Huang, J.-W., 2009. Strategic human resource practices and innovation

performance — The mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), pp.104–114.

Chen, I.W.J., Wu, I. & Chen, J., 2014. Knowledge management driven firm performance : the roles of business process capabilities and organizational learning. *Journal of Knowledge Management*, 18(6), pp.1141–1164.

Chi, N.W., Huang, Y.-M. & Lin, S.-C., 2009. A Double-Edged Sword? Exploring the Curvilinear Relationship Between Organizational Tenure Diversity and Team Innovation: The Moderating Role of Team-Oriented HR Practices. *Group & Organization Management*, 34(6), pp.698–726.

Chi, N.W. & Lin, C.Y.Y., 2011. Beyond the High-Performance Paradigm: Exploring the Curvilinear Relationship between High-Performance Work Systems and Organizational Performance in Taiwanese Manufacturing Firms. *British Journal of Industrial Relations*, 49(3), pp.486–514.

Chong, A.Y.L. et al., 2014. Can e-business adoption be influenced by knowledge management? An empirical analysis of Malaysian SMEs. *Journal of Knowledge Management*, 18(1), pp.121–136.

Chong, S.C., 2006. KM Implementation and Its Influence on Performance: An Empirical Evidence from Malaysian Multimedia Super Corridor (MSC) Companies. *Journal of Information & Knowledge Management*, 5(1), pp.21–37.

CIPD, 2012. Emotional or Transactional Engagement − Does it Matter ? *Research Insight*, p.33.

Clarke, P. & Cooper, M., 2000. Knowledge Management and Collaboration. In *Proc. of the*

Third Int. Conf. On Practical Aspects of Knowledge Management (PAKM2000). Basel, Switzerland, pp. 30–31.

Coff, R. & Kryscynski, D., 2011. Drilling for Micro-Foundations of Human Capital-Based Competitive Advantages. *Journal of Management*, 37(5), pp.1429–1443.

Coff, R.W., 1997. Human assets and management dilemmas: Coping with hazards on the road to resource-based theory. *Academy of Management Review*, 22(2), pp.374–402.

Coff, R.W., 2002. Human capital, shared expertise, and the likelihood of impasse in corporate acquisitions. *Journal of Management*, 28(1), pp.107–128.

Cohen, J. et al., 2003. *Applied Multiple Regression / Correlation Analysis for the Behavioral Sciences*,

Cohen, W.M. & Levinthal, D. a., 1990. Absorptive Capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), pp.128–152.

Collings, D., 2010. Smart Talent Management: Building Knowledge Assets for Competitive Advantage -Personnel Review. *Personnel Review*, 39(3), pp.397–399.

Collings, D., Scullion, H. & Vaiman, V., 2011. European perspectives on talent management. , 5(5), pp.453–462.

Collings, D.G. et al., 2010. Strategic orientation, human resource management practices and organizational outcomes: evidence from Turkey. *The International Journal of Human Resource Management*, 21(14), pp.2589–2613.

Collings, D.G., 2014. Toward Mature Talent Management: Beyond SHareholder Value. *Human Resource Development Quarterly*, 25(3), pp.301–319.

Collings, D.G. & Mellahi, K., 2013. Commentary on: "Talent—innate or acquired? Theoretical considerations and their implications for talent management." *Human Resource Management Review*, 23(4), pp.322–325.

Collings, D.G. & Mellahi, K., 2009. Strategic talent management: A review and research agenda. *Human Resource Management Review*, 19(4), pp.304–313.

Combs, J.G. et al., 2006. How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59, pp.501–528.

Cooke, F.L., Saini, D.S. & Wang, J., 2014. Talent management in China and India: A comparison of management perceptions and human resource practices. *Journal of World Business*, 49(2), pp.225–235.

Coyte, R., Ricceri, F. & Guthrie, J., 2012. The management of knowledge resources in SMEs: an Australian case study. *Journal of Knowledge Management*, 16(5), pp.789–807.

Crook, T.R. et al., 2011. Does Human Capital Matter? A Meta-Analysis of the Relationship Between Human Capital and Firm Performance. *The Journal of applied psychology*, 96(3), pp.443–456.

Crook, T.R. et al., 2008. STRATEGIC RESOURCES AND PERFORMANCE: A META-ANALYSIS. *Strategic Management Journal*, 29, pp.1141–1154.

Cui, W., Khan, Z. & Tarba, S.Y., 2016. Strategic Talent Management in Service SMEs of China. *Thunderbird International Business Review*, 49(5), pp.630–631.

Dahlander, L., O'Mahony, S. & Gann, D.M., 2016. One foot in, one foot out: how does

individuals' external search breadth affect innovation outcomes? *Strategic Management Journal*, 37(2), pp.280–302.

Davenport, T. & Prusak, L., 1998. *Working knowledge: How organizations manage what they know* H. B. S. Press, ed., Boston, MA.

Delaney, J.T. & Huselid, M. a., 1996. The Impact of Human Resource Management Practices on Perceptions of Organizational Performance. *Academy of Management Journal*, 39(4), pp.949–969.

Delery, J. & Doty, D., 1996. Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of management Journal*, 39(4), pp.802–835.

Delong, T. & Vijayaraghavan, V., 2003. Let's hear it for B players. *Harvard business review*, 81(6), p.p96-102. 7p. 3 Color Photographs.

Dennis Jr., W.J., 2003. Raising Response Rates in Mail Surveys of Small Business Owners: Results of an Experiment. *Journal of Small Business Management*, 41(3), pp.278–295.

Dictionary, C., 2008. Cambridge Advanced Learner's Dictionary.

Dictionary, O.E., 2015. OED online.

Donate, M.J. & Guadamillas, F., 2011. Organizational factors to support knowledge management and innovation. *Journal of Knowledge Management*, 15(6), pp.890–914.

Dries, N., 2013a. Talent management, from phenomenon to theory: Introduction to the Special Issue. *Human Resource Management Review*, 23(4), pp.267–271.

Dries, N., 2013b. The psychology of talent management: A review and research agenda. *Human Resource Management Review*, 23, pp.272–285.

Dries, N., Vantilborgh, T. & Pepermans, R., 2012. The role of learning agility and career variety in the identification and development of high potential employees. *Personnel Review*, 41(3), pp.340–358.

Durst, S. & Edvardsson, I.R., 2012. Knowledge management in SMEs: a literature review. *Journal of Knowledge Management*, 16(6), pp.879–903.

Durst, S. & Wilhelm, S., 2012. Knowledge management and succession planning in SMEs. *Journal of Knowledge Management*, 16, pp.637–649.

Dweck, C.S., 2012. Mindsets and human nature: promoting change in the Middle East, the schoolyard, the racial divide, and willpower. *The American psychologist*, 67(8), pp.614–22.

Eisenhardt, K.M. & Martin, A.J., 2000. Dynamic capabilities: what are they? *Strategic Management Journal*, 21, pp.1105–1121.

Estrada, I., Faems, D. & de Faria, P., 2014. Coopetition and product innovation performance: The role of internal knowledge sharing mechanisms and formal knowledge protection mechanisms. *Industrial Marketing Management*, 53, pp.56–65.

Farndale, E. et al., 2014. Balancing individual and organizational goals in global talent management: A mutual-benefits perspective. *Journal of World Business*, 49(2), pp.204–214.

Farndale, E., Scullion, H. & Sparrow, P., 2010. The role of the corporate HR function in global

talent management. *Journal of World Business*, 45(2), pp.161–168.

Festing, M., Schäfer, L. & Scullion, H., 2013. Talent management in medium-sized German companies: an explorative study and agenda for future research. *The International Journal of Human Resource Management*, 24(9), pp.1872–1893.

Freeman, L.A., 2001. Information systems knowledge: Foundations, definitions, and applications. *Information Systems Frontiers*, *3*(2), pp.249-266.

Gallardo-Gallardo, E. et al., 2015. Towards an understanding of talent management as a phenomenon-driven field using bibliometric and content analysis. *Human Resource Management Review*, 25(3), pp.264–279.

Gallardo-Gallardo, E., Dries, N. & González-Cruz, T.F., 2013. What is the meaning of "talent" in the world of work? *Human Resource Management Review*, 23(4), pp.290–300.

Garavan, T.N., 2012. Global talent management in science-based firms: an exploratory investigation of the pharmaceutical industry during the global downturn. *The International Journal of Human Resource Management*, 23(12), pp.2428–2449.

Gilman, M., Raby, S. & Pyman, A., 2015. The contours of employee voice in SMEs: The importance of context. *Human Resource Management Journal*, 25(4), pp.563–579.

Glisby, M. & Holden, N., 2003. Contextual constraints in knowledge management theory: the cultural embeddedness of Nonaka's knowledge-creating company. *Knowledge and Process Management*, 10(1), pp.29–36.

Grant, R.M., 1996a. Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration. *Organization Science*, 7(4), pp.375–387.

Grant, R.M., 1996b. Toward a Knowledge-Based Theory of the firm. *Strategic management journal*, 17(s2), pp.109–122.

Greer, C.R., Carr, J.C. & Hipp, L., 2015. Strategic Staffing and Small-Firm Performance. *Human Resource Management*, p.n/a-n/a.

Grigoriou, K. & Rothaermel, F.T., 2013. Structural Microfoundations of Innovation: The Role of Relational Stars. *Journal of Management*, 40(2), pp.586–615.

Groysberg, B., Lee, L.E. & Nanda, A., 2008. Can They Take It With Them? The Portability of Star Knowledge Workers' Performance. *Management Science*, 54(7), pp.1213–1230.

Groysberg, B., Polzer, J.T. & Elfenbein, H.A., 2011. Too Many Cooks Spoil the Broth: How High-Status Individuals Decrease Group Effectiveness. *Organization Science*, 22(3), pp.722–737.

Groysberg, B., Sant, L. & Abrahams, R., 2008. When "stars" migrate, do they still perform like stars? *MIT Sloan Management Review*, 50(1), p.41–46.

Guthridge, M., Komm, A. & Lawson, E., 2008. Making talent a strategic priority. *McKinsey Quarterly*, 1(November 2007), pp.50–59.

Haak-Saheem, W. & K. Darwish, T., 2014. The role of knowledge management in creating a culture of learning J. C. Ickis, A. G. Woodside, & E. Ogliastri, eds. *Management Decision*, 52(9), pp.1611–1629.

Haans, R.F.J., Pieters, C. & He, Z.-L., 2016. Thinking about U: Theorizing and testing U- and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, 37(7), pp.1177–1195.

Hambrick, D.C., 2007. UPPER ECHELONS THEORY: AN UPDATE. *Academy of Management Review*, 32(2), pp.334–343.

Hambrick, D.C. & Mason, P.A., 1984. Upper Echelons: The Organization as a Reflection of Its Top Managers. *Academy of Management Review*, 9(2), pp.193–206.

Hansen, M.T., Nohria, N. & Tierney, T., 1999. What ' s Your Strategy for Managing Knowledge? *Harvard Business Review*, 72(2), pp.106–116.

Harris, C., McMahan, G. & Wright, P., 2012. Talent and time together: The impact of human capital and overlapping tenure on unit performance. *Personnel Review*, 41(4), pp.408–427.

Harris, M.M., Anseel, F. & Lievens, F., 2008. Keeping up with the Joneses: A field study of the relationships among upward, lateral, and downward comparisons and pay level satisfaction. *Journal of Applied Psychology*, 93(3), pp.665–673.

Hart, S.L., 1995. A Natural-Resource-Based View of the Firm. *The Academy of Management Review*, 20(4), p.986.

Hartmann, E., Feisel, E. & Schober, H., 2010. Talent management of western MNCs in China: Balancing global integration and local responsiveness. *Journal of World Business*, 45(2), pp.169–178.

Hatch, N. & Dyer, J., 2004. Human capital and learning as a source of sustainable competitive advantage. *Strategic management journal*, 25, pp.1155-1178.

Hayes, A.F., 2012. PROCESS: A Versatile Computational Tool for Observed Variable Mediation, Moderation, and Conditional Process Modeling [White paper]. Retrieved from

http://www.afhayed.com/public/process2012.pdf. , pp.1–39.

Hayton, J.C., Haber, S. & Reichel, A., 2003. The cumulative nature of the entrepreneurial process: The contribution of human capital, planning and environment resources to small venture performance. *Human Resource Management*, 22, pp.375–391.

Henderson, A.D., Miller, D. & Hambrick, D.C., 2006. How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal*, 27(5), pp.447–460.

Hirschman, C., 1987. The meaning and measurement of ethnicity in Malaysia: An analysis of census classifications. *The Journal of Asian Studies*, *46*(3), pp.555-582.

Hitt, M. et al., 2001. Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of management journal*, 44(1), pp.13–28.

Ho, T.C.F., Ahmad, N.H. & Ramayah, T., 2016. Competitive Capabilities and Business Performance among Manufacturing SMEs: Evidence from an Emerging Economy, Malaysia. *Journal of Asia-Pacific Business*, 17(1), pp.37–58.

Hoaglin, D.C. & Iglewicz, B., 1987. Fine-Tuning Some Resistant Rules for Outlier Labeling. *Journal of the American Statistical Association*, 82(400), pp.1147–1149.

Hoaglin, D.C., Iglewicz, B. & Tukey, J.W., 1986. Performance of Some Resistant Performance Rules for Labeling Outlier. *Journal of the American Statistical Association*, 81(396), pp.991–999.

Höglund, M., 2012. Quid pro quo? Examining talent management through the lens of

psychological contracts. *Personnel Review*, 41(2), pp.126–142.

Hoopes, D.G., Madsen, T.L. & Walker, G., 2003. Guest editors' introduction to the special issue: Why is there a resource-based view? Toward a theory of competitive heterogeneity. *Strategic Management Journal*, 24, pp.889–902.

Horwitz, F.M. et al., 2003. Finders, keepers? Attracting, motivating and Retaining Knowledge Workers. *Human Resource Management*, 13(4), pp.23–44.

Hosseini, S.M.P., 2014. Innovative Capabilities Among SMEs in Malaysian Manufacturing: An Analysis Using Firm-Level Data. *New Zealand Economic Papers*, 48(3), pp.257–268.

Huang, J.L. et al., 2015. Detecting insufficient effort responding with an infrequency scale: Evaluating validity and participant reactions. *Journal of Business and Psychology*, 30(2), pp.299–311.

Huselid, M., 1995. The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *Academy of Management Journal*, 38(3), pp.635–672.

Huselid, M.A., Beatty, R.W. & Becker, B.E., 2005. A Players or A Positions? The strategic logic of workforce management. *Harvard Business Review*, 83(12), pp.110–117.

Huselid, M.A. & Becker, B.E., 2011. Bridging Micro and Macro Domains: Workforce Differentiation and Strategic Human Resource Management. *Journal of Management*, 37(2), pp.421–428.

Iles, P., Chuai, X. & Preece, D., 2010. Talent Management and HRM in Multinational companies in Beijing: Definitions, differences and drivers. *Journal of World Business*,

45(2), pp.179–189.

Iles, P., Preece, D. & Chuai, X., 2010. Talent management as a management fashion in HRD: towards a research agenda. *Human Resource Development International*, 13(2), pp.125–145.

International Council for Small Business 2015, Spirit of Collaboration in Entrepreneuriship by Dato' Hafsah Hashim, accessed 11 May 2015, *<https://icsb.org/spirit-of-collaboration-in-entrepreneurship/*

J. Ely, R., 2004. A field study of group diversity, participation in diversity education programs, and performance. *Journal of Organizational Behaviour*, 25(December 2003), pp.755–780.

J. Wales, W. et al., 2013. Nonlinear Effects of Entrepreneurial Orientaton on Small Firm Performance: The Moderating Role of Resource Orchestration Capabilities. *Strategic Entrepreneurship Journal*, 7, pp.93–121.

Jantunen, A., 2005. Knowledge-processing capabilities and innovative performance: an empirical study. *European Journal of Innovation Management*, 8(3), pp.336–349.

Javalgi, R.G. & Todd, P.R., 2011. Entrepreneurial orientation, management commitment, and human capital: The internationalization of SMEs in India. *Journal of Business Research*, 64, pp.1004–1010.

Jayasingam, S. et al., 2012. Knowledge management practices and performance: are they truly linked? *Knowledge Management Research & Practice*, 11(3), pp.255–264.

Jehn, K. a. & Bezroukova, K., 2004. A field study of group diversity, work group context, and

performance. *Journal of Organizational Behaviour*, 25(December 2003), pp.703–729.

Jones, J.T. et al., 2012. Talent management in practice in Australia: individualistic or strategic? An exploratory study. *Asia Pacific Journal of Human Resources*, 50(4), pp.399–420.

Joyce, W.F. & Slocum, J.W., 2012. Top management talent, strategic capabilities, and firm performance. *Organizational Dynamics*, 41(3), pp.183–193.

Kaiser, R.B. & Overfield, D. V., 2011. Strengths, strengths overused, and lopsided leadership. *Consulting Psychology Journal: Practice and Research*, 63(2), pp.89–109.

Katila, R. & Ahuja, G., 2002. Something Old, Something New: A Longitudinal Study of Search Behavior and New Product Introduction. *Academy of Management Journal*, 45(6), pp.1183–1194.

Kim, B., Kim, E. & Foss, N.J., 2016. Balancing absorptive capacity and inbound open innovation for sustained innovative performance: An attention-based view. *European Management Journal*, 34(1), pp.80–90.

Kim, T.H. et al., 2014. Understanding the effect of knowledge management strategies on knowledge management performance: A contingency perspective. *Information & Management*, 51(4), pp.398–416.

Kim, Y., Williams, R. & Rothwell, W.J., 2014. A Strategic Model for Technical Talent Management: A Model based on a Qualitative Case Study. *Performance Improvement Quaterly*, 6(26(4)), pp.93–121.

Kintana, M.L., Alonso, A.U. & Olaverri, C.G., 2006. High-performance work systems and firms' operational performance: the moderating role of technology. *The International*

Journal of Human Resource Management, 17(1), pp.70–85.

Klaas, B.S. et al., 2012. High-performance work system implementation in Small and Medium Enterprises: A Knowledge-creation Perspective. *Human Resource Management*, 51(4), pp.487–510.

Kogut, B. & Zander, U., 1992. Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organization Science*, 3(3), pp.383–397.

Kong, E., Chadee, D. & Raman, R., 2012. Managing Indian IT professionals for global competitiveness: the role of human resource practices in developing knowledge and learning capabilities for innovation. *Knowledge Management Research & Practice*, 11(4), pp.334–345.

Koput, K.W., 1997. A Chaotic Model of Innovative Search: Some Answers, Many Questions. *Organization Science*, 8(5), pp.528–542.

Kor, Y.Y. & Leblebici, H., 2005a. How do interdependences among human-capital deployment, development, and diversification strategies affect firms' financial performance? *Strategic Management Journal*, 26(10), pp.967–985.

Kor, Y.Y. & Leblebici, H., 2005b. How do interdependencies among human-capital deployment, development, and diversification strategies affect firms' financial performance? *Strategic Management Journal*, 26(10), pp.967–985.

Kotabe, M., Jiang, C.X. & Murray, J.Y., 2014. Examining the Complementary Effect of Political Networking Capability With Absorptive Capacity on the Innovative Performance of Emerging-Market Firms. *Journal of Management*, pp.1–26.

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Kraaijenbrink, J., 2011. Human Capital in the Resource-Based View. In *The Oxford Handbook of Human Capital*. Oxford University Press, pp. 1–15.

Kraaijenbrink, J., Spender, J.-C. & Groen, a. J., 2010. The Resource-Based View: A Review and Assessment of Its Critiques. *Journal of Management*, 36(1), pp.349–372.

Lado, A. & Wilson, M., 1994. Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of management review*, 19(4), pp.699–728.

Lam, L.W. & White, L.P., 1998. Human resource orientation and corporate performance. *Human Resource Development Quarterly*, 9(4), pp.351–364.

Lanvin, B. & Evans, P., 2015. *The Global Talent Competitiveness Index: Talent Attraction and International Mobility 2015-16*,

Laursen, K. & Salter, A., 2005. Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal*, 27(2), pp.131–150.

Leal-Rodríguez, A.L. et al., 2013. Knowledge management, relational learning, and the effectiveness of innovation outcomes. *The Service Industries Journal*, 33(13–14), pp.1294–1311.

Lee, E.J., Kim, H.S. & Kim, H.Y., 2014. Relationships between core factors of knowledge management in hospital nursing organisations and outcomes of nursing performance. *Journal of clinical nursing*, 23(23–24), pp.3513–24.

Lepak, D.P. & Snell, S. a., 2002. Examining the Human Resource Architecture: The Relationships Among Human Capital, Employment, and Human Resource

Configurations. *Journal of Management*, 28(4), pp.517–543.

Lepak, D.P. & Snell, S. a., 1999. The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development. *The Academy of Management Review*, 24(1), p.31.

Levy, O., 2005. The influence of top management team attention patterns on global strategic posture of firms. *Journal of Organizational Behavior*, 26(7), pp.797–819.

Lewin, A.Y. & Nonaka, I.I., 1994. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), pp.14–37.

Lewis, R.E. & Heckman, R.J., 2006. Talent management: A critical review. *Human Resource Management Review*, 16(2), pp.139–154.

Li, Q. et al., 2013. Top Management Attention to Innovation: The Role of Search Selection and Intensity in New Product Introductions. *Academy of Management Journal*, 56(3), pp.893–916.

Lind, J.T. & Mehlum, H., 2010. With or Without U? The Appropriate Test for a U-Shaped Relationship. *Oxford Bulletin of Economics and Statistics*, 72(1), pp.109–118.

Ling, Y.-H., 2011. The influence of intellectual capital on organizational performance—Knowledge management as moderator. *Asia Pacific Journal of Management*, 30(3), pp.937–964.

Lockett, A. & Thompson, S., 2001. The resource-based view and economics. *Journal of Management*, 27(6), pp.723–754.

Lopez-Cabrales, A., Perez Luno, A. & Valle-Cabrera, R., 2009. Knowledge as a mediator

between HRM practices and innovative activity. *Human Resource Management*, 48(4), pp.485–503.

Lopez-Cabrales, A., Valle, R. & Herrero, I., 2006. The contribution of core employees to organizational capabilities and efficiency. *Human Resource Management*, 45(1), pp.81–109.

Lopez, S.V., Ortiz, M.P. & Armengot, C.R., 2011. Managing talent for organisational learning. *European J. of International Management*, 5(5), pp.540.

Longley, D. and Shain, M., 1986. *Macmillan dictionary of personal computing & communications*. Macmillan.

Luoma, M., 2000. Developing people for business success: capability-driven HRD in practice. *Management Decision*, 38(3), pp.145–153.

Macfarlane, F. et al., 2012. Talent management for NHS managers: human resources or resourceful humans? *Public Money & Management*, 32(6), pp.445–452.

Mahoney, J. & Pandian, J., 1992. The Resource-based View Within the Conversation of Strategic Management. *Strategic Management Journal*, 13(5), pp.363–380.

Mahoney, J.T., 1995. The Management of Resources and the Resource of Management. *Journal of Business Research*, (33), pp.91–101.

Marescaux, E., De Winne, S. & Sels, L., 2013. HR practices and affective organisational commitment: (When) does HR differentiation pay off? *Human Resource Management Journal*, 23(4), pp.329–345.

Martin, G., Gollan, P.J. & Grigg, K., 2011. Is there a bigger and better future for employer

branding? Facing up to innovation, corporate reputations and wicked problems in SHRM. *The International Journal of Human Resource Management*, 22(17), pp.3618–3637.

Martin, J. & Schmidt, C., 2010. How to Keep Your Top Talent. *Harvard Business Review*, 88(May), pp.p54-61.

McAdam, R. & Reid, R., 2001. SME and large organisation perceptions of knowledge management: comparisons and contrasts. *Journal of Knowledge Management*, 5(3), pp.231–241.

McDonnell, A. et al., 2010. Developing tomorrow's leaders—Evidence of global talent management in multinational enterprises. *Journal of World Business*, 45(2), pp.150–160.

McDonnell, A., Collings, D.G. & Burgess, J., 2012. Guest editors' note: Talent management in the Asia Pacific. *Asia Pacific Journal of Human Resources*, 50(4), pp.391–398.

McNatt, D.B., 2000. Ancient Pygmalion joins contemporary management: A meta-analysis of the result. *Journal of Applied Psychology*, 85(2), pp.314–322.

Mellahi, K. & Collings, D.G., 2010. The barriers to effective global talent management: The example of corporate élites in MNEs. *Journal of World Business*, 45(2), pp.143–149.

Messersmith, J.G. & Guthrie, J.P., 2010. High performance work systems in emergent organization: implications for firm performance. *Human Resource Management*, 49(2), pp.241–264.

Meyers, M.C. & van Woerkom, M., 2013. The influence of underlying philosophies on talent management: Theory, implications for practice, and research agenda. *Journal of World Business*.

Meyers, M.C., van Woerkom, M. & Dries, N., 2013. Talent — Innate or acquired? Theoretical considerations and their implications for talent management. *Human Resource Management Review*, 23(4), pp.305–321.

Mihalache, O. et al., 2012. Offshoring and Firm Innovation: The Moderating Role of Top Management Team Attributes. *Strategic Management Journal*, 33(June 2006), pp.1480–1498.

Miller, D., 1991. Stale in the Saddle: CEO Tenure and the Match Between Organization and Environment. *Management Science*, 37(1), pp.34–52.

Miller, D. & Shamsie, J., 2001. Learning across the life cycle: Experimentation and performance among the Hollywood studio heads. *Strategic Management Journal*, 22(8), pp.725–745.

Miller, D. & Shamsie, J., 1996. The Resource-Based View of the Firm in Two Environments: The Hollywood Film Studios from 1936 to 1965. *Academy of Management Journal*, 39(3), pp.519–543.

Minbaeva, D.B., 2013. Strategic HRM in building micro-foundations of organizational knowledge-based performance. *Human Resource Management Review*, 23(4), pp.378–390.

Mingers, J., 2008. Management knowledge and knowledge management: realism and forms of truth. *Knowledge Management Research & Practice*, 6(1), pp.62–76.

Molloy, J.C. & Barney, J.B., 2015. Who Captures the Value Created with Human Capital? A Market-based View. *Academy of Management Perspectives*, 29(3), pp.309–325.

Morris, S.S. et al., 2016. Firm-specific human capital investments as a signal of general value: Revisiting assumptions about human capital and how it is managed. *Strategic Management Journal*.

Myeong, S. et al., 2015. *A Motivational Process for Talent: Synthesizing the Theories of Core Self-Evaluation and Purposeful Work Behavior*, Valencia.

Nason, R.S. & Wiklund, J., 2015. An Assessment of Resource-Based Theorizing on Firm Growth and Suggestions for the Future. *Journal of Management*, pp.1–29.

Netessine, S. & Yakubovich, V., 2012. The Darwinian workplace. *Harvard business review*, 90(5), pp.25-28.

Newbert, S.L., 2007. Empirical Research on the Resource-based View of the Firm: An Assessment and Suggestion for future Research. *Strategic management journal*, 28, pp.121–146.

Nieto, M.J. & Santamaria, L., 2007. The importance of diverse collaborative networks for the novelty of product innovation. *Technovation*, 27(6–7), pp.367–377.

Nijs, S. et al., 2014. A multidisciplinary review into the definition, operationalization, and measurement of talent. *Journal of World Business*, (49), pp.180–191.

Nonaka, I., 1991. The knowledge-creating company. *Harvard business review*, November-, pp.960–104.

Nonaka, I. & Takeuchi, H., 1995. *The knowledge-creating company: How Japanese companies create the dynamics of innovation*,

Nonaka, I., Toyama, R. & Konno, N., 2000. SECI, Ba and Leadership: a Unified Model of

Dynamic Knowledge Creation. *Long Range Planning*, 33(1), pp.5–34.

Nwokocha & Eboh, 2014. Talent Management: A strategic approach to effective human resource management and sustainable organisational performance. In *British Academy of Management Conference Proceedings*.

Nyberg, A.J. & Wright, P.M., 2015. 50 years of human capital research: assessing what we know, exploring where we go. *Academy of Management Perspectives*, 29(3), pp.287–295.

Ocasio, W., 2011. Attention to Attention. *Organization Science*, 22(5), pp.1286–1296.

Ocasio, W., 1997. Towards an Attention-based View of the Firm. *Strategic Management Journal*, 18(Summer Special Issue), pp.187–206.

O'dell, C. and Grayson, C.J., 1998. If only we knew what we know: Identification and transfer of internal best practices. *California management review*, *40*(3), pp.154-174.

Olian, J.D. & Rynes, S.L., 1984. Organizational Staffing: Integrating Practice with Strategy. *Industrial Relations*, 23(2), p.170.

Park, C., Vertinsky, I. & Becerra, M., 2013. Transfers of explicit vs. tacit knowledge and performance in international joint ventures: The impact of age. *International Business Review*, 24(1), pp.89–101.

Peng, M., 2001. The resource-based view and international business. *Journal of Management*, 27(6), pp.803–829.

Penrose, E., 1995. Limits to the Growth and Size of Firms. In *American Economic Association*. American Economic Association, pp. 531–543.

Penrose, E.T., 1959. The theory of the growth of the firm - Introduction. *Theory of the Growth of the Firm*, (May 2016), p.272.

Pepermans, R., Vloeberghs, D. & Perkisas, B., 2003. High potential identification policies: an empirical study among Belgian companies. *Journal of Management Development*, 22(8), pp.660–678.

Perez, J.R. & Pablos, P.O. de, 2003. Knowledge management and organizational competitiveness: a framework for human capital analysis. *Journal of Knowledge Management*, 7(3), pp.82–91.

Peteraf, M., 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic management journal*, 14(April 1992), pp.179–191.

Pfeffer, J., 2001. Fighting the war for talent is hazardous to your organization's health. *Organizational Dynamics*, 29(4), pp.248–259.

Pierce, J.R. & Aguinis, H., 2013. The Too-Much-of-a-Good-Thing Effect in Management. *Journal of Management*, 39(2), pp.313–338.

Ployhart, R., Weekley, J. & Ramsey, J., 2009. The consequences of human resource stocks and flows: A longitudinal examination of unit service orientation and unit effectiveness. *Academy of Management Journal*, 52(5), pp.996–1015.

Ployhart, R.E. et al., 2014. Human Capital Is Dead; Long Live Human Capital Resources! *Journal of Management*, 40(2), pp.371–398.

Ployhart, R.E. & Moliterno, T.P., 2011a. Emergence of the Human Capital Resource: A Mulitlevel Model. *Academy of Management Review*, 36(1), pp.127–150.

Ployhart, R.E. & Moliterno, T.P., 2011b. Emergence of the Human Capital Resource: A Mulitlevel Model. *Academy of Management Review*, 36(1), pp.127–150.

Podsakoff, P.M. et al., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of applied psychology*, 88(5), pp.879–903.

Podsakoff, P.M. & Organ, D.W., 1986. Self-Reports in Organizational Research: Problems and Prospects. *Journal of Management*, 12(4), pp.531–544.

Powell, M. et al., 2013. Has the British National Health Service (NHS) got talent? A process evaluation of the NHS talent management strategy? *Policy Studies*, 34(3), pp.291–309.

Preacher, K.J.K.J., Curran, P.J.P.J. & Bauer, D.J.J., 2006. Computational Tools for Probing Interactions in Multiple Linear Regression, Multilevel Modeling, and Latent Curve Analysis. *Journal of Educational and Behavioral Statistics*, 31(4), pp.437–448.

Preece, D., Iles, P. & Chuai, X., 2011. Talent management and management fashion in Chinese enterprises: exploring case studies in Beijing. *The International Journal of Human Resource Management*, 22(16), pp.3413–3428.

Preece, D., Iles, P. & Jones, R., 2013. MNE regional head offices and their affiliates: talent management practices and challenges in the Asia Pacific. *The International Journal of Human Resource Management*, 24(18), pp.3457–3477.

Priem, R. & Butler, J., 2001. Is the resource-based "view" a useful perspective for strategic management research? *Academy of management review*, 26(1), pp.22–40.

Prowse, P. & Prowse, J., 2010. Whatever happened to human resource management

performance? *International Journal of Productivity and Performance Management*, 59(2), pp.145–162.

Ragab, M. a. F. & Arisha, A., 2013. Knowledge management and measurement: a critical review. *Journal of Knowledge Management*, 17(6), pp.873–901.

Ray, G., Barney, J.B. & Muhanna, W. a., 2004. Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal*, 25(1), pp.23–37.

Reich, B.H., Gemino, A. & Sauer, C., 2014. How knowledge management impacts performance in projects: An empirical study. *International Journal of Project Management*, 32(4), pp.590–602.

Rich, B.L., Lepine, J. a & Crawford, E.R., 2010. Job Engagement: antecents and effects on job performance. *Academy of Management Journal*, 53(3), pp.617–635.

Ritala, P. & Hurmelinna-Laukkanen, P., 2013. Incremental and radical innovation in coopetition-the role of absorptive capacity and appropriability. *Journal of Product Innovation Management*, 30(1), pp.154–169.

Ross, S., 2013. How definitions of talent suppress talent management. *Industrial and Commercial Training*, 45(3), pp.166–170.

Roxas, B., Battisti, M. & Deakins, D., 2014. Learning, innovation and firm performance: knowledge management in small firms. *Knowledge Management Research & Practice*, 12(4), pp.443–453.

Rubin, D.B. & Schenker, N., 1987. Interval estimation from multiply-imputed data: A case

study using census agriculture industry codes. *Journal of Official Statistics*, 3(4), p.375–387.

Rubin, D.B. & Schenker, N., 1986. Multiple Imputation for Interval Estimation from Simple Random Samples with Ignorable Nonresponse. *Journal of the American Statistical Association*, 81(394), pp.366–374.

Said, A.A.S., 2015. Positioning organisational culture in knowledge management research. *Journal of Knowledge Management*, 19(2), pp.164–189.

Schuler, R.S., Jackson, S.E. & Tarique, I., 2011. Global talent management and global talent challenges: Strategic opportunities for IHRM. *Journal of World Business*, 46(4), pp.506–516.

Shaw, J., Park, T. & Kim, E., 2013. A resource-based perspective on human capital losses, HRM investments, and organizational performance. *Strategic Management Journal*, 34(5), pp.572–589.

Sheehan, M., 2012. Developing managerial talent: Exploring the link between management talent and perceived performance in multinational corporations (MNCs). *European Journal of Training and Development*, 36(1), pp.66–85.

Sheehan, M., 2013. Human resource management and performance: Evidence from small and medium-sized firms. *International Small Business Journal*, 32(5), pp.545–570.

Sirmon, D.G. et al., 2011. Resource Orchestration to Create Competitive Advantage: Breadth, Depth, and Life Cycle Effects. *Journal of Management*, 37(5), pp.1390–1412.

Sirmon, D.G., Gove, S. & Hitt, M.A., 2008. Resource management in dyadic competitive

rivalry: The effects of resource bundling and deployment. *Academy of Management Journal*, 51(5), pp.919–935.

Sirmon, D.G. & Hitt, M.A., 2009. Contingencies Within Dynamic Managerial Capabilities: Interdependent Effects of Resource Investment and Deployment on Firm Performance. *Strategci Management Journal*, 30, pp.1375–1394.

Sirmon, D.G. & Hitt, M.A., 2003. Managing resources- Linking unique resources, management and wealth creation in Family Firms. *Entrepreneurship: Theory and Practice*, pp.339–358.

Sirmon, D.G., Hitt, M.A. & Ireland, R.D., 2007. Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, 32(1), pp.273–292.

SME Corp. Malaysia, 2013. Guideline for New Sme Definition. , (October), pp.1–5.

SMECORP, 2015. *SME Annual Report 2014/2015*, Kuala Lumpur.

SMECORP, 2015. 1-InnoCERT Programme, accessed 1 January, 2015 <http://www.smecorp.gov.my/index.php/en/programmes/2015-12-21-09-57-03/1-innocert

SMECORP, 2012. *SME Masterplan 2012-2020: Chapter 1 The Need for a "Game Changer,"*

Sonnenberg, M., van Zijderveld, V. & Brinks, M., 2014. The role of talent-perception incongruence in effective talent management. *Journal of World Business*, 49(2), pp.272–280.

Sparrow, P.R. & Makram, H., 2015. What is the value of talent management? Building value-

driven processes within a talent management architecture. *Human Resource Management Review*, 25(3), pp.249–263.

Spiller, S. a et al., 2013. Spotlights, Floodlights, and the Magic Number Zero: Simple Effects Tests in Moderated Regression. *Journal of Marketing Research*, 50(2), pp.277–288.

Srivastava, R.K., Fahey, L. & Christensen, H.K., 2001. The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. *Journal of Management*, 27(6), pp.777–802.

Stahl, G. et al., 2012. Global Talent Management: How Leading Multinationals Build and Sustain Their Talent Pipeline. *Sloan Management Review*, 53(2), p.pp 25-42.

Stokes, P. et al., 2015. Managing talent across advanced and emerging economies: HR issues and challenges in a Sino-German strategic collaboration. *International Journal of Human Resource Management*, 27(20), pp.2310–2338.

Sturman, M.C., 2003. Searching for the inverted U-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management*, 29(5), pp.609–640.

Swaab, R.I. et al., 2014. The Too-Much-Talent Effect: Team Interdependence Determines When More Talent Is Too Much or Not Enough. *Psychological science*, 25(8), pp.1581–1591.

Takeuchi, R. et al., 2007. An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *The Journal of applied psychology*, 92(4), pp.1069–1083.

Tansley, C., 2011. What do we mean by the term "talent" in talent management? *Industrial and Commercial Training*, 43(5), pp.266–274.

Tarique, I. & Schuler, R.S., 2010. Global talent management: Literature review, integrative framework, and suggestions for further research. *Journal of World Business*, 45(2), pp.122–133.

Teece, D.J., 2000. Strategies for Managing Knowledge Assets: the Role of Firm Structure and Industrial Context. *Long Range Planning*, 33, pp.35–54.

Teece, D.J., Pisano, G. & Shuen, A., 1997. Dynamic Capabilities and Strategic Management. *Strategic management journal*, 18(7), pp.509–533.

Thunnissen, M., Boselie, P. & Fruytier, B., 2013. A review of talent management:'infancy or adolescence?'. *The International Journal of Human Resource Management*, 24(9), pp.1744–1761.

Thunnissen, M., Boselie, P. & Fruytier, B., 2013. Talent management and the relevance of context: Towards a pluralistic approach. *Human Resource Management Review*, 23(4), pp.326–336.

Tukey, J.W., 1977. Exploratory Data Analysis. In *Analysis*. p. 688.

Uotila, J. et al., 2009. Exploration, exploitation, and financial performance: analysis of S&P 500 corporations. *Strategic Management Journal*, 30(2), pp.221–231.

Vaiman, V. & Vance, C., 2010. *Smart talent management: Building knowledge assets for competitive advantage*, Edward Elgar Publishing.

Valverde, M., Scullion, H. & Ryan, G., 2013. Talent management in Spanish medium-sized

organisations. *The International Journal of Human Resource Management*, 24(9), pp.1832–1852.

Vance, C. & Vaiman, V., 2008. *Smart talent management: on the powerful amalgamation of talent management and knowledge management*, Edward Elgar Publishing, Aldershot.

Villar, C., Alegre, J. & Pla-Barber, J., 2014. Exploring the role of knowledge management practices on exports: A dynamic capabilities view. *International Business Review*, 23(1), pp.38–44.

Wadhwa, A. & Hall, M., 2006. Knowledge Creation through External Venturing : Evidence from the Telecommunication Equipment Manufacturing Industry. *Academy of Management Journal*, 49(August), pp.819–835.

Wai-kwong, F.Y. et al., 2001. The performance effects of human resource managers' and other middle managers' involvement in strategy making under different business-level strategies: the case of hong kong. *Industrial Relations*, pp.187–206.

Wall, T.D. et al., 2004. On the Validity of Subjective Measures of Company Performance. *Personnel Psychology*, 57(1), pp.95–118.

Wall, T.D. & Wood, S.J., 2005. *The romance of human resource management and business performance, and the case for big science*, London: SAGE Publications.

Walter, A., Auer, M. & Ritter, T., 2006. The impact of network capabilities and entrepreneurial orientation on university spin-off performance. *Journal of Business Venturing*, 21(4), pp.541–567.

Wang, C. & Han, Y., 2011. Linking properties of knowledge with innovation performance: the

moderate role of absorptive capacity. *Journal of Knowledge Management*, 15, pp.802–819.

Weber, R., 2004. The rhetoric of positivism versus interpretivism: A personal view. *MIS Quarterly*, 28(1).

Wee, J.C.N. & Chua, A.Y.K., 2013. The peculiarities of knowledge management processes in SMEs: the case of Singapore. *Journal of Knowledge Management*, 17(6), pp.958–972.

Wegner, D.M., 1987. Transactive Memory: A Contemporary Analysis of the Group Mind. In *Theories of Group Behavior*. New York: Springer-Verlag, pp. 185–208.

Wei, C.C., Choy, C.S. & Chew, G.G., 2011. The KM processes in Malaysian SMEs: An empirical validation. *Knowledge Management Research and Practice*, 9(2), pp.185–196.

Wernerfelt, B., 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2), pp.171–180.

Whelan, E. & Carcary, M., 2011. Integrating talent and knowledge management: where are the benefits? *Journal of Knowledge Management*, 15(4), pp.675–687.

Whelan, E., Collings, D.G. & Donnellan, B., 2010. Managing talent in knowledge-intensive settings. *Journal of Knowledge Management*, 14(3), pp.486–504.

Wiklund, J. & Shepherd, D., 2003. Research Notes and Commentaries Knowledge-Based Resources , Entrepreneurial Orientation , and the Performance of Small and Medium-Sized Businesses. *Strategic Management Journal*, 24(May 2002), pp.1307–1314.

Wright, P. & McMahan, G., 1992. Theoretical perspectives for strategic human resource management. *Journal of management*, 18(2), pp.295–320.

Wright, P. & Snell, S., 1998. Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of management review*, 23(4), pp.756–772.

Wright, P.M. et al., 2005. The Relationship Between HR Practices and Firm Performance: Examining Causal Order. *Personnel Psychology*, 58(2), pp.409–446.

Wright, P.M., Coff, R. & Moliterno, T.P., 2013. Strategic Human Capital: Crossing the Great Divide. *Journal of Management*, 40(February), pp.353–370.

Wright, P.M., Dunford, B.B. & Snell, S.A., 2001. Human resources and the resource based view of the firm. *Journal of Management*, 27(6), pp.701–721.

Wright, P.M., Gardner, T.M. & Moynihan, L.M., 2003. The impact of HR practices on the performance of business units. *Human Resource Management Journal*, 13(3), pp.21–36.

Wright, P.M., Mcmahan, G.C. & Mcwilttams, A., 1994. Human resources and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management*, 5:2(May).

Wright, P.M., Smart, D.L. & McMahan, G.C., 1995. Matches between human resources and strategy among NCAA basketball teams. *Academy of Management Journal*, 38(4), pp.1052–1074.

Wuchty, S., Jones, B.F. & Uzzi, B., 2007. The increasing dominance of teams in production of knowledge. *Science (New York, N.Y.)*, 316(5827), pp.1036–9.

Yahya, S. & Goh, W.-K., 2002. Managing human resources toward achieving knowledge management. *Journal of Knowledge Management*, 6(5), pp.457–468.

Yuan, Y., 2010. Multiple imputation for missing data: Concepts and new development. *SAS Institute Inc, Rockville, MD*, pp.1–13.

Zack, M., McKeen, J. & Singh, S., 2009. Knowledge management and organizational performance: an exploratory analysis. *Journal of Knowledge Management*, 13(6), pp.392–409.

Zhang, S. & Bright, D., 2012. Talent definition and talent management recognition in Chinese private-owned enterprises. *Journal of Chinese Entrepreneurship*, 4(2), pp.143–163.

Zheng, C., Soosay, C. & Hyland, P., 2008. Manufacturing to Asia: who will win the emerging battle for talent between Dragons and Tigers? *Journal of Manufacturing Technology Management*, 19(1), pp.52–72.

APPENDICES

Appendix 1 – Survey questionnaires used in this Phd research

Talent Management Practices

This question focuses on strategic importance of **human resource** in your company. Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Our company's HR practices provide us with an advantage over our competitors.	○	○	○	○	○	○	○
Our HR practices enable our firm to perform better than our competitors.	○	○	○	○	○	○	○
Our company's HR practices are critical to the success of our company.	○	○	○	○	○	○	○

Please rate your company's **talent management practices**, relative to the industry practices.

	substantially below industry practices	below industry practices	about the same as the industry practices	above industry practices	substantially above industry practices
Identification and assessment of talent positions in the company.	○	○	○	○	○
Selection and recruitment of talented staff.	○	○	○	○	○
In-house programmes for developing and nurturing talented employees for the company.	○	○	○	○	○
Provision of financial performance incentives to reward talented staff.	○	○	○	○	○
Company's budget allocated specifically to talent management as % of total budget.	○	○	○	○	○
Company's overall talent management effectiveness.	○	○	○	○	○

Knowledge Management

This question focuses on **knowledge management strategies** in your company.
Please indicate your agreement with the following statements.

Technology-centered knowledge management strategy

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My company often converts corporate culture or shared values into documented materials.	○	○	○	○	○
My company often converts employee knowledge or expertise into documented materials.	○	○	○	○	○

| My company often enhances productivity (product/service quality and quantity) by renewing equipment. | ○ | ○ | ○ | ○ | ○ |
| My company encourages patent applications so that employee knowledge or expertise all over the country can be converted into company-owned assets. | ○ | ○ | ○ | ○ | ○ |

This question focuses on **knowledge management strategies** in your company.
Please indicate your agreement with the following statements.

People centered knowledge management strategy

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
In my company, most of the knowledge is embedded in employees all over Malaysia.	○	○	○	○	○
In my company, knowledge is often shared through personnel interactions, such as mentoring or rotations.	○	○	○	○	○
My company often acquires knowledge through strategic alliances, technology cooperation, mergers, acquisitions, or technology licensing.	○	○	○	○	○

This question is interested in the **transfer of knowledge** within your company.
This transfer can take place between individuals or departments.
Please indicate your agreement with the following statements.

Speed of knowledge transfer

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information is *accessed* very fast *within* the departments.	○	○	○	○	○
Knowledge/Information is *accessed* very fast *with other* departments.	○	○	○	○	○
Knowledge/Information is *exchanged* very fast *within* the departments.	○	○	○	○	○
Knowledge/Information is *exchanged* very fast *with other* departments.	○	○	○	○	○

Please indicate your agreement with the following statements.

Reliability of knowledge transfer

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information that is *transferred* is generally very *reliable*.	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information that is *transferred* is generally very *up-to-date*.	○	○	○	○	○
Decisions can be made confidently using the available knowledge/information.	○	○	○	○	○

Please indicate your agreement with the following statements.

Accuracy of knowledge transfer

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information can be *transferred* to the respective employee *within* the department, without difficulties.	○	○	○	○	○
Knowledge/Information can be *transferred* to the respective employee in *other* departments, without difficulties.	○	○	○	○	○

This question is related to the **knowledge** assets within your company.
Knowledge assets refer to any intangible asset gained through experience and learning, which can be used to increase performance.
Please indicate your agreement with the following statements.

Explicit knowledge

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information that is created and stored as *paper documentation* can be easily accessed, shared and transferred.	○	○	○	○	○
Knowledge/Information that is created and stored as *electronic documents* can be easily accessed, shared and transferred.	○	○	○	○	○

This question is related to the **knowledge** assets within your company.
Please indicate your agreement with the following statements.

Tacit knowledge

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Knowledge/Information from individuals can be shared and transferred through *formal* discussions/meetings, without difficulties.	○	○	○	○	○
Knowledge/Information from individuals can be shared and transferred through *informal* discussions, without difficulties	○	○	○	○	○

Knowledge assets also include four sub-constructs: human, relational, structural, and information capital. Below are items related to **human capital**.

On a scale of 1 (strongly disagree) to 7 (strongly agree), indicate the degree of the following items:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My company is excellent in employees' intelligence.	○	○	○	○	○	○	○
My company is excellent in employees' talent.	○	○	○	○	○	○	○
My company is excellent in employees' experience.	○	○	○	○	○	○	○

Below are items related to **relational capital**.
Relational capital refers to knowledge of market channels and networks with external stakeholders, e.g., customers, suppliers, and competitors.
On a scale of 1 (strongly disagree) to 7 (strongly agree), indicate the degree of the following items:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My company possesses precise knowledge of target markets.	○	○	○	○	○	○	○
My company possesses precise knowledge of distribution channels.	○	○	○	○	○	○	○
My company possesses precise knowledge of competitor orientation.	○	○	○	○	○	○	○

Below are items related to **structural capital**.
Structural capital refers to organisational routines, organisational structure, management processes, company culture, collaborative mechanism and reward systems that can support employees in their quest for optimal intellectual performance.
On a scale of 1 (strongly disagree) to 7 (strongly agree), indicate the degree of the following items:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My company has a well-defined organisational structure that enables employees to coordinate.	○	○	○	○	○	○	○
My company has a supportive corporate culture that allows individuals to try things.	○	○	○	○	○	○	○
My company has efficient organisational routines and management processes.	○	○	○	○	○	○	○

Below are items related to **information capital**.
Information capital refers to the IT portfolio of infrastructure and applications that support company's processes, decision making and strategies.
On a scale of 1 (strongly disagree) to 7 (strongly agree), indicate the degree of the following items:

	Strongly		Somewhat	Neither Agree nor	Somewhat		Strongly

	Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
My company has highly available analytical application systems to promote analysis, interpretation and the sharing of knowledge and information.	○	○	○	○	○	○	○
My company has highly available decision support systems to support the decision making of top managers.	○	○	○	○	○	○	○
My company has highly available strategic information systems to help develop the prevailing business model of the enterprise.	○	○	○	○	○	○	○

Financial Performance

Financial performance

Please rate your company's performance over the past three years compared to the competitors in your industry/sector?

	Much Worse	Worse	About the Same	Better	Much Better
Growth of sales	○	○	○	○	○
Profit margin on sales	○	○	○	○	○
Return on investment	○	○	○	○	○

Innovative Performance

This question is related to the **innovation performance** within your company.
Please state the performance of your company as compared with your competitors in the following items.

	Much Worse	Worse	Somewhat Worse	About the Same	Somewhat Better	Better	Much Better
Replacement of products being phased out.	○	○	○	○	○	○	○
Extension of product range within main product field through technologically new products.	○	○	○	○	○	○	○
Extension of product range within main product field through technologically improved products.	○	○	○	○	○	○	○
Extension of product range outside main product field.	○	○	○	○	○	○	○
Development of environment-friendly products.	○	○	○	○	○	○	○
Market share evolution.	○	○	○	○	○	○	○
Opening of new markets abroad.	○	○	○	○	○	○	○
Opening of new domestic target groups.	○	○	○	○	○	○	○

This question is related to the **innovative performance** within your company.
Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We have launched products that are the first of their kind in the world.	○	○	○	○	○
We often introduce new ranges of products or services not previously offered by this company.	○	○	○	○	○
We often add new products or services to our existing ranges.	○	○	○	○	○
We often improve or revise existing products or services.	○	○	○	○	○
We often change our products or services in order to reduce costs.	○	○	○	○	○
We often reposition existing products or services.	○	○	○	○	○

This question is related to **innovative capabilities** within your company.
The statements below are related to **product and service innovation.**
Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The speed of R&D of our company is faster than our competitors.	○	○	○	○	○
The speed of production improvement is faster than our competitors.	○	○	○	○	○
The speed of innovating a new logistic method is faster than our competitors.	○	○	○	○	○
R&D has improved production innovation skills.	○	○	○	○	○
Compared to our competitors, the production in our company is more customised to the customers.	○	○	○	○	○
Compared to our competitors, the production in our company offers more innovative products to the customers.	○	○	○	○	○

This question is related to **innovative capabilities** within your company.
The statements below are related to **process and technical innovation.**
Please indicate your agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The company has continuously used innovative technology to improve the quality and speed of production and services to our customers.	○	○	○	○	○

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The latest human resource practices have been adopted in this organisation.

The innovations and customer satisfaction rates are higher than our competitors.

During the last three years, our patent registration has increased significantly.

Demographic Information

What is your designation?
- ○ CEO/ Managing Director
- ○ Senior Management
- ○ Other (Please state inside the box)

How many years has your company been established?

How many employees work in your company?

How much was the sales turnover of your company in the past year?
(All information collected in this questionnaire will be treated with the highest degree of confidentiality and will not be shared with any party, except in the form of aggregated data and for the purpose of statistical data, only.)

Please indicate the percentage number on the employees' level of education in your company.

Percentage %

	0	10	20	30	40	50	60	70	80	90	100
PhD											
Master's degree											
Bachelor's degree											
Diploma											
SPM / Vocational certificate											

Please indicate the percentage number of the employees' background in your company.

Percentage %

	0	10	20	30	40	50	60	70	80	90	100
Official/professional											
Skilled/technical											
Clerical											
Semi-professional/services											

Please indicate the percentage number of employees in the listed departments below.

	0	10	20	30	40	50	60	70	80	90	100
Sales and Marketing											
Human Resource											
Administration											
Finance											
Information Management											
Operation and Manufacturing											

What is the sector or industry of your business?
- ○ Agriculture, Forestry, Fishing
- ○ Mining
- ○ Construction
- ○ Manufacturing
- ○ Transportation and Public Utilities
- ○ Wholesale Trade
- ○ Retail Trade
- ○ Finance, Insurance, Real Estate
- ○ Services
- ○

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○ Public Administration

○ Other (Please state inside the box)

[   ]

Do you want to receive a summary of the survey result by email?

○ Yes, (Please provide your email address):

[   ]

○ No

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Appendix 2 – Key Research in Talent Management and Knowledge Management

Key research in talent management

No	Articles	Methodology	Key findings
1	(Lepak & Snell 1999)	Conceptual paper	1. Using the value and uniqueness of human capital as the core foundation of human resource architecture model, the focus is on development of pivotal talent in organisational enhance the value of human capital of the organisation. 2. Value has a direct impact on organisational performance; they define value as the strategic benefits to customers derived from skills relative to costs incurred. However, expenses from training, staffing, compensation, benefits may diminish the gain from internalisation of human capital.
2	(Sparrow & Makram 2015)	Conceptual paper	1. This article explains the "value" aspect of TM from RBV theory perspective. 2. TM literature relied on human capital resources, which emphasised on the value that resides in the unique set of knowledge, capabilities, contributions, commitment, skills, competencies and abilities possessed by an organisation's talent. 3. Valuable, rare, imitable and non-substitutable talented employees enable an organisation to implement value creating strategies and achieve a sustained competitive advantage.
3	(Wright et al. 2005)	Empirical paper: quantitative	1. Conclude that literature on HR performance relationship has universally reported a significant relationship between HR and performance. However, the methodological rigour necessary to suggest causality has always been neglected. 2. Tested a basic causal HRM – performance model.
4	(Groysberg et al. 2011)	Empirical paper: quantitative	1. Result: significant effect on talent and performance curvilinear relationship. 2. The findings of this study support the argument that groups/teams/organisations benefited up to a point from having highly talented employees; with higher proportions of individual stars, the marginal benefited decreased before the slope of the curvilinear pattern become negative.
5	(Laursen & Salter 2005)	Empirical paper: Quantitative	Logical arguments on curvilinear relationship between TM- and KM on innovation performance: 1. Talented employees may have too many ideas for the organisation to manage and choose between (the absorptive capacity problems).

			2. Many innovative ideas may come at the wrong time and at the wrong place to be fully exploited (the timing problem). 3. Given too many ideas, few of these ideas are taken seriously given the required level of attention or effort to bring them into implementation (attention allocation problem).
6	(Sonnenberg et al. 2014)	Empirical paper: Quantitative	The findings of this study highlight the different effects of talent – performance relationship when organisations implement inclusive and exclusive TM approach. Negative effects on performance associated with exclusive TM practices.
7	(Greer et al. 2015)	Empirical paper: Quantitative	1. The findings of this study emphasise the ideal setting in testing "attention-based view" theory. 2. They have found marginal support on a positive interaction effect of perceived strategic importance of HR on staffing and perceived firm performance relationship.
8	(Levy 2005)	Empirical paper: Quantitative	This study found that wrong allocation of attention by top management negatively influences the performance of global strategic posture.
9	(Joyce & Slocum 2012)	Empirical paper: Qualitative	Findings: 1. This study empirically explores how strategic capabilities and talent practices interact to determine performance by looking at the four companies' crucial turning points in their financial histories. The turning points represent a critical inflection points that initiate a transition to higher or lower levels of financial performance. 2. TM practices implementation must be aligned with organisational strategic capabilities.
10	(Shaw et al. 2013)	Empirical paper: Quantitative	Findings: 1. This study combines RBT and Price's (1977) model to support the relationship between human capital losses and organisational performance. 2. Note that previous studies have reported a negative linear relationship between human capital losses and performance relationship but they failed to report tests for curvilinearity. 3. RBT arguments can be used to explain HRM investment role (like TM) in elevating employees' value and rareness and making human capital losses more damaging.

Key research in knowledge management

No	Articles	Methodology	Key findings
1	(Ho et al. 2016)	Empirical paper: quantitative	Findings: 1. The finding of this study supports the result of the PhD research results as they have found non-significant results for manufacturing competitive capabilities and financial performance in Malaysian manufacturing industry. 2. The typical response rate for studies on SMEs in Malaysia is around 10%.
2	(Chong 2006)	Empirical paper: Quantitative	Findings: 1. They propose some mechanisms that enhance the KM strategy and performance relationship: teamwork, employee empowerment, top management commitment towards KM, and removal of organisational constrain. 2. There is a risk associated with KM investment in the context of Malaysia as they do not necessarily lead to expected benefits due to failures of KM adoption.
3	(Durst & Edvardsson 2012)	Conceptual paper: literature review	Findings: 1. Summarised KM in SMEs literature from 2001 – 2011 through ProQuest. 2. Many SMEs have no systematic KM implementation and more informal in nature. 3. Senior management in SMEs tend to prevent the outflow of knowledge from the company and thereby block knowledge sharing among companies in the same industry. 4. Suggest for a balance between external search and internal knowledge creation for better organisational performance.
4	(Hosseini 2014)	Empirical paper: quantitative	Findings: 1. This empirical paper examine Malaysian SMEs' innovation capability, which suggest competition as a key driver of innovation in the context of SMEs. 2. They have concluded that Malaysian SMEs are at the beginning stage of innovation. More medium-sized enterprises are involved in innovation as compared to micro and small enterprises. 3. Medium-sized enterprises had a 13.3% higher probability of being highly innovative as compared to small and micro size enterprises.
5	(J. Wales et al. 2013)	Empirical paper: quantitative	Findings:

			1. This study utilised resource orchestration theory and theorise that 'capabilty' help smaller organsiations overcome their resource-related 'liabilities of smallness' for higher organisational performance. 2. Found non-linear relationship between absorptive capacity and financial performance in SMEs and this is due to diminishing returns.
6	(Chadee & Raman 2012)	Empirical paper: quantitative	Findings: 1. Confirms that both external knowledge and TM practices contribute positively to the performance. 2. TM mediates the effects of external knowledge on performance. 3. KM (i.e. external search of knowledge) and TM are two strategic human capital construct that can be associate with organisational performance.
7	(Roxas et al. 2014)	Empirical paper: quantitative	Findings: 1. They argue that engagement in learning activities by owner managers or senior management is one of the processes through which SMEs absorb external knowledge. 2. Knowledge absorption capability is one of the mechanism that enhance KM and innovation performance relationship. 3. Acquiring and retaining knowledge is costly and conclude that there will be short-term negative effects on performance, however generate positive innovation performance in the long-term.
8	(Dahlander et al. 2016)	Empirical paper: quantitative	Findings: 1. This paper explain one of the mechanism (i.e. external search) that positively enhance KM strategy and innovation performance relationship. 2. The result of this study suggest positive effects between external search and innovation outcomes is driven by employees who spend a large amount of time with external people. 3. The result of this study suggest that innovation does not only occur at organisational level but is the cumulative result of innovation search conducted by individuals. 4. This study also uses 'attention' as the moderating variable that can influence the relationship between external search and innovation performance.
9	(Jayasingam et al. 2012)	Empirical paper: quantitative	Findings:

			1. This study confirms the positive relationship between KM practices and organisational performance in Malaysia.
			2. The result of this study also indicate that organisation size significantly moderate the relationship between KM practice and process improvement.
			3. At low to moderate level of hiring practice, the positive effect upon process improvement was only evident in small organisations.
			4. The impact of knowledge acquisition upon strategic improvement was found to be greater in smaller organisations.
			5. Moderate level of recruitment practice is suffice to augment process improvement at a greater scale in small organisations.
10	(Zack et al. 2009)	Empirical paper: Quantitative	Findings: 1. The results found positive relationship between KM practices and overall performance but there is no significant direct relationship between KM practices and financial performance. 2. Emphasise the important of aligning KM practices with organisational strategy.

Appendix 3 - The Result of Conditional Moderation Analysis and Johnson-Neyman Technique

TABLE 1: THE INTERACTION EFFECTS ON TM PRACTICES AND FINANCIAL PERFORMANCE
CURVILINEAR RELATIONSHIP

```
************* PROCESS Procedure for SPSS Release 2.16.1 *****************

        Written by Andrew F. Hayes, Ph.D. www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3


**************************************************************************
Model = 1
    Y = FP
    X = TMPcs
    M = PSIc

Statistical Controls:
CONTROL= TMPc    AGRIc    CONSTc    MANUFc    TRANSPc   WTRADEc  RTRADEc
FINANCEc SERVICEc P_ADMINc
Sample size
      144
**************************************************************************
Outcome: FP

Model Summary
        R      R-sq      MSE       F      df1      df2        p
      .56       .32      .54     5.08    13.00   130.00      .00

Model
           coeff       se        t        p      LLCI      ULCI
constant    3.64      .42     8.60      .00      2.80      4.48
PSIc        -.17      .51     -.33      .74     -1.19       .84
TMPcs       -.10      .09    -1.16      .25      -.27       .07
int_1       -.42      .33    -1.29      .20     -1.08       .23
TMPc         .54      .14     3.80      .00       .26       .82
AGRIc       -.02      .31     -.07      .94      -.63       .58
CONSTc      -.51      .60     -.85      .40     -1.71       .68
MANUFc      -.48      .22    -2.15      .03      -.92      -.04
TRANSPc     -.93      .85    -1.10      .27     -2.61       .74
WTRADEc     -.66      .35    -1.87      .06     -1.36       .04
RTRADEc     -.21      .33     -.63      .53      -.85       .44
FINANCEc   -1.28    60.00     -.02      .98   -119.99    117.42
SERVICEc    -.44      .23    -1.91      .06      -.90       .02
P_ADMINc    -.64      .27    -2.32      .02     -1.18      -.09

Product terms key:

 int_1    TMPcs        X       PSIc


R-square increase due to interaction(s):
      R2-chng        F      df1      df2        p
int_1     .01     1.66     1.00   130.00      .20


**************************************************************************
Conditional effect of X on Y at values of the moderator(s):
     PSIc   Effect       se        t        p      LLCI      ULCI
     -.18     -.02      .13     -.19      .85      -.27       .23
      .00     -.10      .09    -1.16      .25      -.27       .07
```

```
         .18      -.18       .08     -2.22        .03      -.34       -.02
```

Values for quantitative moderators are the mean and plus/minus one SD from mean.
Values for dichotomous moderators are the two values of the moderator.
********************* JOHNSON-NEYMAN TECHNIQUE **************************

Moderator value(s) defining Johnson-Neyman significance region(s)
```
    Value   % below   % above
     .12     77.78     22.22
```

Conditional effect of X on Y at values of the moderator (M)

PSIc	Effect	se	t	p	LLCI	ULCI
-.38	.06	.18	.32	.75	-.30	.42
-.33	.04	.17	.24	.81	-.29	.37
-.29	.02	.16	.14	.89	-.29	.33
-.25	.00	.14	.03	.97	-.28	.29
-.21	-.01	.13	-.10	.92	-.28	.25
-.16	-.03	.12	-.26	.80	-.27	.21
-.12	-.05	.11	-.44	.66	-.27	.17
-.08	-.07	.10	-.66	.51	-.27	.13
-.04	-.08	.09	-.91	.37	-.27	.10
.00	-.10	.09	-1.19	.24	-.27	.07
.05	-.12	.08	-1.48	.14	-.28	.04
.09	-.14	.08	-1.77	.08	-.29	.02
.12	-.15	.08	-1.98	.05	-.31	.00
.13	-.16	.08	-2.01	.05	-.31	.00
.17	-.17	.08	-2.19	.03	-.33	-.02
.22	-.19	.08	-2.29	.02	-.36	-.03
.26	-.21	.09	-2.34	.02	-.39	-.03
.30	-.23	.10	-2.33	.02	-.42	-.03
.34	-.25	.11	-2.30	.02	-.46	-.03
.38	-.26	.12	-2.26	.03	-.50	-.03
.43	-.28	.13	-2.21	.03	-.53	-.03
.47	-.30	.14	-2.16	.03	-.57	-.03

****

Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/TMPcs PSIc FP.
BEGIN DATA.

     -.36      -.18      3.68
      .46      -.18      3.66
     1.29      -.18      3.64
     -.36       .00      3.68
      .46       .00      3.59
     1.29       .00      3.51
     -.36       .18      3.67
      .46       .18      3.53
     1.29       .18      3.38

END DATA.
GRAPH/SCATTERPLOT=TMPcs WITH FP BY PSIc.
```

* Estimates are based on setting covariates to their sample means.

******************** ANALYSIS NOTES AND WARNINGS ************************

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Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the
HC3 estimator

------ END MATRIX -----

TABLE 2: THE INTERACTION EFFECTS ON TM PRACTICES AND INNOVATION PERFORMANCE
CURVILINEAR RELATIONSHIP

************* PROCESS Procedure for SPSS Release 2.16.1 ******************

          Written by Andrew F. Hayes, Ph.D.   www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

****
Model = 1
    Y = IP
    X = TMPcs
    M = PSIc

Statistical Controls:
CONTROL= TMPc   AGRIc   CONSTc   MANUFc   TRANSPc   WTRADEc   RTRADEc
FINANCEc SERVICEc P_ADMINc

Sample size
      144
****
Outcome: IP

Model Summary
        R   R-sq   MSE   F   df1   df2   p
      .58   .34   .67   5.24   13.00   130.00   .00

Model
            coeff   se   t   p   LLCI   ULCI
constant   5.05   .56   8.98   .00   3.93   6.16
PSIc   .00   .65   .00   1.00   -1.29   1.29
TMPcs   -.13   .11   -1.18   .24   -.34   .09
int_1   -.50   .36   -1.40   .16   -1.22   .21
TMPc   .63   .16   4.03   .00   .32   .93
AGRIc   .87   .53   1.66   .10   -.17   1.92
CONSTc   -.29   .98   -.29   .77   -2.22   1.65
MANUFc   -.10   .37   -.27   .78   -.82   .62
TRANSPc   -.89   1.26   -.71   .48   -3.38   1.60
WTRADEc   -.25   .44   -.57   .57   -1.13   .63
RTRADEc   .24   .69   .35   .73   -1.12   1.61
FINANCEc   .87   80.00   .01   .99   -157.40   159.14
SERVICEc   -.07   .36   -.18   .86   -.79   .66
P_ADMINc   -.17   1.00   -.17   .86   -2.15   1.81

Product terms key:

 int_1   TMPcs   X   PSIc

R-square increase due to interaction(s):
      R2-chng   F   df1   df2   p
int_1   .01   1.96   1.00   130.00   .16

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```
****************************************************************************

Conditional effect of X on Y at values of the moderator(s):
     PSIc    Effect        se         t         p       LLCI      ULCI
     -.18     -.04        .14      -.25       .80      -.32       .24
      .00     -.13        .11     -1.18       .24      -.34       .09
      .18     -.22        .11     -2.01       .05      -.44       .00

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

******************** JOHNSON-NEYMAN TECHNIQUE *************************

Moderator value(s) defining Johnson-Neyman significance region(s)
     Value  % below  % above
       .17   79.86    20.14

Conditional effect of X on Y at values of the moderator (M)
     PSIc    Effect        se         t         p       LLCI      ULCI
     -.38      .06        .20       .32       .75      -.32       .45
     -.33      .04        .18       .22       .83      -.32       .40
     -.29      .02        .17       .11       .91      -.32       .36
     -.25      .00        .16      -.01       .99      -.32       .31
     -.21     -.02        .15      -.16       .87      -.31       .27
     -.16     -.04        .14      -.33       .74      -.32       .23
     -.12     -.07        .13      -.52       .61      -.32       .19
     -.08     -.09        .12      -.73       .47      -.32       .15
     -.04     -.11        .11      -.97       .34      -.33       .11
      .00     -.13        .11     -1.21       .23      -.34       .08
      .05     -.15        .10     -1.45       .15      -.36       .06
      .09     -.17        .10     -1.66       .10      -.38       .03
      .13     -.19        .11     -1.85       .07      -.40       .01
      .17     -.21        .11     -1.98       .05      -.43       .00
      .17     -.22        .11     -1.98       .05      -.43       .00
      .22     -.24        .11     -2.07       .04      -.46      -.01
      .26     -.26        .12     -2.13       .04      -.50      -.02
      .30     -.28        .13     -2.15       .03      -.54      -.02
      .34     -.30        .14     -2.15       .03      -.58      -.02
      .38     -.32        .15     -2.14       .03      -.62      -.02
      .43     -.34        .16     -2.13       .04      -.66      -.02
      .47     -.36        .17     -2.10       .04      -.71      -.02

****************************************************************************

Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/TMPcs PSIc IP.
BEGIN DATA.

     -.36     -.18      5.06
      .46     -.18      5.03
     1.29     -.18      5.00
     -.36      .00      5.09
      .46      .00      4.99
     1.29      .00      4.88
     -.36      .18      5.13
      .46      .18      4.94
```

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```
     1.29     .18     4.76
```

END DATA.
GRAPH/SCATTERPLOT=TMPcs WITH IP BY PSIc.

* Estimates are based on setting covariates to their sample means.

******************* ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the
HC3 estimator

------ END MATRIX -----

TABLE 3: THE INTERACTION EFFECTS ON KM STRATEGY AND FINANCIAL PERFORMANCE
CURVILINEAR RELATIONSHIP

************* PROCESS Procedure for SPSS Release 2.16.1 ******************

          Written by Andrew F. Hayes, Ph.D.   www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

****
Model = 1
    Y = FP
    X = KMScs
    M = PSIc

Statistical Controls:
CONTROL= KMSc   AGRIc   CONSTc   MANUFc   TRANSPc   WTRADEc   RTRADEc
FINANCEc SERVICEc P_ADMINc

Sample size
      144
****
Outcome: FP

Model Summary
        R   R-sq   MSE   F   df1   df2   p
       .51   .26   .59   3.86   13.00   130.00   .00

Model
           coeff   se   t   p   LLCI   ULCI
constant   3.59   .14   25.67   .00   3.31   3.87
PSIc   -.18   .44   -.41   .68   -1.06   .70
KMScs   .83   1.59   .52   .60   -2.33   3.98
int_1   -18.17   4.42   -4.12   .00   -26.91   -9.44
KMSc   .66   .40   1.64   .10   -.14   1.45
AGRIc   -.34   .40   -.85   .40   -1.13   .45
CONSTc   -.54   .69   -.79   .43   -1.90   .82
MANUFc   -.49   .32   -1.52   .13   -1.13   .15
TRANSPc   -.94   .74   -1.28   .20   -2.40   .51
WTRADEc   -.72   .46   -1.57   .12   -1.62   .19
RTRADEc   .02   .38   .06   .95   -.72   .77
FINANCEc   -2.49   16.01   -.16   .88   -34.17   29.18
SERVICEc   -.42   .32   -1.30   .20   -1.05   .22
P_ADMINc   -.97   .36   -2.65   .01   -1.69   -.24

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```
Product terms key:

 int_1    KMScs       X       PSIc


R-square increase due to interaction(s):
      R2-chng      F      df1      df2        p
int_1    .06    16.94    1.00    130.00      .00


****************************************************************************
Conditional effect of X on Y at values of the moderator(s):
     PSIc    Effect       se        t        p      LLCI      ULCI
     -.18     4.15      2.13     1.95      .05      -.06      8.37
      .00      .83      1.59      .52      .60     -2.32      3.99
      .18     -2.49     1.36     -1.84      .07     -5.17       .19


Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.


********************** JOHNSON-NEYMAN TECHNIQUE **************************

Moderator value(s) defining Johnson-Neyman significance region(s)
    Value  % below  % above
     -.19    10.42    89.58
      .19    86.11    13.89


Conditional effect of X on Y at values of the moderator (M)
     PSIc    Effect       se        t        p      LLCI      ULCI
     -.38     7.66      2.84     2.70      .01      2.04     13.29
     -.33     6.89      2.68     2.57      .01      1.59     12.20
     -.29     6.13      2.52     2.43      .02      1.14     11.11
     -.25     5.36      2.37     2.26      .03       .68     10.04
     -.21     4.59      2.22     2.07      .04       .21      8.97
     -.19     4.26      2.15     1.98      .05       .00      8.52
     -.16     3.82      2.07     1.85      .07      -.27      7.92
     -.12     3.05      1.93     1.58      .12      -.77      6.88
     -.08     2.29      1.81     1.27      .21     -1.29      5.86
     -.04     1.52      1.69      .90      .37     -1.82      4.86
      .00      .75      1.58      .47      .64     -2.38      3.89
      .05     -.02      1.50     -.01      .99     -2.98      2.94
      .09     -.78      1.43     -.55      .58     -3.61      2.04
      .13    -1.55      1.38     -1.12      .26     -4.28      1.18
      .17    -2.32      1.36     -1.71      .09     -5.01       .37
      .19    -2.68      1.36     -1.98      .05     -5.36       .00
      .22    -3.09      1.36     -2.27      .02     -5.78      -.40
      .26    -3.86      1.39     -2.78      .01     -6.60     -1.11
      .30    -4.62      1.44     -3.21      .00     -7.47     -1.77
      .34    -5.39      1.51     -3.56      .00     -8.39     -2.40
      .38    -6.16      1.61     -3.84      .00     -9.34     -2.98
      .43    -6.93      1.71     -4.05      .00    -10.32     -3.54
      .47    -7.70      1.83     -4.20      .00    -11.32     -4.07


****************************************************************************


Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/KMScs PSIc FP.
BEGIN DATA.
```

```
         -.02      -.18       3.56
          .04      -.18       3.80
          .10      -.18       4.05
         -.02       .00       3.58
          .04       .00       3.63
          .10       .00       3.68
         -.02       .18       3.60
          .04       .18       3.45
          .10       .18       3.30
```

END DATA.
GRAPH/SCATTERPLOT=KMScs WITH FP BY PSIc.

* Estimates are based on setting covariates to their sample means.

******************** ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the
HC3 estimator

------ END MATRIX -----

TABLE 4: THE INTERACTION EFFECTS ON KM STRATEGY AND INNOVATION PERFORMANCE
CURVILINEAR RELATIONSHIP

Run MATRIX procedure:

************* PROCESS Procedure for SPSS Release 2.16.1 *****************

          Written by Andrew F. Hayes, Ph.D.   www.afhayes.com
     Documentation available in Hayes (2013). www.guilford.com/p/hayes3

****
Model = 1
    Y = IP
    X = KMScs
    M = PSIc

Statistical Controls:
CONTROL= KMSc   AGRIc   CONSTc   MANUFc   TRANSPc   WTRADEc   RTRADEc
FINANCEc SERVICEc P_ADMINc

Sample size
       144

****
Outcome: IP

Model Summary
         R   R-sq   MSE   F   df1   df2   p
       .52   .27   .74   4.02   13.00   130.00   .00

Model
            coeff   se   t   p   LLCI   ULCI
constant   5.01   .11   45.73   .00   4.79   5.22
PSIc   -.21   .60   -.35   .72   -1.41   .98
```

```
KMScs          .08      1.53       .05       .96     -2.94      3.10
int_1       -15.59      5.57     -2.80       .01    -26.61     -4.57
KMSc          1.07       .48      2.25       .03       .13      2.01
AGRIc          .56       .58       .97       .33      -.58      1.70
CONSTc        -.27      1.00      -.27       .79     -2.25      1.72
MANUFc        -.04       .43      -.09       .93      -.88       .81
TRANSPc       -.89      1.09      -.81       .42     -3.05      1.27
WTRADEc       -.26       .46      -.55       .58     -1.17       .66
RTRADEc        .53       .70       .76       .45      -.86      1.92
FINANCEc      -.25      8.02      -.03       .98    -16.13     15.62
SERVICEc       .02       .42       .06       .95      -.81       .86
P_ADMINc      -.51       .65      -.79       .43     -1.79       .77


Product terms key:

 int_1    KMScs      X       PSIc


R-square increase due to interaction(s):
        R2-chng       F      df1      df2         p
int_1        .03     7.83     1.00   130.00       .01


*************************************************************************

Conditional effect of X on Y at values of the moderator(s):
     PSIc    Effect        se         t          p      LLCI      ULCI
     -.18      2.94      2.14      1.37        .17     -1.29      7.17
      .00       .09      1.53       .06        .95     -2.93      3.11
      .18     -2.76      1.47     -1.88        .06     -5.67       .15


Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

******************** JOHNSON-NEYMAN TECHNIQUE *************************

Moderator value(s) defining Johnson-Neyman significance region(s)
    Value  % below  % above
      .19    86.11    13.89

Conditional effect of X on Y at values of the moderator (M)
     PSIc    Effect        se         t          p      LLCI      ULCI
     -.38      5.95      3.03      1.96        .05      -.05     11.94
     -.33      5.29      2.82      1.87        .06      -.30     10.88
     -.29      4.63      2.62      1.76        .08      -.56      9.82
     -.25      3.97      2.43      1.63        .10      -.83      8.77
     -.21      3.31      2.24      1.48        .14     -1.12      7.74
     -.16      2.65      2.06      1.29        .20     -1.43      6.73
     -.12      1.99      1.90      1.05        .30     -1.76      5.75
     -.08      1.33      1.75       .76        .45     -2.12      4.79
     -.04       .68      1.62       .42        .68     -2.53      3.88
      .00       .02      1.52       .01        .99     -2.98      3.02
      .05      -.64      1.45      -.44        .66     -3.50      2.22
      .09     -1.30      1.41      -.92        .36     -4.09      1.49
      .13     -1.96      1.41     -1.39        .17     -4.76       .84
      .17     -2.62      1.46     -1.80        .07     -5.50       .26
      .19     -2.95      1.49     -1.98        .05     -5.90       .00
      .22     -3.28      1.53     -2.14        .03     -6.31      -.24
      .26     -3.94      1.64     -2.40        .02     -7.18      -.69
      .30     -4.59      1.77     -2.59        .01     -8.11     -1.08
      .34     -5.25      1.93     -2.73        .01     -9.07     -1.44
```

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```
   .38      -5.91      2.10      -2.82      .01      -10.06      -1.77
   .43      -6.57      2.28      -2.89      .00      -11.07      -2.07
   .47      -7.23      2.46      -2.93      .00      -12.11      -2.35
```

```
**************************************************************************
```

Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/KMScs PSIc IP.
BEGIN DATA.

     -.02      -.18      5.00
      .04      -.18      5.17
      .10      -.18      5.35
     -.02       .00      5.01
      .04       .00      5.01
      .10       .00      5.02
     -.02       .18      5.02
      .04       .18      4.85
      .10       .18      4.69

END DATA.
GRAPH/SCATTERPLOT=KMScs WITH IP BY PSIc.
```

* Estimates are based on setting covariates to their sample means.

```
********************* ANALYSIS NOTES AND WARNINGS *************************
```

Level of confidence for all confidence intervals in output:
     95.00

NOTE: All standard errors for continuous outcome models are based on the
HC3 estimator

```
------ END MATRIX -----
```

Appendix 4 – Comparison of Data Fit between Linear and Non-linear Model for all the Hypotheses

| | TALENT MANAGEMENT | | | | KNOWLEDGE MANAGEMENT | | | |
| | FP | | IP | | FP | | IP | |
Variables	linear	NL	linear	NL	linear	NL	Linear	NL
Control variables								
1-InnoCERT	.05	-.03	.36**	.12	-.00	-.03	.29*	.12
Age	-.01	-.2	-.00	-.19	-.02***	-.21	-.02*	-.19
Employees	.00	.15	.00	.14	.00	.15	.00	.14
Sales turnover	-.00	-.06	.00	.00	-.00	-.06	.00	.00
Agriculture industry	.12	-.14	.84*	.10	-.24	-.14	.46	.10
Construction industry	-.22	-.13	.11	-.03	-.41	-.13	-.09	-.03
Manufacturing industry	-.25	-.48	.09	-.04	-.33	-.18	.01	-.04
Transportation and Public Utilities Industry	-.64	-.18	-.65	-.12	-.91	-.18	-.94	-.12
Wholesale Trade Industry	-.26	-.22	.20	-.03	-.40	-.22	.06	-.03
Retain Trade Industry	.26	-.09	.64	.08	-.06	-.09	.37	.08
Finance, Industry and Real Estate Industry	-1.18	-.26	.76**	-.02	-1.17	-.26	.58	-.02
Services Industry	-.22	-.48	.12	-.04	-.34	-.14	.01	-.04
Public Administration Industry	-.39*	-.21	.11	-.06	-.74***	-.21	-.29	-.06
Main effects								
Talent Management Practices	.51****	.36***	.60****	.40****				
Talent Management Practices square		.01		-.06				
Knowledge Management Strategy					1.05****	.20**	1.33***	.24****
Knowledge Management Strategy square						.10	4.22*	.01
Moderating variable								
Perceived Strategic Importance of Human Resources	-.56	-.06	-.38	-.01	-.92**	-.06	-.84	-.05
Interaction Effects								
TM practices x PSI of HR	1.138**	.18*	.94*	.09				
TM practices square x PSI of HR		-.17		-.15				
KM strategy x PSI of HR					4.71***	.14	4.22*	.08
KM strategy square x PSI of HR						-.36**		-.28*
R^2	.34****	.35****	.36****	.38****	.28****	.31****	.30****	.32****
Change in R^2 for interaction	.04***	.03****	.02*	.26****	.05***	.24****	.033*	.20****

Notes: N=144, Standardised coefficients are reported. * $p < 0.1$,** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Appendix 5 – The Curvilinear Graphs and the Interaction Effect on the Curvilinear Graph

Figure 1: TM Practices and Financial Performance Curvilinear Relationship.

Figure 2: TM practices and Innovation Performance Curvilinear Relationship.

Figure 3: KM Strategy and Financial Performance Curvilinear Relationship

Figure 4: Knowledge Management Strategy and Innovation Performance Curvilinear

Figure 5: The Interaction Effect of Senior Management's Perceived Strategic Importance of HR on KM strategy and Financial Performance Relationship