

The development of an instrument
for enabling investors
to assess the quality of human
capital in medium sized enterprises

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ABSTRACT

According to the Chartered Institute of Management Accountants, intangible assets generate up to 80% of the value of businesses listed on a stock exchange ranging from multinationals in the Financial Times Stock Exchange (FTSE) to SMEs in the Alternative Investment Market (AIM).

Large enterprises are aware of the value of their intangibles, including human capital, use sophisticated approaches to evaluate them internally and describe them in annual reports. Some medium sized enterprises do use such approaches but they are time consuming and expensive to implement and maintain.

The aim of this study, therefore, was to develop an instrument for assessing the quality of human capital in medium sized enterprises which could be implemented quickly at relatively low cost. It was hypothesized that information on the quality of human capital made available by this instrument to 'relationship building' and 'buy and hold' Investors would influence their view on its value and so influence their levels of investment.

The literature review enabled the generation of a long-list of human capital issues used to create surveys which were completed by subject matter experts and investors. The surveys resulted in a short-list of items which were used to create a pilot instrument. The instrument was piloted using structured interviews in two commercial businesses, two not-for-profit businesses and a Business School. The

pilot was then developed into an assessment instrument which was completed by 211 senior executives from medium sized enterprises.

The resulting Human Capital Report (HCP) was found to demonstrate good internal consistency; test – retest and inter-rater reliability; content (face) validity; construct validity; concurrent and predictive validity.

Information generated by the senior executives was found not correlate with financial data used by investors but did correlate strongly with enterprise flexibility. As such it is argued that the HCA offers investors information additional to the 'financials' which they currently use to inform investment decisions. Some categories of investors agree: 97% of those completing the investor survey indicated that, assuming they could trust the information, they would vary their levels of investment by up to 50%.

The approach has been made available to interested parties in the form of two websites.

The first is aimed at mature SMEs wishing to demonstrate the quality of their workforce to funders / investors: www.HumanCapital.Report.

The second is aimed at rapidly growing SMEs wishing to introduce a more systematic approach to managing their workforce: www.ScaleupLeader.Guide

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- 2 ITEM DEVELOPMENT**

- 3a INVESTOR SURVEY**

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GLOSSARY

Book Value		The book value of an asset is its value on a company's balance sheet. This may be different to its market value. (Financial Times, 2017)
Business Combinations		Agglomeration of the assets of two or more firms for their consolidation as one entity under single ownership (Business Dictionary, 2017)
Capital		The money, property, and other valuables which collectively represent the wealth of an individual or business. (Investor Words, 2017)
Competence		The behaviours that individuals must have, or must acquire, to perform effectively at work. (Chartered Institute of Personnel and Development, 2017)
Customer Capital		Value of relationships that a firm builds with its customers, and which is reflected in their loyalty to the firm and/or its products.(Business Dictionary, 2017). A subset of External Relationships Capital.
Data		Facts or numbers, collected to be examined and considered and used to help decision-making, (Cambridge dictionary, 2017)
Determinism		Human activities are determined by the situation or 'environment' in which they are located. (Burrell and Morgan, 1979)
Due Diligence		An investigation or <u>audit</u> of a potential <u>investment</u> to confirm all facts, such as reviewing all financial records, plus anything else deemed material. (Investopedia, 2017)
Dynamic Capability		An organisation's ability to integrate, build and reconfigure internal and external competences to address changing environments' (Teece et al. 1997)
Experience		Number of years in which individuals have experience of carrying out a current or similar previous roles
External Relationship Capital		The relationships between an organisation and its external stakeholders are known collectively as relationship capital and they comprise a key intangible asset. (Chartered Institute of Management Accountants, 2006)
Human Capital	HC	The knowledge, skills, experiences and abilities that employees take with them when they leave and organisation. (European Commission Meritum Project, 2001). In this thesis: The combination of competence, commitment and adaptability that creates value to an organisation.
Human Resource Management	HRM	A coherent approach to the management of an organisation's people who individually and collectively contribute to the achievement of its objectives. (Armstrong, 2003)

Impetus		Forces within or external to a person that stimulates enthusiasm and causes a person to persist in the pursuit of a n organisation's objectives (Based on
Intangible Asset	IA	Non-monetary sources of probable future economic profits, lacking physical substance, influenced by a firm as a result of previous events and transactions and may or may not be sold separately from other corporate assets (Meritum 2003)
Intellectual Capital		Another term for Intangible Asset. Often used interchangeably
Internal Relationship Capital		The network of relationships which exists between an enterprise and its internal stakeholders. These include the Directors; Senior Managers; Middle and Junior Managers; Supervisors; Technical Specialists and other members of the workforce.
Mergers and Acquisitions	M&A	A merger occurs when two separate entities combine forces to create a new, joint organization in which both are equal partners. An acquisition refers to the purchase of one entity by another.(Investopedia, 2017) See also 'Business Combinations'
Organisation Capital		The culture, structure, organizational learning, and processes of an organisation which can generate a competitive advantage. (Martín-de-Castro et al, 2006)
Organisation Integration		The way an enterprise is structured and operated in order to influence employee contribution to achieving objectives. (Organizational structure, core business processes and supporting technology)
Organisation Routines		Continuously emerging organisational systems with internal structures and dynamics. The internal structure of a routine can produce a wide range of different outcomes on the continuum between 'very stable' and 'constantly changing', depending on circumstances. (Pentland and Feldman, 2005)
People Management		The decisions and actions made by line managers that directly affect or influence the behaviour of people in an organisation. (Based on Purcell et al 2009)
Population size	N	The number of subjects in a population
Price to Book Ratio		The price/book (p/b) ratio links the share price of a company with the book or accounting value. Sometimes called the market-to-book ratio. Financial Times Lexicon, 2017)
Relationship Capital		The relationships between an organisation and its stakeholders.
Resource		Something such as money, property, skill, labour etc that a company has available to achieve a goal. (Financial Times Lexicon, 2017)
Resource Based Strategy		The resources possessed by a firm are the primary

Resource Based View		Resources which may contribute to a sustainable competitive advantage of the firm. (Wernerfelt, 1984; Barney, 1991). See also VRIO.
Sample size	n	The number of subjects in a sample
Small to Medium Enterprises	SMEs	Small: Enterprises with a headcount of less than 50. Medium: Enterprises with a headcount of between 50 and 250. (Rhodes, 2016) In this thesis SME refers exclusively to medium sized enterprises
Social Capital		Networks together with shared norms, values and understandings that facilitate co-operation within or among groups (Organization for Economic Cooperation and Development, 2007).
Stakeholder		Any party that is committed, financially or otherwise, to a company and is therefore affected by its performance. This would normally include shareholders, employees, management, customers and suppliers. Their interests do not always coincide. (Financial Times Lexicon, 2017)
Strategic Human Resource Management	SHRM	An approach to managing human capital that supports long-term business goals and outcomes with a strategic framework (Chartered Institute of Personnel and Development, 2016).
Tangible Assets		Assets that have physical substance and are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes on a continuing basis. (Accounting Standards Board, 1999 p.13)
Total Quality Management	TQM	An approach to improving the competitiveness, effectiveness and flexibility of a whole organization. (Oakland, 2003, p.30)
Value		<i>Use value</i> refers to the specific quality of a new job, task, product, or service as perceived by users in relation to their needs. <i>Exchange value</i> , is the monetary amount realized at a certain point in time, when the exchange of the new task, good, service, or product takes place. (Lepak, Smith & Taylor, 2007 p.281)
Voluntarism		Human behaviour is completely autonomous and free-willed. (Burrell and Morgan, 1979)
VRIO / VRIN framework		Used to analyze an enterprise's internal resources and capabilities to assess if they can be a source of sustained competitive advantage: Valuable; Rare; Inimitable; Organised / Non-substitutable (Barney, 1991)
Workforce		All the people who work in a particular country, industry, organisation or location. (Based on the Financial Times Lexicon, 2017).

1. INTRODUCTION

This introductory Section defines the concept and value of ‘Intellectual Capital’ or ‘Intangible Assets’, placing Human Capital (HC) as a central component. The Section goes on to outline why the Researcher is interested in exploring the value of HC and why a validated HC assessment tool makes an important contribution to helping investors establish the value of medium sized enterprises.

1.1 DEFINING INTELLECTUAL CAPITAL

In the context of business, the concept ‘capital’ refers to an asset that produces future benefits such as rents, interest payments or cash flows. Two types of asset are found in the literature – tangible and intangible (Greco et al., 2013). Tangible Assets refer to the physical and financial resources of an organisation. Intangible Assets (IA) or ‘Intellectual Capital’ refers to resources that have no physical or financial presence (Lev, 2001).

1.1.1 THE INTERCHANGABILITY OF TERMINOLOGY

According to Marr (2005) the term ‘Intangible Assets’ (IA) is interchangeable with ‘Intellectual Capital’ (IC) and both IA and IC are used interchangeably in this thesis. Marr identifies a range of disciplinary ‘perspectives’ which describe the concept of ‘intangibles’ using differing terminology. Example perspectives include accounting, economics, finance, human resources, legal, marketing, reporting, and strategy. In addition he identifies ‘inter-disciplinary’ perspectives, for example inter-firm and knowledge based. It is clear, therefore, that the study of IA / IC has developed through different organisational lenses. The next section outlines the history of IA / IC.

1.1.2 THE HISTORY OF INTELLECTUAL CAPITAL

IA / IC has European roots going back as early as the 18th century. For example, at that time, it was observed that the Swedish shipping industry was lagging behind its competitors due to lack of professional knowledge. (Westerman, 1768, cited in Serenko and Bontis, 2013, p.476). In the 19th century Senior (1836, cited in Serenko and Bontis, 2013, p.476) mentioned IC as one of the key qualities of the labourer.

In the early 20th century other researchers referred to the importance of intangible assets (Schumpeter, 1912; 1934; Kronfeld and Rock, 1958) but it was Penrose (1959) who was one of the first contemporary researchers to acknowledge the relationship between an enterprise's employees and its effective use of resources. Soon after Penrose's publication, Machlup (1962) introduced knowledge as a key element of an enterprise's resources and described it in terms of stocks of knowledge, flows of knowledge, and the knowledge worker. These ideas anticipated the development of the knowledge economy (Drucker, 1969, 1993), resource-based strategy (Wernerfelt, 1984) and knowledge-based strategy (Grant, 2002).

1.1.3 THE RESEARCH INTO INTELLECTUAL CAPITAL

Guthrie et al (2017) visualize the more recent development of research into IC in terms of 5 stages: awareness; management and reporting; performance analysis; strong eco – systems and research with no boundaries. These stages are outlined below.

1.1.3.1 Awareness of Intellectual Capital

Their first stage is visualized as establishing an agreed framework of Intellectual Capital. This has encompassed debates on what to include within the construct. The Organisation for Economic Co-operation and Development (1993) proposed two components, these being Organisational (Structural) and Human Capital. These components subsequently were refined by later researchers into external Human (Customer) Capital; internal Human (Workforce) Capital and Organizational (Structural) Capital (e.g. Sveiby, 1997; Roos et al., 1997).

There are similarities and differences to be found in the various attempts to define the construct. Most acknowledge the three basic components but the influence of HC is visualized differently. For example Sveiby (1997) sees HC as the key component that generates profit in an enterprise. Kaplan and Norton (1992) disagree, with HC being integrated with Information Capital and Organizational Capital in their 'Learning and Growth' perspective. This combination acts as a basis for the development of an 'internal perspective' (business processes) and 'customer perspective'. This stage concluded that it is the combination of all three perspectives which generates long term shareholder value.

1.1.3.2 Management and reporting of Intellectual Capital

The second stage involved taking the IC construct and searching for ways of formally reporting its characteristics. It investigated the impact of IC on value creation and financial performance. This stream of activity was led by Scandinavian enterprises such as the Swedish insurance company, Skandia and the Danish company Ramboll. Both included elements of their intellectual capital as part of their 1994

annual reports. In the same year, Dow Chemical Company in the USA prepared and published a conceptual framework aimed at linking the contribution of intellectual capital to the value of the company.

It was during this stage that the Meritum Project (2002) and InCas Project (2007) were established. The Meritum Project was funded by the European Union, its role being to help enterprises identify and measure their intangible assets. The InCas Project aims to develop understanding about the value of Intellectual Capital within SMEs and to the financial community at large.

According to Guthrie et al. (2012, p.70) these two stages resulted in a generally accepted range of IC components. These were Human Capital, defined as 'the knowledge embedded in people'; Structural Capital: 'the knowledge embedded in the organisation and its systems' and Relational Capital: 'the knowledge embedded in customers and other relationships external to the organisation'.

1.1.3.3 Performance analysis – Intellectual Capital in practice

This third stage focuses on how IC has worked in practice. Here the value of IC is not only monetary but also includes how it impacts on the achievement of enterprise goals, for example innovating and delivering products and services to customers. As such this stage sees the use of IC in an enterprise as a transformational and powerful management tool.

Here Guthrie et al (op cit) found 3 themes. These were (1) the common use of the balanced scorecard; (2) inclusions of IC in annual reports and stand – alone reports. They also found (3) reference to IC in Initial Public Offerings and information made

available to the stock exchange. It is noteworthy that, of the documents reviewed few (circa 10%) specifically covered the 'financial impacts of IC on markets and profits' (op cit, p.74). As such the Researcher argues that it was the impact of IC on organisational activities that was seen to generate value.

1.1.3.4 The impact of Intellectual Capital on eco systems

Stage 4 starts to look outside of any given enterprise for the impact that IC has on society at large. As with stage 3 it sees 'value' as more than just monetary, transcending wealth creation. The management of IC is seen as a way of 'benefitting the ecosystem of society and the environment' (Guthrie et al, 2017, p. 34)

1.1.3.5 Intellectual Capital research with no boundaries

This stage suggests that the typical components of IC – Relationship, Organizational and Human Capital – may act as constraints to thinking. The traditional question, using these three components would be 'what is IC worth to investors, customers, the society and environment?'. In stage 5 the question would be 'is managing IC a worthwhile endeavour'? (op cit p.34). This stage 5 expands the concept of value creation in enterprises to that of identifying what IC can do to benefit society as a whole.

It is the stage 3 aspects of IC research on which this thesis concentrates. The next section outlines the concept of IC that is used within the context of this study.

1.1.4 INTELLECTUAL CAPITAL IN THE CONTEXT OF THIS THESIS

Despite the range of discipline-based lenses and multiple research threads it is possible to identify underlying themes which have been regularly described irrespective of the lens or research thread.

The first theme relates to knowledge (Edvinsson and Sullivan, 1996), intellectual material (Stewart, 1997) or innovation (Lev, 2001) that can be converted into value and protected.

Secondly there is the combination of capability / competence (Edvinsson and Malone, 1997; Sveiby, 1997; Bontis, 1998) and commitment (Ulrich, 1998) and adaptability (Fugate and Kinicki, 2008; Sony and Mekoth, 2012) found in the 'thinking part' of an enterprise (Roos et al., 1997).

The third theme relates to the way the 'non thinking' part of an enterprise is designed and structured and includes information technology, processes and procedures (Sveiby, 1997; Bontis, 1998; Kaplan and Norton, 2004).

The last theme identifies the importance of the range of organisational relationships that are nurtured and maintained both internally and externally (Roos and Roos, 1997; Dzinkowski, 2000; Marr and Schiuma, 2001).

These four themes of IA are summarised in Figure 1.1.4 below.

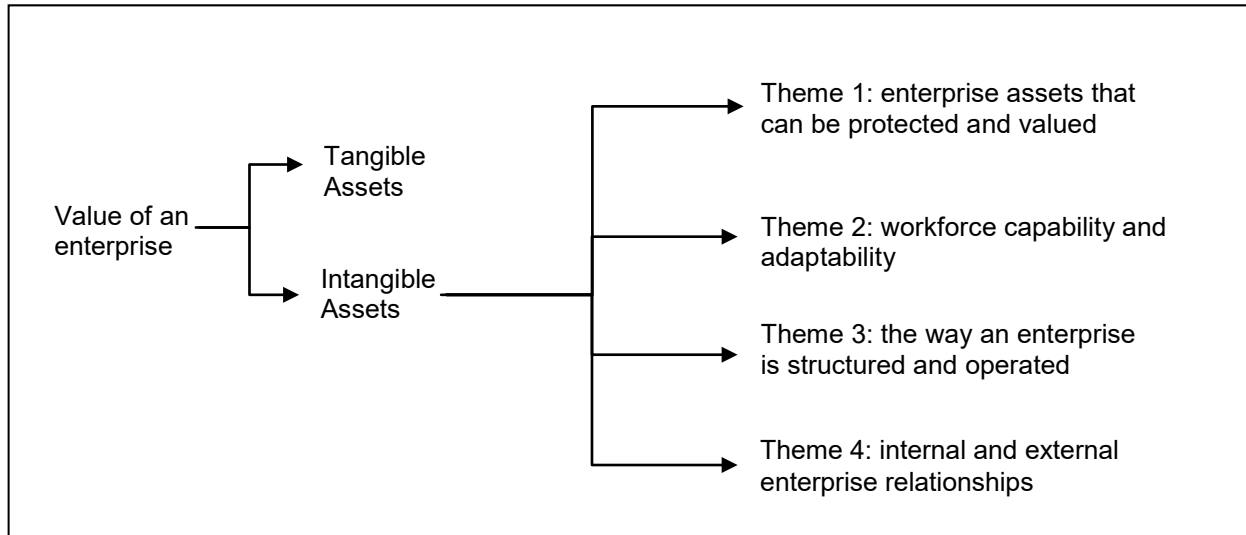


Figure 1.1.4 Four common themes relating to Intangible Assets

Theme one may be termed ‘Protected Knowledge’ or ‘Intellectual Property’. This is knowledge, generated by an enterprise that is either protected by codification in the form of drawings, blueprints and formulae or protected legally by mechanisms such as patents, trademarks, and brands (Sullivan, 2000). This aspect of IA / IC is well developed as indicated by commentary from the Global Congress on Intellectual Property (2011, p.1) which states ‘the last 25 years have seen an unprecedented expansion of the legal authority exercised by Intellectual Property rights holders’. As such it is already taken into account when assessing the value of an enterprise and is of limited relevance to the proposed instrument.

Theme two is the Intangible Asset often termed 'Human Capital'. The Human Capital theme includes knowledge, skills and attitudes that employees bring to an enterprise together with the way these are adapted and applied. Although often acknowledged as a critical asset, it is not regularly taken into account when assessing the value of an enterprise (Harding and Rouse, 2007; Chartered Institute of Personnel and Development, 2015). The HC issues that are taken into account are those that add risk as opposed to value because, at this stage, the aim of buyers is to negotiate a reduced price (Lippell, Commercial Lawyer, 2015, personal communication). Examples of risk include planned redundancy programmes; ongoing disciplinary proceedings and/or grievances; details of actual or contingent liability connected with the employment of former employees.

Theme three relates to the way an enterprise is integrated and operated and is, in this thesis, termed Organisational Capital. This represents the combination of decisions covering how work is to be carried out (business processes, information systems, operating procedures) and reporting structures (roles and responsibilities). The aim is to create an integrated enterprise with sub-systems working in harmony so enabling employees to achieve overall enterprise objectives. This is an important Intangible Asset in that, according to Cichocki and Irwin (2014, p.2) it will 'secure flexibility and adaptability for future growth, sustainability, and success in twenty-first century enterprises'.

Governance (direction and control) is already investigated in some detail by investors and analysts (Lippel, Commercial Lawyer, 2015, private communication) and, as such, is not included in the study.

The fourth theme covers networks of relationships with internal and external stakeholders and is termed Relationship or Social Capital. Internal organisational relationships include shared values (Peters and Waterman, 1982), basic assumptions relating to human nature and relationships (Schein, 2012) and norms of behaviour (Lepak et al., 2006). There are a number of classifications of external stakeholder relationships (Scholes and Clutterbuck, 1998; Kamann, 2007; Fassin, 2009) but an approach by Mainardes et al. (2012) is particularly relevant because it enables an assessment of the importance of a relationship. The relationships are defined as regulatory (e.g. accreditation agency), controller (e.g. majority shareholder, some types of customer), dependent (e.g. some types of supplier), partners (e.g. an inter-organisation partnership) and passive (e.g. some types of customer).

Following the literature review the Researcher will argue that the 4 Intangible Asset themes are a defensible synopsis of the components of IA. They reflect the framework developed by the Meritum Project (2001) which concluded that there are three underlying themes: Human Capital, Structural Capital (which includes Intellectual Property) and Relationship Capital. The three themes also reflect the framework used by Kaplan and Norton (2004) who used the constructs Human Capital (skills, talent and knowledge), Information Capital (databases information systems, networks and technology infrastructure) and Organization Capital (leadership; culture, employee alignment, teamwork and knowledge management).

Nevertheless it is apparent that there is currently no generally accepted definition of Intellectual Capital. There is general acceptance of the components but these are combined in different ways by different disciplines using different terminologies. In the context of this research the most important finding is that HC is a key component in all of the definitions and the next part of this Introduction will examine HC in more detail.

1.2 DEFINING HUMAN CAPITAL

This section offers a definition of HC, identifies three enablers of HC and goes on to deconstruct HC into component and sub-component parts. These components and sub-components will be used as a basis for identifying the likely content of the proposed instrument.

1.2.1 GENERATING A DEFINITION OF HUMAN CAPITAL

HC is visualised as the underlying driver of all IA / IC (Edvinsson and Malone, 1997; Kaplan and Norton, 2004). However, as with IA / IC, there has been limited agreement as to the definition of HC (Kingsmill, 2003; Baron and Armstrong, 2007; Fulmer and Ployhart, 2014; McCracken et al. 2017). Indeed, Scarborough and Elias (2002) made it clear that none of the enterprises they investigated used the concept 'Human Capital'. This reluctance may have been due to the risk of being seen to visualise people as 'economic units' which may be seen by some as politically unacceptable.

It is possible to identify in the literature three underlying components which, taken together, enable a definition of HC to be formulated. These components are competence, commitment and adaptability. Competence components (Schultz, 1961; Becker, 1962; Likert, 1967; Ulrich, 1998; Scarborough and Elias, 2002; Saratoga, 2005) are also described as 'knowledge that individuals acquire during their life and use to produce goods, services or ideas' (Miller, 1996 p.22); 'collective sum of life experience, knowledge, inventiveness and energy' (Weatherly, 2003 p.5).

Commitment components (Ulrich, 1998, p.125), both attitudinal and behavioural, relate to employees being in 'a state in which an individual identifies with a particular organization and its goals and wishes to maintain membership in order to facilitate these goals' (Mowday et al., 1979, p.225) or, more recently, employee 'willingness to use competence' (Saratoga, 2005, p.25). Adaptability components (Scarborough and Elias 2002) are also described as 'solving problems creatively' (Pulakos et al., 2000); 'focussed on innovation' (Saratoga, 2003/2004); dealing with uncertain and unpredictable work situations (Pulakos, op cit).

Taking these three components into consideration, a working definition of HC is 'the combination of competence, commitment and adaptability that creates value to an enterprise'. This reflects the definition to be found in the Oxford English Dictionary (2017, p.56) which defines the construct concisely as "the skills the labour force possesses and is regarded as a resource or asset."

1.2.2 HUMAN CAPITAL ENABLERS

It is difficult to visualise the full value of Human Capital without the support of both Organisation Capital and Relationship Capital. Effective Organisational Capital aims to maximise the contribution of people within an enterprise (Squicciarini and Le Mouel, 2012) and the development of effective Internal Relationships are critical to organisational teamwork (Dutton and Ragins, 2007). Accordingly, the assessment of Human Capital in this study will include an assessment of the supporting intangibles of Organisation and Relationship Capital. In larger enterprises this combination is seldom generated by chance.

HC is purposefully attracted, developed and retained by a combination of practices commonly described as 'Human Resource Management' (HRM). Specifically this includes practices such as resourcing and talent planning, learning and development, performance and reward, employee relations and engagement. Later in this review it will be shown that such sophisticated practices are rare in SMEs although they do exist in some and are becoming more common.

Organisation Capital and (internal) Relationship Capital too are facilitated by a range of HRM organisation development practices. A second, higher level, intervention – Strategic Human Resource Management (SHRM) – is also introduced by some enterprises to ensure that these potentially disparate HRM practices are integrated and synergistic (Guest, 1989). During this study the Researcher will need to decide on whether or not to include SHRM as a component of IA / IC.

In summary, Human Capital is one component of Intellectual Capital / Intangible Assets. It consists of a combination of competence, commitment and adaptability. Other components comprise Organisational Capital and Relationship Capital. These interact to add value to an enterprise. Protected Knowledge is the fourth component. Typically this is already taken into consideration when valuing an enterprise.

1.2.3. DECONSTRUCTING HUMAN CAPITAL

This sub-section identifies the more detailed elements of human capital, described by Schultz (1972) as 'subfields'. These are outlined in more detail below. It is envisaged that these subfields will contribute to the initial content of the proposed instrument. The sub-section reviews the academic commentary on subfields chronologically.

1.2.3.1 Human Capital subfields pre-1999

There was an increase in the number of peer reviewed articles concerning HC post 1999, possibly due to the rapidly increasing influence that intangibles had on the value of shareholder equity in the late 1990s (Hulten and Hao, 2008). This sub-section describes the HC subfields discussed pre-1999. The next sub-section describes those post 1999.

As outlined in sub-section 1.1.2, (The History of Intellectual Capital) commentary on aspects of human capital can be traced back to the 18th century, but it was Penrose (1959) who was among the first to acknowledge the relationship between an enterprise's employees and its effective use of resources. She distinguished, in turn, between managerial and entrepreneurial competencies and also noted how the value of knowledge can increase with time, contributing to both the efficiency and profitability of an enterprise. It was also in the '50s that Ansoff (1957) made it clear that, in order to retain their position in their respective markets, organisations should embrace change including attention to 'internal factors' (p.124).

Schultz (1961, p.9) focussed on the links between investment in human capabilities and economic growth. He focussed on five categories of capability development: improved wellbeing; on the job training, including apprenticeships; formally organized education; adult study programmes and individual adaptability in the face of changing opportunities.

Becker's equivalent subfields (1962, pp. 10 - 41) were investment in training (p.10); the loss of investment due to employee turnover; variability in pay to reflect specific skill sets; the impact of pension plans; knowledge obtained through schooling; general knowledge, for example of the economy or politics; emotional and physical health; wage differentials; levels of motivation; rates of return on investment and risks associated with such investments.

Likert (1967) described human assets in terms of impacting on productive capacity and customer goodwill (p.148). He identified 11 aspects of 'personnel superiority', these being individual intelligence and aptitudes; levels of training; motivation to achieve; quality of leadership; focus on innovation and improvement; quality of communication upward, downward and laterally; quality of decision making; co-operative teamwork; quality of organisational controls; quality of co-ordination; capacity to use experience.

The 1960s also saw the initial work on human resource accounting at the University of Michigan (Brummet et al.1968a; 1968b; 1969). The researchers saw this approach as potentially a tool to manage human resources internally but also for external reporting. The approach visualized human resources as organizational assets as opposed to the traditional accounting view that classified (and still classifies) them as expenses. The approach was based on estimating the probability

of an employee leaving an organisation along with probabilities relating to promotability, mortality and salary levels.

Schultz (1972) reviewed the theoretical and empirical advances achieved in the '60s and listed some of the subfields of human capital (p. 3). These he specified as employee motivation; employment of ethnic groups; changes in the mix of labour skills; differences in entrepreneurial abilities associated with different levels of education; the demand and supply of scientists and other highly skilled personnel; changes in the pattern of wages and salaries; equal distribution of personal income; education and training of adults on the job.

In the '70s Blaug (1976) described the development of 5 themes. These were research into the impact of 'native ability' on earnings (Hause, 1975); the demand for formal education and links to future earnings (Mincer 1974); improvements in on-the-job training (Schultz, op cit); rates of return on investment in education and training (Psacharopoulos and Hinchliffe, 1973) and an acknowledgement that national human capital was enhanced by migration (Greenwood, 1975).

In addition to these five themes, two others were of note. The first reflected efforts to place a financial value on human capital (Flamholtz, 1971, 1974; Giles and Robinson, 1972; Glautier, 1976; Mirvis and Macy, 1976; Schwan, 1976). The second was an acknowledgement of a continuing increase in environmental uncertainty and the need for strategic and organizational flexibility (Eppink, 1978).

The research into human capital in the '80s was reviewed by Mincer (1989). He emphasized the cost and benefits of acquiring individual human capital and used the term 'labour quality' to describe the outcome of such investment (p. 27). In addition he commented on the links between 'firm specific' training and low employee turnover levels; the formation of adaptable skills in the context of technological change and the suggestion that higher levels of education facilitate this formation.

The '80s also heralded the construct of social capital (Coleman, 1988) defined as 'relations among persons' (p.100). According to Coleman, the strength of such relations depends on levels of trust between actors. Strong relationships facilitate the acquisition and use of knowledge and networks of relationships generate norms which significantly influence behaviour within the network.

Lastly, researchers in the '80s continued the debate on the need for strategic flexibility in response to uncertain and fast moving markets and technological developments (Aaker and Mascarenhas, 1984).

This debate on flexibility continued into the '90s (Fliedner and Vokurka, 1997; Teece et al. 1997) and a distinction between flexibility and agility was introduced (Baker, 1996). Flexibility was judged to relate more to operational adaptability while agility placing greater focus on organisational strategies. The '90s also saw a more specific acknowledgement of the changes which were generating the need for strategic agility. These were increasing market fragmentation; production and customisation to order; market heterogeneity; shortening product life cycles; product and service combinations; production globalisation; concurrent co-operation and competition between firms (Goldman et al. 1995).

Running in parallel with this need for flexibility / agility In the 80s and '90s was a thread of research debating the respective benefits of internal development, external recruitment (Miles and Snow, 1984) and of outsourcing work (Bettis et al., 1992) with associated commentary on increasing workforce diversity (Thomas,1992). The proponents of internal development (e.g. Mahoney, 1992) argued that benefits could include greater stability, co-ordination and control and a stronger culture. Those arguing for outsourcing (e.g. Davis-Blake and Uzzi, 1993) emphasized the potential cost advantages and improved organizational flexibility. The debate culminated in Lepak and Snell's framework (1999) where they proposed four employment strategies could exist within the same organisation, each strategy based on the combination of employee scarcity and value. This framework is discussed in more detail in section 2.6.5.

In summary, the human capital subfields, discussed by researchers before 1999, and those associated with organisation and relationship capital, are demonstrated in the table 1.2.3.1 over page. Incorporated in much of the table is the concept of investing in a workforce as an asset in order to improve its overall quality and obtain a financial return; second an acknowledgement that such investment comes with the risk as a result of, for example, employee turnover (e.g. Brummet et al.1968a; Mincer, 1989). Lastly the importance of human capital in the national context was introduced (Greenwood 1975). This is discussed in more detail in sub-section 2.2.3 (Personal and Organisational Human Capital Generate National Human Capital).

1. The characteristics of leadership, entrepreneurship, management and approaches to decision making.
2. Linked to leadership, a focus on strategic and organisational agility in response to accelerating levels of change.
3. Acknowledgement of the importance of social capital relating to external relationships and customer goodwill.
4. The concept of organisational capital in the context of the need for organisation controls and co-ordination
5. The importance of the acquisition of 'native' or innate employee abilities - physical, intellectual and psychological - and associated wellbeing.
6. The need for employee adaptability in the context of innovation and change.
7. The changing composition of the workforce; levels of diversity (the developing use of 'periphery' workers (and levels of employee turnover.
8. Debate on how best to develop and retain a competent workforce, including the respective advantages of internal development; external recruitment and outsourcing
9. Recognition of the importance of formal education and firm-specific training, particularly in the context of developing skilled personnel such as scientists
10. The importance of internal social capital including co-operative teamwork and the quality of internal communications and sharing of knowledge
11. Aspects of extrinsic motivation including variability in pay, wage differentials and the availability of employee benefits and their impact on length of tenure and consequent acquisition of experience

**Table 1.2.3.1. Summary of the sub fields relating to human,
organisational and relationship capital pre-1999**

1.2.3.2 Human Capital subfields post-1999

In the 2000s, as demonstrated in figure 1.2.3.2 below, the number of peer reviewed articles relating to human capital (individual, organizational and national) increased year on year. The increase may be attributed to the rapidly increasing influence that intangibles had on the value of shareholder equity in the late 1990s (Hulten and Hao, 2008).

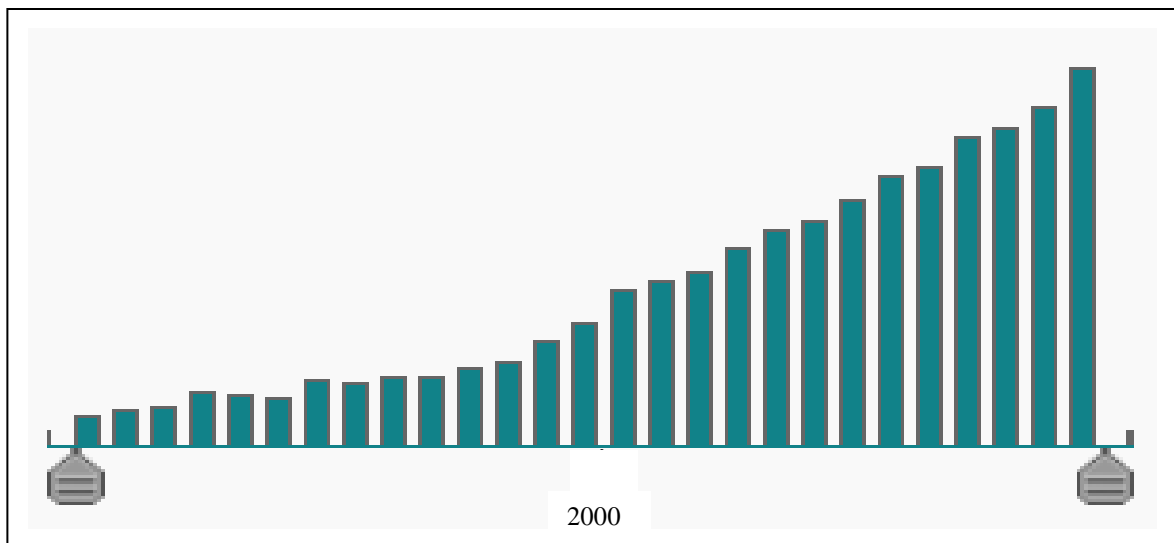


Figure 1.2.3.3. The number of peer reviewed articles covering issues of HC 1999-2016

The content of these articles represents continuing debate on the topics specified up to 1999 and constitutes the following clusters:

Aspects of strategic agility, including organizational absorptive capacity and dynamic capability (e.g. Eisenhardt and Martin, 2000; Salavou et al. 2004; Protogerou et al. 2008; Siqueira and Cosh, 2008; Senge et al. 2014; Costanza et al. 2016; Day and Schoemaker, 2016).

Aspects of organisational structure, including the use of technology (e.g. Anand and Daft, 2009; Francalanci and Morabito, 2008; Cichocki and Irwin, 2014; Soto-Acosta et al. 2014).

External relationships, stakeholders and social capital (e.g. Bosma et al. 2004; Chartered Institute of Management Accountants, 2006; Lechner et al. 2006; Fassin, 2009; Russo and Perrini, 2010; Westlund and Adam, 2010; Hormiga et al. 2011; Mainardes et al. 2012).

Management practices, including high performance work systems, human resource management and knowledge management (e.g. Andreeva and Kianto, 2002; Pfau and Kay, 2002; Pentland and Feldman, 2005; Chan and Chao, 2008; Francalanci and Morabito, 2008; Purcell et al. 2008; Messersmith and Guthrie, 2010; Patel and Cardon, 2010; Bititci et al. 2011; Guest and Conway, 2011; Sparrow, 2011; Khan et al. 2013; Theiou and Chatzoglou, 2014).

Debate on issues of leadership, including entrepreneurship, (e.g. Vecchio, 2003; Michelmore and Rowley, 2010; Dorfman et al. 2012; Bell et al. 2014; DeNisi, 2015; Hayton 2015; Rubin et al. 2016; Leitch and Volery, 2017).

Workforce capacity and composition, including diversity (e.g. Richard, 2000; Van Knippenberg et al. 2004; Verworn et al. 2009; Martin-Alcazar et al. 2013; Abel et al. 2016).

Workforce education and competence (e.g. Keogh and Stewart, 2001; Devins and Johnson, 2003; Teece, 2003; Storey, 2004; Ready and Conger, 2007; Patrinos and Psacharodopolos, 2011; Hancock, 2014).

Workforce commitment, with links to pay and wellbeing, (e.g. Lambert, 2000; Storey et al. 2002; Pendleton, 2006; Renee-Baptiste, 2008; Attridge, 2009; Harper and Price, 2011; Meyer et al. 2012; Stanley et al. 2013; Mesu et al. 2015; Ogbonnaya et al. 2017).

Internal relationships, shared values and organizational culture, (e.g. Ogbonna and Harris, 2000; Forth et al. 2001; Haugh and McKee 2003; Dutton and Ragins, 2007; Gomez et al. 2009; Denison et al. 2014).

Workforce innovation and adaptability including outsourcing (e.g. Pulakos et al. 2000; Hult et al. 2004; Belcourt, 2006; Van de Vrande et al. 2009; Quinlan, 2012; Buschgens et al. 2013; Senge et al. 2014; Rubery et al. 2016; Iwao, 2017).

Workforce costs / investments (e.g. Cameron, 2000; Brooke, 2003; Dolfen, 2006; Burgess and Williams, 2009; Turvey, 2009; Rubery et al. 2016).

During this period there was an acknowledgement that human capital accounting in the form favoured originally by Brummet (op cit) had been superseded by intellectual capital approaches that integrate human capital with other intangibles (Flamholtz et al. 2002).

In addition to the publications which have been focussed primarily on an academic audience, the early 2000's heralded a series of publications arguably aimed at executives and HR professionals.

The first of these (Fitz-enz, 2000) focussed on the return on investment in human capital. The wide range of human capital metrics discussed in the book was summed up with a proposed composite human capital scorecard. This covered corporate level metrics (e.g. human capital revenue; human capital value added); functional level metrics (e.g. commitment levels; depletion rates; corporate climate) and human resource metrics (e.g. average pay per employee; total training hours provided; cost of employee turnover). The index of Fitz-enz's book indicates that the content is based on contributions from large American organisations (e.g. AT&T; First Interstate Bank; Goldman Sachs; Hewlett Packard; IBM; NASA; Nike; Taco Bell; Wall Mart). As such some of the metrics may have less relevance to medium sized enterprises in the UK. Nevertheless, there are some which may be of relevance to the current study and these will be reviewed during the instrument development phase (Section 6)

In 2001 Mayo published his approach to valuing people as assets within an enterprise which he subsequently augmented in 2012. His approach to the assessment of human capital comprised three key components – people as assets; people motivation / commitment and people contribution to added value. His first component emphasised the need to visualise people as assets as opposed to costs. He favoured the work on human resource accounting (Brummet et al. op. cit. Flamholtz et al. op. cit.) and advocated a combination of employment costs plus an individual asset multiplier to calculate the worth of human assets. The employment cost would be established by combining an employee's base salary, the value of benefits and the cost of taxes. The multiplier would be based on an assessment of individual capability (skills, knowledge, experience and networks), potential for

In 2002 Pfau and Kay published their research into the impact of human resource management practices on shareholder value. The practices covered recruitment and retention; workforce commitment and flexibility; employee – management communication (including the use of technology) and linking pay to performance. One of their important findings of relevance to this study was that they demonstrated a strong relationship between human capital and a total return to shareholders. The relationship they characterised as quantifiable and conclusive: over a period of 5 years companies with a high human capital score generated a return of 64%; those with a low index score generated a return of 21%.

The work carried out by Pfau and Kay resulted in a human capital index which they used as a predictor variable. This enabled the strong relationship between human capital and the outcome variable, shareholder value to be demonstrated.

This link is important to the current study because of the need to be able to demonstrate to investors the potential added value of including human capital data in their investment decisions.

2005 saw Huselid et al. introduce their comprehensive workforce scorecard which emphasized the interaction between human capital and organisational capital. They also supported the practice of differentiating employees based on their impact on the achievement of business objectives. Their list of measures of workforce success were categorised as leadership influence on workforce behaviours (p.74); human resource management policies and practices (p. 113); workforce mind-set and culture (p79); and the impact these have on business objectives (p. 72). As with previous publications, theirs included a comprehensive range of human capital metrics. These included knowledge sharing; employees with experience outside of

their current role; clarity of messages from senior management; understanding of goals / objectives; workforce access to business information; performance contingent pay. Once again, these metrics have focused on use by large organisations (e.g. Accenture; Coca Cola; General Electric; IBM; Johnson and Johnson; Microsoft; Wells Fargo). Nevertheless, in the context of this study, some of the metrics could be taken into consideration in the initial stages of instrument development and will be reviewed during the early stages of instrument development (Section 6).

Two years later, in 2007, Baron and Armstrong published what, in effect, was a summary of progress on the management of human capital. In their book they confirm the impact of the combination of human capital, organisational capital and social (relationship) capital. Of particular interest in the context of this study is their human capital management toolkit which includes a checklist of metrics. These too can be taken into consideration during the initial stages of instrument development. Their recommended metrics include: workforce composition; length of service (tenure); skills set, including graduates and professionally qualified employees; employee turnover rates for different categories of employee; absenteeism / sickness rates; absenteeism and grievance rates; total payroll costs; employees in pay – by – results schemes; cost of contingent pay awards; amount of personal development offered; internal promotion rates and succession planning; formal performance reviews; number and severity of accidents; impact of employee suggestion schemes; outcomes of employee opinion surveys; cost of outsourcing plus contingent workforce; work design; workforce mindset and behaviour; change agency. As with previous authors, Baron and Armstrong's examples have been large organisations (e.g. ASDA; Nationwide; Lloyds; Norwich Union; NSPCC) but this does

not necessarily mean their metrics cannot be taken into consideration during the initial stages of instrument development.

The metrics listed above will be compared to those used in those instruments used to assess human capital in large organisations (section 2.7.5, Factors Used by Existing Approaches.) and reviewed during the early stages of instrument development (section 6, Instrument Development).

Over the years from the 1960s the above research into human capital has been linked to four interlocking themes. These have been knowledge management (Drucker,1959; Machlup,1962; Usman,1963), innovation (Schumpeter,1942; Thompson,1965; Argyris,1965; Cummings,1965), reaction to change (Coch and French,1948; Bennis,1965; Schein et al., 1965) and continuous improvement (Koyanagi,1960; Nixon,1962). The late 20th century saw a coalescence of these themes into one overall concept entitled 'Resource Based Strategy'. This is discussed in more detail in the sub section 2.1.2 (Human Capital Has Been a Key element of Resource Based Strategy). The next section reviews the value of Intellectual capital and the Researcher's interest in the construct.

1.3 THE VALUE OF INTELLECTUAL CAPITAL

Intellectual Capital / Intangible Assets increase the value of enterprises in excess of their 'book value' traditionally established using standard accounting procedures (Blair and Wallman, 2001). The median 'price to book ratio' over the last five years is 2.77 and has ranged over the last twenty years between 1.75 to 5.00 (Vectorgrader, 2013) This indicates that the current value of an enterprise is typically 2.77 times that determined by classical accounting.

1.3.1 INTELLECTUAL CAPITAL IN SMEs

The components of IC / IA may be found in a wide range of enterprises, regardless of size (Cohen and Kaimenakis, 2007). However, in the case of medium sized enterprises it is the employees who are closely involved in developing and maintaining such assets. In particular, in addition to the senior management team, it is the employees who are a key repository of knowledge (Desouza and Awazu, 2006). Here, typically, there is more reliance on tacit knowledge and less on codified knowledge (Nunes et al., 2006). Also, due to the fact that employees have close proximity to customers, external relationships can be developed more readily and more closely than in larger enterprises (Wong and Aspinwall, 2004).

However it appears that information on IC / IA, which would be of interest to Investors and Analysts, has not been readily available in SMEs. A case in point is the case of Mergers and Acquisitions (M&A). Many of the stated goals of M&A are not achieved (Moeller et al., 2004; Marks and Mirvis, 2011). According to Schuler and Jackson (2001) one major factor contributing to this is likely to be limited or non-existent assessment of HC. Investors do not typically take the value of HC into

account when carrying out due diligence. Comprehensive textbooks on Mergers & Acquisitions (M&A) do acknowledge that Human Capital is a valuable asset (Lajoux and Elson 2010) but concentrate more on risks associated with HC. For example due diligence checklists cover the need to investigate risks relating to employment contracts and disputes, pension plans, share options, consulting agreements (Lajoux and Elson, 2010; Scott, 2013). The checklists seldom include an assessment of the value of Human Capital.

Accordingly the Researcher argues that a comprehensive and systematic portrayal of Human Capital in SMEs is overdue and that any portrayal should also take into account the influences of Organisational Capital and Relationship Capital. A valid and reliable instrument addressing these is likely to be welcomed by some categories of Investors and Analysts. (Chartered Institute of Personnel and Development, 2007; 2017). These categories are discussed in more detail in section 6.3.

1.3.2 THE RESEARCHER'S INTEREST IN INTELLECTUAL CAPITAL

The researcher's interest is based on experience of developing SHRM and HRM within enterprises ranging from public sector SMEs to private sector multi-nationals. In his experience, historically, it has been mainly the large nationals and multi-nationals that acknowledge the importance of HC. Here competency frameworks are used to identify both target and achieve competency levels. Commitment and adaptability is assessed using employee opinion surveys. SMEs would not necessarily need to use such sophisticate practices, but any approach to assessing HC would need to identify how these three components are managed.

1.4 THE PURPOSE OF THE RESEARCH

The purpose of this study, therefore, is to establish the relationships between the Human Capital (HC) plus associated intangibles (OC and RC) portrayed within an SME and the value that investors place on those intangibles.

There have been a wide range of independent variables used to study the influence of HC and associated intangibles on enterprise outcomes. These are reviewed in section 2.4. There have been few, if any, that offer a comprehensive range of factors which enable a valid and reliable assessment of HC in SMEs. The first objective of this study, therefore, is to develop an instrument which will enable a systematic and comprehensive portrayal of HC in an SME.

1.4.1 THE PREDICTOR VARIABLE

The predictor variable will be the quality of human capital and associated intangibles portrayed by an SME as determined by a comprehensive assessment instrument. The assessment instrument will be developed during this study and its validity and reliability demonstrated.

1.4.2 THE OUTCOME VARIABLES

There have also been a wide range of outcome / dependent variables used when studying the influence of HC on enterprise outcomes. Proximal outcome variables (e.g. job satisfaction; operational efficiency) have been widely used as have distal outcome variables (e.g. enterprise revenue or return on assets). Currently investors focus their attention on the distal financial variables and use sophisticated databases on which to base their decisions (e.g. Really Essential Financial Statistics, 2017).

This study will use three outcome variables – enterprise revenue; strategic agility and changes to intended levels of investment.

1.4.2.1 Outcome variable 1 – variation in revenue

The outcome variable 1 will be the variation in revenue of an SME over a period of 3 years. Many of the studies to be outlined in section 2.4. aim to demonstrate a correlation between HC and a financial outcome. It will be argued in the current study that a strong correlation between HC and financial outcomes will not be of interest to investors. This is because a strong positive correlation will mean that data on HC is already incorporated into the ‘financials’ that investors use. A strong negative correlation would imply that the cost of developing a quality workforce has an adverse effect on an enterprise’s ‘bottom line’. Accordingly, in the context of SME revenue, a zero correlation would be an acceptable outcome as long as there is a more positive correlation with outcome variables 2 and 3.

1.4.2.2 Outcome variable 2 – strategic agility

The outcome variable 2 will be the level of strategic agility enabled by a quality workforce. This will be assessed by the number of strategies used by an SME, based on the work of Miles and Snow (1978). This study will argue that a good quality workforce will enable a management team to change their business model in the light of a changing market environment. It is this ability to identify changes in the market(s) and adapt accordingly that investors will value because an SME is more likely to survive. The ‘financials’ do not provide this information. They are lagging indicators while the HC assessment will be a leading indicator.

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1.4.2.3 Outcome variable 3 – change to intended level of investment

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2. LITERATURE REVIEW

2.1 HUMAN CAPITAL HAS ALWAYS BEEN AN INFLUENTIAL RESOURCE

The construct Human Capital is not a new one. This Section outlines its history and influence.

2.1.1 EARLY PHILOSOPHERS, ECONOMISTS AND POLITICIANS ACKNOWLEDGED THE VALUE OF HUMAN CAPITAL

The concept that individuals have a value as part of an enterprise / nation is not new. Prior to the 20th century, Economists were among the first to advocate their importance when proposing ways of applying national taxes (Petty, 1899) and increasing production (Marshall, 1890; 1920).

It was also during this time that Labour Theory of Value was initiated independently by theorists, including Philosophers (Locke, 1689; 1952), Politicians (Franklin, 1729) and Economists (Smith, 1776; Ricardo, 1817). The theory proposes that the value of an output should be determined by the amount of labour invested in producing it. One of the most famous proponents of this theory is Karl Marx (1859). Marx anticipated current thinking about HC when distinguishing between 'labour power' and 'labour'. He describes labour power in terms of the brains, skills muscles and capabilities of workers. This is not far removed from the more modern definitions for example life experience which generates energy, knowledge and inventiveness (Weatherly, 2003). Marx defined 'labour' as the activity of producing value. This also is similar to another common element of HC which relates to work as a choice made

by employees (Weatherly, 2003). The Labour Theory of Value in its purest form has not stood the test of time as evidenced by the failure of communist policies (Blackburn, 1991; Losurdo, 2003) and the systematic critiques in the literature (Sayer, 1985; Eagleton, 2006). Nevertheless it does serve to confirm that early Philosophers, Economists and Politicians have judged that people are of value in themselves, as well as generating value.

It was the mid 20th century that saw a developing interest in how improved management of people (McGregor, 1960; Katz, 1964) and investment in people (Becker, 1964) could impact on organisational competitiveness, growth and value. This interest was channelled into four interlocking themes. These were knowledge (Drucker, 1959; Machlup, 1962; Usman, 1963), innovation (Schumpeter, 1942; Thompson, 1965; Argyris, 1965; Cummings, 1965), reaction to change (Coch and French, 1948; Bennis, 1965; Schein et al., 1965) and continuous improvement (Koyanagi, 1960; Nixon, 1962) all combining to form a resource of effectiveness / value / worth (Penrose, 1959, Argyris, 1962). It also was during this time that an accountancy debate on assessing the value of a person within an enterprise was initiated in the form of 'human resource accounting' (Hermanson, 1965; Flamholtz and Lacey, 1981) which, according to Flamholtz et al. (2002), merged into 'Swedish - based developments' (op. cit. p.592) culminating in Skandia's approach to intellectual capital reporting. (Edvinsson, 1997). This is described in more detail in sub-section 2.7.3.2. The late 20th century saw a coalescence of these themes into one overall concept entitled 'Resource Based Strategy' (Wernerfelt, 1984; Barney, 1991; Grant, 1991; Peteraf, 1993).

was on the benefits of having a flexible range of resources within an enterprise which could cope effectively with changing market conditions. One of the first acknowledgements of the need also to focus on a flexible range of internal resources may be found in Birger Wernerfelt's article 'A Resource Based View of the Firm' (1984). Wernerfelt's argument was that, if business schools all taught their students to identify attractive specialist markets, it would not be long before competition would destroy that attractiveness. Hence a continued use of this strategy would be self defeating. His thesis was that an emphasis on internal resources would offer a significantly greater insight into how best to cope with rapidly changing markets. A 'resource' was defined as '(tangible and intangible) assets which are tied semi-permanently to the firm' (ibid, p4). He included in this definition 'in-house knowledge of technology; employment of skilled personnel; trade contacts and efficient procedures'. His examples are analogous to today's concept of 'Intangible Assets' with 'skilled personnel' being analogous to Human Capital.

The issue at that time, and which still continues, was how to identify the resources and conditions which would lead to sustainable competitiveness and high returns. Such resources are characterised as being valuable, rare, inimitable and non-substitutable (Wernerfelt, 1984, Barney, 1991; Peteraf, 1993). Human Capital is one resource that exactly matches these criteria.

Subsequent researchers have improved the balance between analysing external market conditions and analysing internal resources. Their counter - assumptions are that markets change so quickly that many analyses could be out of date before they are finished; secondly that there is heterogeneity of resources in enterprises which

result in differences in performance; thirdly these heterogeneous resources are not necessarily mobile and consequently can offer a unique competitive resource (Barney 1991; Rumelt and Lamb, 1997.). These assumptions can be applied specifically to the concept of HC (Boxall, 1996).

The rapidity of change in the environment in general, and relevant markets in particular, has generated debate on how effective enterprises are at re-organising or renewing their internal resources. This debate may be found under various headings such as combinative capability (Kogut and Zander, 1992), reaction to perceived uncertainty (Sawyer et al., 2003) and architectural competence (Henderson and Cockburn, 1994). However, these debates are most commonly consolidated under the term 'dynamic capabilities' (Teece and Pisano, 1994; Eisenhardt and Martin, 2000; Protogerou et al., 2008) which is discussed in more detail in sub-section 2.4.3.3.

2.1.3 EXAMPLES OF RESOURCE BASED STRATEGY

The importance of maximising the impact and flexibility of internal resources was demonstrated by manufacturing industry in the late 20th century. In 1978 Toyota marketed the Corolla in the USA at less cost and better quality than American equivalents. Motor cycles, machine tools and electronic goods soon followed (Smith, 1989). The lower manufacturing cost and better quality was the result of initial advice from American consultants (e.g. Deming, 1951) which was subsequently developed by the Japanese Union of Scientists and Engineers. This advice was holistic in nature but particularly focussed on how best to harness Human Capital resources. Deming's 14 points for management, for example, include leadership; education, training and self improvement; minimising fear and maximising trust; focussing on

pride in workmanship and continuous improvement – all ways of maximising the value of Human Capital. The American, and European, response was to match the Japanese approach with two competing models of business management aimed at maximising the use of internal resources including Human Capital. The two approaches are the Baldrige Excellence Program (1987) and the European Foundation for Quality Management (EFQM) Excellence Model

(1988). The two approaches are used today by medium and large enterprises and seek to specify the combination of internal resources required to achieve sustained competitive advantage. The models distinguish between the management of resources (also termed enablers / drivers / system) and measurement of results (also termed goals / progress).

In terms of resources, leadership is the starting point of both models. Leaders are expected to establish/influence direction, values, governance and performance. Direction / redirection, policy and strategy are determined by regular review of stakeholder expectations and environmental developments. Intangible resources relate to customers, knowledge, processes and people. Tangible resources are included of course but are of less interest to the current research.

It is clear from the above that resource based strategies incorporating Human Capital, together with dynamic capabilities, are important elements in the survival and competitiveness of enterprises operating in fast changing markets. As such both are candidates for inclusion in the proposed instrument.

The next Section focuses on Human Capital in more detail, distinguishing between personal HC, organisational HC and regional / national HC.

2.2 HUMAN CAPITAL IS CURRENTLY AN INFLUENTIAL RESOURCE ON THREE LEVELS

The HC described above is enterprise specific and this thesis subsequently concentrates on this aspect. However, there are two other types of HC which are found in the literature. These are personal HC and regional / national HC. In this section the Researcher places all three in context.

2.2.1 PERSONAL HUMAN CAPITAL IS A FUNDAMENTAL BUILDING BLOCK

The concept of personal HC is becoming more important as the classical employment relationship between individual and enterprise dissipates (Cappelli and Keller, 2012; Quinlan, 2012; Morris et al. 2017). Individuals with potentially strong personal HC are increasingly willing and able to control their own development, careers and destiny (Gratton and Ghoshal, 2003; Czerniawska, 2005). Such individuals are now commonly found in the ranks of generation Y (millennials) who are likely to have different aspirations and values when compared to previous generations X, baby boomers and traditionalists (Cogin, 2012).

Personal HC comprises a range of components listed as general mental ability, knowledge, skills, experience, personality, interests and values (Ployhart and Moliterno, 2011). These can be clustered into cognitive, emotional and relational components of Personal HC (Gratton and Ghoshal, 2003).

The cognitive component comprises general mental ability, capacity to learn, plus the product of learning – knowledge and expertise. The importance of this

2.2.2 PERSONAL HUMAN CAPITAL CAN BE DEVELOPED INTO ORGANISATIONAL HUMAN CAPITAL

Personal human capital (HC) is the sum of individual skills, knowledge, and abilities that can be developed into organisational human capital (HC). This process involves the transformation of personal HC into organisational HC through the support of organisational design, task environment complexity, and organisational relationships. Strategic human resource management (HRM) plays a crucial role in this process, ensuring that the organisation's HC is aligned with its strategic goals and objectives.

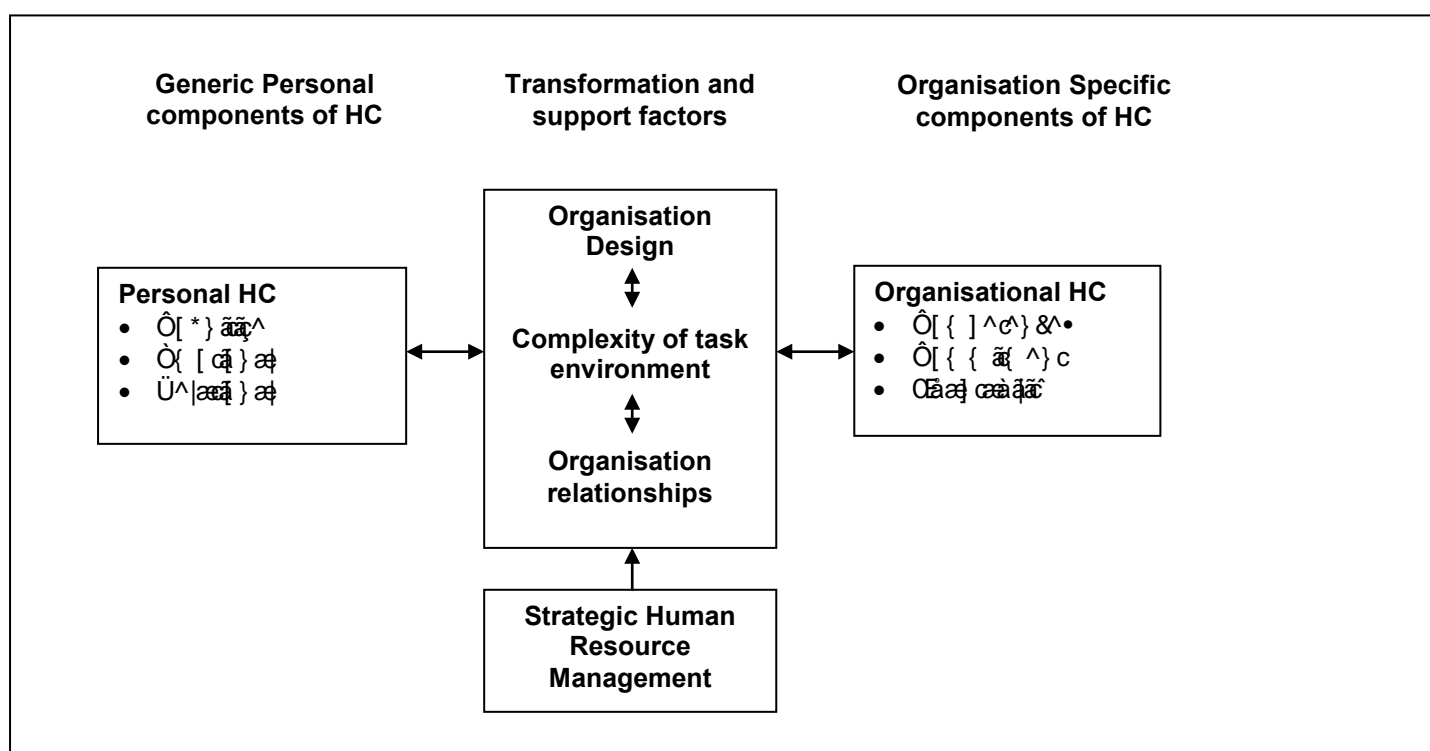


Figure 2.2.2. A process transforming Generic Personal HC to Specific Organisational HC

The process of transforming generic personal human capital into specific organisational human capital is a complex and dynamic one. It involves the integration of individual skills, knowledge, and abilities with the organisational context, including the task environment, organisational design, and organisational relationships. Strategic human resource management (HRM) is a key driver in this process, ensuring that the organisation's HC is aligned with its strategic goals and objectives. The process is iterative and ongoing, as the organisation's HC evolves over time in response to changing market conditions and internal dynamics.

customer' uni-directional flows to a relatively complex flow with bi or multi - directional inputs and outputs.

This complexity influences the development of internal Organisation Relationships. Increasing levels of complexity place greater demands on individuals. The more demanding nature of the environment results in the need for enhanced multiple communications, and increased sensitivity to the behaviour of others (Bell and Kozlowski, 2002).

Task complexity also influences the climate in which individuals work. The increasing number successful interactions generate shared goals and values which themselves create homogeneity among members of an enterprise (Rentsch, 1990). Such complexity also encourages the sharing of information about the importance of bi and multi-directional workflows resulting in both shared memories and communities of practice (Youndt and Snell, 2004). More complex task environments also generate the need to anticipate and respond to problems. This leads to an attitude of continuous improvement and learning together with the necessity to transfer and accumulate the newly acquired knowledge and information. Lastly the successful implementation of multiple communication, increased sensitivity, sharing of information and learning itself creates a level of openness and trust which itself facilitates improved relationships.

This set of relationships may well develop without any formal intervention. Indeed, the need for formal intervention may be less in small enterprises (Mullins 2013). Nevertheless the levels and speed of change experienced by enterprises has

employment strategies with differing implications for the impact of SHRM practices. This approach will be discussed in more detail in Section 2.6.5.

In the context of this thesis it is important to note that increasing task complexity together with stronger organisational relationships and more organic organisational integration renders the resulting HC more difficult to imitate. (Barney, 1991; Dierickx and Cool, 1989).

2.2.3 PERSONAL AND ORGANISATIONAL HUMAN CAPITAL GENERATE NATIONAL HUMAN CAPITAL

The development of Regional and National Human Capital is becoming an increasingly important element of UK government activity (Jones and Fender, 2011; Newbold and Brown, 2017). This is due to three considerations. Firstly National HC is believed to be an important driver of national growth (Denison, 1985; Solow, 1988; Romer, 1989). Secondly increased acquisition of personal HC is believed to increase the likelihood of employment (Steedman, 1996), earnings (Patrinos and Psacharopoulos, 2011) and productivity (Black and Lynch, 1996). Lastly there is a requirement to use estimates of HC as a component in the measurement of national well-being (Harper and Price, 2011).

The linkage between personal HC, organisational HC and national HC relates to the calculation of the value of National HC. The main source of data for calculating National HC is the quarterly Labour Force Survey conducted by the UK Office for National Statistics. From this survey, only those in employment are taken into account (Jones and Fender, 2011). Consequently any increase in the value of

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2.3 HUMAN CAPITAL IS THE ANTECEDENT OF ALL OTHER INTANGIBLES

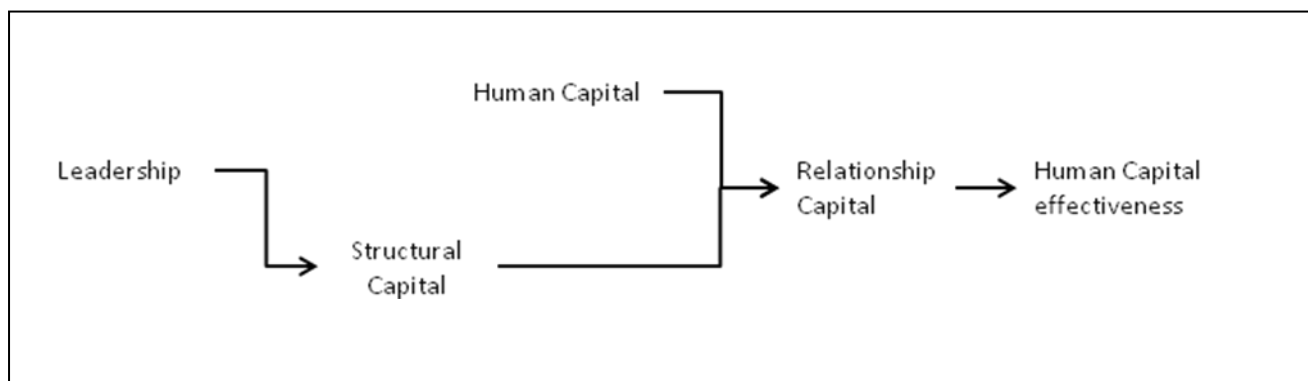
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2.3.1 HUMAN CAPITAL AND EARLY STAGES OF AN ENTERPRISE

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If leadership were to be included as a component of human capital, then the work of Jardon and Martos (2012) in South American manufacturing demonstrates how the development of the three components may be sequenced. Their model places human capital as the antecedent which influences structural (organisational) capital which in turn influences the development of relationship capital. The three intangibles combine with tangible resources to generate enterprise capabilities. This is shown in figure 2.3.2b below:

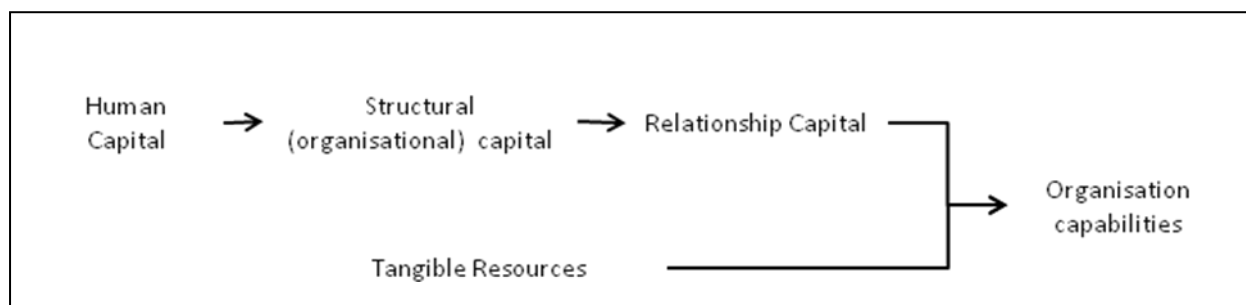


Figure 2.3.2 (b) The Jardon and Martos model of relationships between intangibles (2012)

However, it is likely that the interaction between the three intangibles is more complex than described above and dependent on different styles of entrepreneurial human capital, enterprise maturity, strategy and the nature of the markets in which an enterprise operates. The following section discusses the interaction between the three intangibles.

2.3.3 THE HUMAN CAPITAL, ORGANISATIONAL CAPITAL AND RELATIONSHIP CAPITAL COMBINATION

It is common to find the combination of Human, Organisational and Relationship Capital in the literature relating to mature enterprises (Dumay, 2016). However, this common finding is complicated by different researchers using different terminologies and different dependent variables.

2.3.3.1 Different terminologies

Although the three components of intellectual capital, as described above, are constructs commonly found in publications (Cabrita and Bontis, 2008; Hsu and Fang, 2009; Hormiga et al., 2011), there are other terminologies used which either overlap or substitute for these. This makes the analysis of their interaction more complex to describe.

2.3.3.1.1 Human Capital

This is almost universally incorporated into such studies (but see Steinfield et al., 2010 who focus entirely on Social Capital). However, the independent variables used to depict Human Capital are not consistent. Examples include education and industry experience; organisational commitment and collaborative management know-how (Crook et al., 2011).

2.3.3.1.2 Organisational Capital

This is often substituted by the construct structural capital (Cater and Cater 2009). Also, parts of Organisation Capital - innovation capital (Madinios et al., 2010) and information capital (Chan and Chao, 2008) - have been separated out and treated as constructs in their own right.

2.3.3.1.3 Relationship Capital

Relationship Capital represents the value generated by employees' relationships with other people inside or outside the organization.

External to the enterprise, such capital is often referred to a Customer Capital. (Edvinsson and Malone, 1997; Maditinos et al., 2010). It is this relationship which bonds customers with an enterprise and, as such, is an important sub-division of Relationship Capital. Without Customer Capital an enterprise is unlikely to survive. In this study external Relationship Capital is preferred because it incorporates relationships with all stakeholders, that is, not restricted to customers.

The meaning of Social Capital itself has been subject to different interpretations and independent variables have included 'trust' (Wu and Leung, 2005), local community support (Kilkenny et al., 1999), networks (Lechner et al., 2006). Indeed Social Capital is seen by some as a separate outcome from Relationship Capital developed from the exchange of knowledge through internal and external networking (Nahapiet and Ghoshal, 1998; Youndt and Snell, 2004). As such Social Capital may be viewed as tacit knowledge which is generated by a combination of Human and Relationship Capital. Consequently it is unclear as to whether Social Capital may be classified as part of Relationship Capital or Organisational Capital and is perhaps best placed with Customer Capital between the two (see figure 2.3.3).

Internal to the enterprise, Relationship Capital also has been subject to differing terminologies. These include organisational culture (Büschgens et al., 2013; Gillespie and Reader, 2017); internal communication (Tench et al., 2017); internal networking (Husain et al., 2016); teamwork / interdisciplinary synergies (Doherty, 2016).

The combination of terminologies is shown in figure 2.3.3. This does not assume any specific sequencing of the three components.

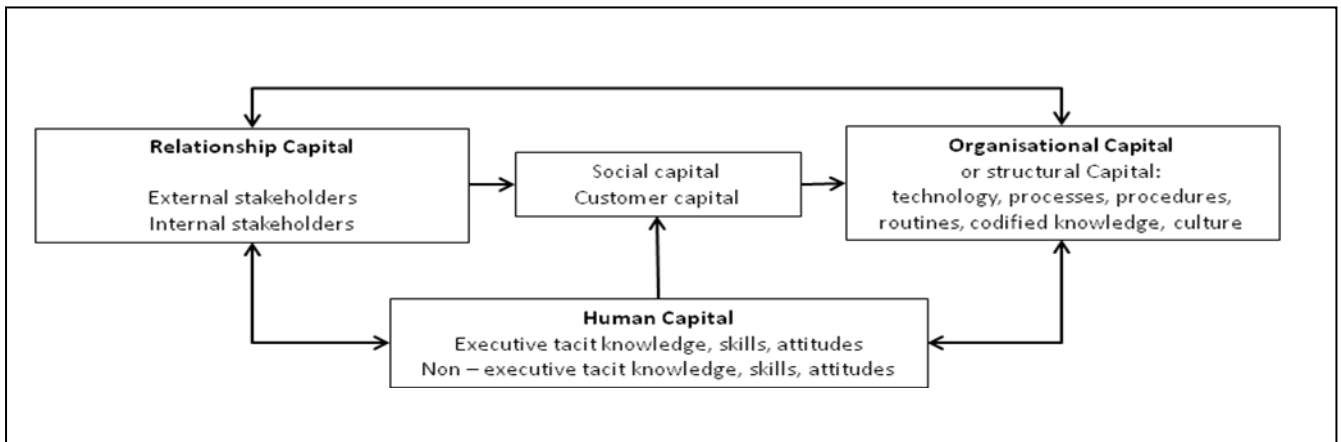


Figure 2.3.3: Non-sequential linkages between key intangibles

Although Human Capital does appear to generate value on its own, it is the combination of intangibles which generates the most value for an enterprise. Both Human Capital on its own and its combination with Organisational and Relationship Capital is discussed in the next section.

2.4 HUMAN CAPITAL IMPACTS ON LARGE ENTERPRISE OUTCOMES

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2.4.1 THE PROBLEM OF OUTCOME VARIABLES

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2.4.1.1 Variations in outcome variables

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2.4.1.2 Univariate verses multivariate data

In addition to the choice of outcome variables, studies have used either a univariate or multivariate option to collect data (Steers, 1975; Richard et al., 2009). The use of univariate outcome variables was noted as early as 1949 when Thorndike criticized the use of just one criterion. Campbell (1973) reviewed the extent of univariate use and identified 19 types of univariate variables. The most widely used were subjective measures of overall performance and objective measures of productivity.

A multivariate approach may yield a more valid outcome variable. Examples include the Business Excellence Model (EFQM, 2017) which uses four outcomes: people results; customer results; society results and financial results. The Performance Prism (Neely et al., 2002) is a second example. This approach covers five perspectives relating to enterprise performance: stakeholder satisfaction; stakeholder contribution; strategies to deliver stakeholder 'value'; key processes to underpin selected strategies and capabilities which enable the processes.

However, there remains the problem of ensuring that individual components of a multivariate variable are converging and correlated. For example a combination of productivity and employee satisfaction may be poorly correlated as pressure to improve the former may result in a reduction of the latter.

Despite these inconsistencies and debates concerning measurement, there has been progress in identifying linkages between the components of Intellectual Capital and enterprise outcomes. These are discussed in the following sections.

Secondly, they were able to conclude that the studies show Human Capital on its own is positively related to organizational performance. This relationship is shown in figure 2.4.2(a) below. The relatively low correlation between Human Capital and enterprise performance ($r=0.1$) is noteworthy and this will be re-visited during the Research Results part of this thesis.

Thirdly, they found that the relationship was higher when outcome variables relating to operational performance were used, as opposed to accounting outcomes or market value. They suggested the reason behind this finding may be due to stakeholders affecting the 'bottom line' by appropriating some of the potential profits.

Lastly they found that the different definitions of Human Capital - the predictor variable - had an impact on results. Studies using enterprise specific elements (Human Capital developed in the context of an enterprise and its markets) revealed stronger links with enterprise outcomes when compared with more generalised Human Capital (personal Human Capital developed outside of an organisational context).

The overall relationships they found are demonstrated in figure 2.4.2(a) below.

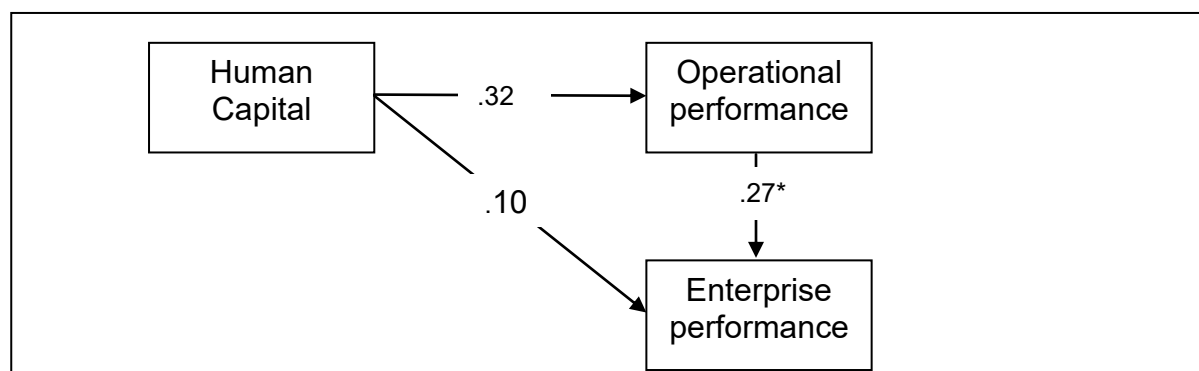


Figure 2.4.2 (a): Relationship between Human Capital and operational and enterprise performance. All path coefficients: $p < .01$ (Crook et.al. 2011)

The second meta-analysis was carried out by Unger et al. (2011) who reviewed 70 articles covering 24,733 enterprises. Their analysis agreed with Crook et al. (op cit) that the definition of predictor and outcome variables, plus the context in which a study was carried out, resulted in differing results.

However, they were also able to conclude that one aspect of HC – entrepreneurship - was a moderator variable that generated the most influence on enterprise success. In their analysis entrepreneurship was defined as ownership and active management of a business. HC was separated into task-related as opposed to less specific HC knowledge such as general education. Task – related HC included a business owner's start-up experience, industry experience, and entrepreneurial knowledge (e.g. exploiting opportunities; raising funds; management of financial, physical and Human Capital). Their results are shown in figure 2.4.2(b) below:

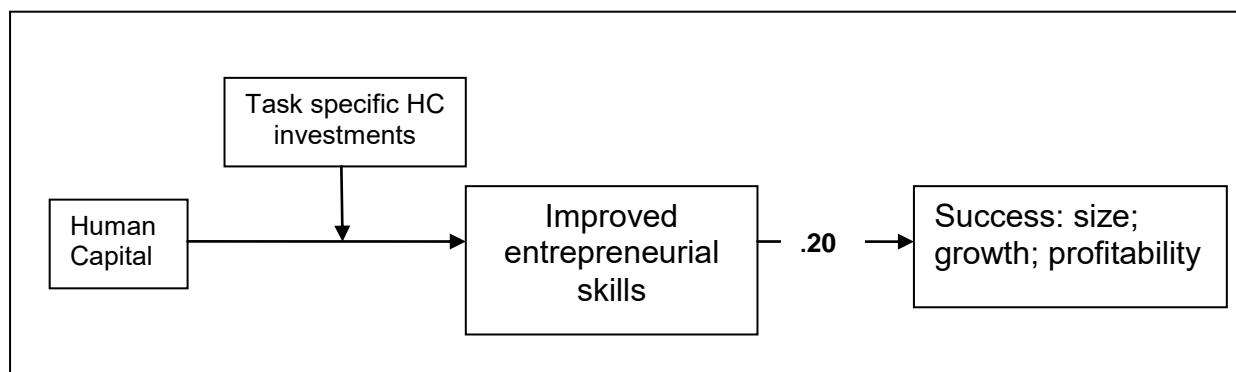


Figure 2.4.2 (b) Entrepreneurial skills as a moderator between Human Capital and enterprise success (Crook et al., 2011)

They were able to demonstrate that task – specific HC investments generated the highest correlations with enterprise size, growth and profitability, although, as with Crook et al, the correlations were modest, the highest being .20.

2.4.3 THE IMPACT OF THE OTHER COMPONENTS OF INTELLECTUAL CAPITAL

As with Human Capital, there have been some studies which identify a relationship between both Organisational Capital and Relationship Capital and large enterprise outcomes. The next two sub-sections briefly outline the impact of Organisational and Relationship Capital on their own. The third subsection describes the impact on large enterprise outcomes from the combination of all three components. It is this level of impact which confirms the need to include all three components of IC in the proposed instrument. Later in this thesis the impact of these components on SME outcomes is discussed.

2.4.3.1 The impact of Organisational Capital

A recent meta-analysis of the impact of Organisational / Structural capital (Kanchana and Mohan, 2017) found a limited amount of evidence that this component of Intellectual Capital can, by itself, impact on the outcomes from large enterprises. In their analysis they cite the work of Bontis et al. (2000) who found a small but positive relationship for service industries within Malaysia ($n = 64$, $\beta = 0.26$, $p < .05$). They also cite Maditinos et al. (2010) who confirmed a small relationship in Greek listed service companies ($n = 47$, $\beta = 0.197$, $p < .05$).

In a separate study, which looked specifically at how individual components of Intellectual Capital impact on enterprise performance, Cater and Cater (2009) concluded that structural capital can indeed have an impact on outcomes and this is by enabling an enterprise to differentiate itself from the competition.

The linkage they proposed is shown in figure 2.4.3 below. This is a simplified version which excludes their findings relating to other components.

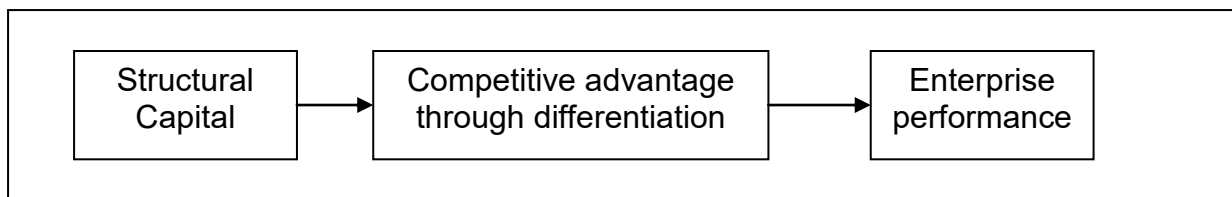


Figure 2.4.3. The impact of structural capital on competitive advantage (Cater and Cater, 2009)

Despite these findings it is likely that the largest impact generated by Organisational / Structural capital is when it combines with other intangibles and this is investigated in more detail below.

2.4.3.2 The impact of Relationship Capital

In sub-section 2.3.3.1 the different terminologies used to describe Relationship Capital were outlined. These include social capital and customer capital. Over the last 10 years there have been numerous studies which have included relationship / social / customer capital as a component of Intellectual Capital, but few which have assessed its impact as an individual construct.

However, one, a meta-analysis by Westlund and Adam (2010), which included national and regional social capital as well as that at enterprise level, enabled them to arrive at an unambiguous conclusion. This was that, at enterprise level, the studies have generated definitive evidence that this category of capital is strongly linked to enterprise performance. In this analysis, specific statistical results are not listed, but examples of the studies they have reviewed include an analysis of the performance of UK 455 enterprises (Cook, 2007) and an analysis of 3073 Chinese enterprises (Zhang and Fung, 2006).

A subsequent meta-analysis of Intellectual Capital and enterprise performance by Inkinen (2015) found only 5 studies out of the 54 included that focussed on Relationships Capital alone. Of these studies, 2 found an influence on overall enterprise success (Steinfeld et al., 2010; Hormiga et al., 2011). The remaining 3 identified positive relationships with knowledge acquisition and innovation.

From the above meta-analyses it can be shown that individual components of IC may well have an independent impact on enterprise outcomes, but, as will be seen in the next sub-section, it is the combination that has the most influence.

2.4.3.3 The interaction between the three components

One common conclusion among researchers (e.g. Inkinen, 2015) is that it is the interaction of the components of Intellectual Capital that influences outcomes the most. The interaction creates mediator variables which, in turn, generate the influence. Four of these mediator variables are now outlined: absorptive capacity; dynamic capability, knowledge management and innovation capability.

2.4.3.3.1 Absorptive Capacity

This has been described as the ability of an enterprise to identify, assimilate, and exploit knowledge coming from external sources (Cohen and Levinthal, 1990). This capability is not a new one and had been discussed earlier in the 20th century in the context of the importance of external information to an enterprise (Mansfield, 1988). However, in the 21st century there has been a rapid increase in information (big data) generated which is external to any given enterprise (Walker, 2014) and can impact on its survival. Examples include the development of the personal computer which

impacted on IBM's performance in the early 1990s (Cusumano, 2015) and the iPhone which affected Nokia's performance in the late 2000s (Laamanen et al., 2016). It follows that enterprises that are capable of identifying external developments, internalising them and then being able to make associated commercial judgements are more likely to survive and perform (Lane et al., 2006; González and Muiña, 2014).

This capacity is thought to rely on the existence of prior knowledge (i.e. personal Human Capital) within an enterprise which can understand the commercial value of new information and so utilise it. Absorptive capacity would not, therefore, be feasible without the channels established by Relationship Capital, the knowledge existing within Human Capital, and the supportive action of Organisational Capital. Absorptive capacity is an important mediator in that without it, an enterprise would be less able to utilise the next two capabilities – dynamic capabilities and innovation.

2.4.3.3.2 Dynamic Capability

This too has a wide range of definitions. The Teece and Pisano study (1994) was one of the first to research this construct. They defined dynamic as 'shifting character of the environment' and capabilities as 'adapting, integrating, and re-configuring internal and external organizational skills, resources, and functional competences' (Teece and Pisano, 1994. p.1). Teece developed his original ideas into 'integrate, build, and reconfigure internal and external competencies to address rapidly changing environments' (Teece et al., 1997, p. 516). This is similar to the definition offered by Helfat in the same year (1997, p. 339): 'the subset of competences/capabilities which allow the firm to create new products and processes

and respond to changing market circumstances'. In 2007 Teece subsequently proposed 'difficult-to-replicate enterprise capabilities required to adapt to changing customer and technological opportunities' (p.1319).

The nature of dynamic capability differs depending on the levels of change existing within an enterprise's environment. Enterprises may be subject to a continuum of change ranging from 'moderate' change to 'high velocity' change (Eisenhardt, 1989). Eisenhardt describes 'moderate' in terms of markets where suppliers, customers and competitors are clear and where change is frequent but predictable. 'High velocity' change is encountered in markets where suppliers, customers and competitors are ambiguous, change is less predictable and business models are ill defined.

The dynamic capability of enterprises differs therefore, depending on the levels of change experienced. Enterprises existing in moderate change environments are found to have change processes which are relatively stable and rely on existing knowledge and logical planning. An example of this is the development of new manufacturing processes found in the pharmaceutical companies (Teece and Pisano, 1994). At the other extreme, enterprises experiencing high velocity change rely on relatively simple approaches using basic rules which, although guiding decision making, do not lock executives into inflexible routines. An example of this is the 'margin-per-wafer-start' rule used by Intel. This was aimed at enabling executives to allocate resources in the light of changing circumstances and resulted in the transformation of Intel from memory chip manufacturer to a microprocessor company (Burgelman, 1996).

The three individual components of Intellectual Capital which influence dynamic capability are not viewed as directly impacting on enterprise outcomes, but influencing the renewal of organisational routines which are part of an enterprise's Organisational Capital. Examples of such routines include purchasing processes, production processes and sales processes. It is the routines themselves that affect the competitiveness of an enterprise (Protogerou et al., 2008).

The debate on dynamic capabilities has challenged some assumptions used by the authors of the Resource Based View. Research into such capabilities has identified commonalities which suggest that some of their elements are similar, that is inimitability and immobility are not apparent. For example similar product development processes have been found in a range of enterprises. Such similarities are often termed 'good practice' or 'best practice' (Ancona and Caldwell, 1992). The similarities are explained by the concept of equifinality whereby executives address a problem from different starting points and levels of information. They take differing pathways in solving the problem, but finish with similar solutions.

The debate on dynamic capabilities has also commented on the ways that such capabilities evolve. These are likely to relate to basic psychological learning mechanisms such as pacing of experiences, repeated practice, ordering of information, learning from mistakes and crises, and codification of experiences.

However, this type of learning is feasible only in enterprises experiencing moderate change where Kahneman's System 2 'slow' thinking (2011) is feasible. Such learning is less feasible in enterprises subject to high velocity change when Kahneman's System 1 'fast' thinking would be required. In these circumstances the

range of variation and options makes it necessary both to choose which aspects on which to focus and use experience plus intuitive thinking with which to make decisions (Olivera and Argote, 1999. Sastry, 1999).

2.4.3.3.3 Knowledge management

This is a third mediating variable. Once again, there are a range of interpretations as to the meaning of the construct. For example, in their analysis of trends in knowledge management research, Akhavan et al. (2016) found 49 variations in the way the construct has been described. One definition which incorporates many of the variations is 'a collection of systematic approaches to help information and knowledge flow to and between the right people at the right time, in the right format at the right cost, so they can act more efficiently and effectively to create value for the organization' (American Productivity and Quality Center, 2017). An examination of the literature identifies two main research streams, the first focussing on capacity, the second on practices. The former relates more to Human Capital and 'people centred' aspects. The latter relates more to Organisational Capital and 'technical centred' aspects.

Inkinen's review of knowledge management practices and enterprise performance (2015) identified a wide range of studies which have linked knowledge management to enterprise outcomes. These include directly influencing the bottom line (Davenport et al., 1998) but also indirectly by generating additional capabilities such as innovation (Soto-Acosta et al., 2014), a capability covered the next sub section. In their review Andreeva and Kianto (2012) also found studies which relate knowledge management to financial performance as well as a range of operational performance

variables including operational excellence; organizational effectiveness and organizational creativity.

2.4.3.3.4 Innovation Capability

This too has a wide range of definitions, one of the earliest being proposed by Schumpeter (1934) which viewed the construct comprising the development of a new product, a new method of production, a new market, a new source of supply or new organisation structure. This proposal is quite similar to the more recent OECD definition which specifies 4 types of innovation: product, process, organisational and marketing (Oslo Manual, 2005 p.17).

There have been studies which indicate that individual components of Intellectual Capital do impact in themselves on innovation. For example Auw (2009) argued that it is primarily the Human Capital element of intangibles that generates innovation through a combination of experience and associated skills. Dyer and Singh (1998) identified Relationship Capital can potentially create innovation by collaborating with partners through knowledge sharing and inter-organisational connections. Wang and Chen (2013) judge that it is Social Capital (derived from Relationship Capital) that has a strong influence on both incremental and radical innovation. In terms of combinations of IC, in their review of the literature Crossan and Apaydin (2010) identified two main streams of research that investigate innovation. These distinguish between process and outcome.

Research into the process of innovation investigates on how it occurs and includes the implementation of improved production methods; changed management

approaches, and the introduction of new technology used to transform business processes. This would imply a combination of HC and OC.

Research into innovation outcomes looks at 4 groupings which they name form; magnitude; referent and type. Form-based outputs include the novelty of new products / services; introduction of new production methods or new technology and how an enterprise improves and delivers value to its customers. Magnitude – based outputs range from small step improvements to transformational improvements. Small step improvements are often encompassed under the construct continuous improvement or Kaizen (Iwao, 2017).

Transformational improvements are often described as breakthrough or disruptive (Preissner and Raasch, 2016). Referent innovations are those which improve on a given industry, market or firm benchmark (Drew, 1997). Type – style innovations distinguish between technical and administrative improvements. An example of administrative improvements is the improvement in entrepreneurial behaviour through improved job design (Jong et al., 2015). Technical improvements include improved use of information and communication technologies (Brynjolfsson and Hit, 2000). The technologies have generated a range of new approaches to contacting customers (e.g. social media); serving customers (e.g. online banking); managing customers (e.g. customer relationship management); organisation integration (e.g. enterprise resource planning; business process re-engineering).

More recently, Chahal and Bakshi (2014) confirm that all three intangibles interact to generate innovation and subsequent competitive advantage. They were more

specific as to the components which are likely to facilitate this. In the case of Human Capital they proposed that staff training and education, experience, and innovative attitude were relevant factors. For Relationship Capital they proposed meeting with customers, soliciting customer feedback and knowledge and generating regular customer interaction. Organisational Capital plays its part through organisational culture (for example a focus on continuous improvement), empowerment and the use of information technology.

2.4.3.4 The importance of mediators

Although the three main components of Intellectual Capital may individually have a direct influence on enterprise outcomes, it is their combination which creates mediator variables that emphasize an impact. It is also apparent that the combinations may differ depending on enterprise maturity and strategy. The main finding of relevance to this study is that Human Capital alone has much less impact than when it is combined with Organisational and Relationship Capital. As such this confirms that it will be important to acknowledge the existence of the latter two and include them as part of the proposed instrument. Lastly it is arguable that Human Capital is the precursor of the intangibles because, in the existence and survival stages of an enterprise's life cycle, it is only Human Capital that exists. The others are developed as the enterprise reaches the later stages of its life.

The combination of these intangibles enables an enterprise's leadership and management team to react purposefully to both anticipated and un-anticipated developments in their market(s). The next sub-section discusses this in more detail.

2.4.4 THE IMPACT OF COMBINING INTELLECTUAL CAPITAL COMPONENTS

As can be seen from the preceding sub-sections, a combination of the three intellectual capital components – human capital, organisational capital, and relationship capital - provides an enterprise with a potential to anticipate and react to change. This potential needs to be exploited by senior management teams as outlined in sub section 2.4.4.5 below. Earlier commentary on the levels of change experienced by enterprises (see sub-sections 2.4.3.3.1 and 2.4.3.3.2) indicated that this has been of concern for senior management teams since the Second World War. (Handsaker, 1943; Coch and French, 1948; Moore, 1956; Bennis, 1965; Schein, 1965; Kogut and Zander, 1992; Henderson and Cockburn, 1994; Teece and Pisano, 1994; Kotter and Schlesinger, 1979; Sawyer et al. 2003; Eisenhardt and Martin, 2000; Protogerou et al., 2008).

Since the 1940s this concern has focused on how best to react to drivers of change which affect market share and / or financial results. These drivers are summarised by Drew and Coulson -Thomas (1997) as relating to 'new technology, new types of competition, economic uncertainty, evolving customer needs, deregulation, globalization and fragmentation of markets' (p. 163). The issue of reaction to change is still of key concern today (Heckmann et al., 2016; Coccia, 2018; Jackson, 2018; Kraft et al. 2018).

The reaction to change by senior management teams has been termed interchangeably 'strategic agility', 'strategic flexibility' and 'strategic responsiveness' (Bernardes and Hanna, 2009; Roberts and Stockport, 2014). However, there have been attempts to make a distinction as outlined below.

2.4.4.3 Reaction to change: Responsiveness

Bernardes and Hannath (2008) argue that 'responsiveness' relates to both agility and flexibility/adaptability, referring to the speed of reaction to changing circumstances. To support their argument they offer definitions of responsiveness from Catalan and Kotzab (2003, p. 669) who include the term 'time-effective'; Chen et al (2004, p. 511) who include 'respond in a timely manner' and Reichhart and Holweg (2007, p.1147) who include 'speed' in their definition. Yang and Liu's definition also includes the need to 'quickly respond'.

The next sub-section reviews agility and flexibility / adaptability in the context of commonly found enterprise strategies.

2.4.4.4 Agility and flexibility in the context of enterprise strategies

In 1978, Miles and Snow described 4 commonly used strategies used by enterprises to compete in their chosen markets. Their typology has since been used extensively (e.g. McDaniel and Kolari, 1987; Zahra and Pearce, 1990; Ghoshal, 2003; Slater et al., 2006; Boulianne, 2007; Shoham and Lev, 2015). The typology is attractive in the context of this study for two reasons. Firstly the model has been applied successfully to medium sized enterprises (e.g. Aragón-Sánchez and Sánchez-Marín, 2005; Gimenez, 1999; O'Regan and Ghobadian, 2006; Blackmore and Nesbitt, 2013; Parnell et al., 2015). Secondly owners / managers are easily able to identify with the four strategies (Raymond and St – Pierre, 2005). As such the typology is a candidate for use as part of the proposed instrument. In the context of this section, this typology is relevant because it includes the "dynamic process of adjusting to environmental change and uncertainty" (op. cit. p. 3)

Miles and Snow's empirical research identified three effective strategies which they defined as 'defender'; 'analyser' and 'prospector'. In addition they identified a fourth ineffective strategy which they named 'reactor'. A potential fifth strategy was subsequently proposed by Blackmore and Nesbitt (2013). They named the fifth approach 'static'.

Miles and Snow divided the strategies into three elements which they termed entrepreneurial; engineering and administrative. The entrepreneurial element focuses on the competencies and values of a senior management team and their choice of products, services and the markets in which to compete. It is this element that would determine an enterprise's agility with the following two relating more to its flexibility. The engineering element reflects the technology used to implement the chosen entrepreneurial approach. The administrative element focuses on the organizational makeup required to balance existing activities with the need for future innovation. Each of the Miles and Snow strategies are now described in terms of the three elements.

The 'defender' strategy maintains a range of products / services with narrow focus. Such enterprises aim to compete in stable industries using competitive prices and/or quality products / services. Their technology is chosen to enable high levels of efficiency and low cost operations. Administratively they tend to be centralized, and cost conscious with simple co-ordination mechanisms. Because of their investment in efficient operations, their management team may find their enterprise difficult to adapt to more extreme changes in the competitive environment. An example of a 'defender' strategy has been that used by BIC, the pen company, in the 1990s. BIC

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everything we do'. It also indicates a focus on the development of new products and brand names: 'throughout our history, we've delivered product innovations' (Proctor and Gamble, 2018). The analyser strategy may be used when a management team aims to move from one strategy to another. An example of this would be Sony's transition from 'defender' to 'analyzer' in the 1990s (Ghoshal, 2003).

The 'reactive' enterprise exhibits no consistent strategy, responding unpredictably to market conditions. Such enterprises lack consistency in their approach using defender, analyser and prospector approaches at different times and so are difficult to characterize at any given time. Consequently this approach has been judged to be unpredictable and ineffective (Conant et al., 1990; Ghoshal, op. cit.). An example of this approach is International Harvester during the 1960s and 1970s. This enterprise moved from being a dominant firm in transportation, agriculture, and construction to a medium-sized truck manufacturer because it erroneously reacted to changes in its environment. In the 1980s, the enterprise sold off its construction and agricultural division to Tenneco. The remaining portion was renamed Navistar International which focuses on medium and heavy duty vehicles (Marsh, 1985).

Blackmore, and Nesbitt (2013) view their proposed 'static' strategic characteristics as being different from those of the reactive strategy. The strategy is relatively predictable and consistent and has been found to function well, at least over their 4 year research period. They found such enterprises rarely to seek new markets and use only a limited amount of marketing. They undertake very little new product / service development and distribution. Their technology is likely to be dated. Their administrative style is typical of family-owned businesses. These are characterised

by slow growth, strong personal influence with minimal administrative control systems and few formalised procedures (Daily and Dollinger, 1992).

The Miles and Snow typology does tend to focus more on internal enterprise adaptability within one type of strategy. This is as opposed to using an agile approach incorporating movement from one strategy to another or the use of more than one strategy in the context of multiple markets. Movement between strategies is feasible, however, and has already been commented on earlier: the Sony example of moving from 'defender' to 'analyzer' and BIC moving from 'prospector' to 'defender'.

In contrast to Miles and Snow, Meredith and Francis (2000) offer a model which deliberately incorporates both agility and flexibility, although their model uses 'agility' in both senses. It specifies four elements on which senior management teams need to concentrate in order to enable both agility and flexibility. The elements are agile strategy (e.g. environmental scanning, strategic commitment); agile linkages (e.g. customer insights, aligned suppliers, performing partnerships); agile processes (e.g. flexible systems, rapid problem solving, rich information systems) and agile people (e.g. adaptable structure; multi-skilling, continuous learning). These constructs can be related to the earlier commentary on proposed instrument components as shown in figure 2.4.4.4 over page.

Agile strategy	Strategic agility
Agile linkages	Relationship Capital
Agile processes	Organisational Capital
Agile people	Human Capital

Figure 2.4.4.4: The relationship between the proposed instrument components and those proposed by Meredith and Francis (2000)

The Meredith and Francis 'agile strategy' reflects the proposed instrument component 'strategic intent'; their 'agile linkages' reflect the (external) 'relationship capital'; 'agile processes' reflect aspects of 'organisational capital' and 'agile people' reflect aspects of 'human capital'.

Agility and flexibility do not occur without the appropriate leadership from senior management teams. Both Miles and Snow and Meredith and Francis include within their models the need for a proactive management team with leadership qualities. The next sub section addresses this issue.

2.4.4.5 Agility, flexibility and leadership

According to Northouse (2018) there are 13 different theoretical approaches to leadership: trait based; skills based; style based; situational; contingency; path – goal; leader – member; transformational; transactional; servant; authentic; team and psychodynamic. These can be diagnosed by self-assessments, psychological instruments, 360 degree feedback or employee surveys (Dulewicz and Higgs, 2005; Oyinlade, 2006; Rubin, 2013; Bergman et al., 2014) and this is carried out when time

allows (Smart, 1999; Marks and Mirvis, 2001). However the circumstances in which proposed instrument is likely to be used are such that it may be impractical always to use such methods on a regular basis because of time restrictions. The Researcher proposes, therefore, to concentrate on leadership behaviours which could be incorporated into the proposed instrument.

Miles and Snow (1978, pp.549 – 550) describe leadership qualities in terms of the choice of products / services and markets in which to compete (entrepreneurial judgements); the selection and updating of appropriate technology (engineering judgements) and creating an organisational structure and processes which meet current demands and facilitate future requirements (administrative judgements).

The Meredith and Francis model (2000, pp. 3 - 8) describes leadership in terms of maintaining wide and deep environmental scanning, willingness to react to environmental challenges and ensuring strong linkages between organisational units (agile strategy); incorporating flexible technologies, continuous improvement in products / service offered, rapid problem solving with avoidance of repeating mistakes and rich information systems (agile processes); strong relationships with customers, suppliers and partners (agile linkages) and adaptable structures aimed at maximising the potential of multi-skilled people accustomed to continuous learning (agile people).

It is envisaged that such descriptions of leadership behaviour (items) could be incorporated into the components of the proposed instrument. Examples would include specifying which of the Miles and Snow strategy or strategies are in use

(strategic intent); the quality of relationships with external stakeholders (external relationships); the design of organisational structure (organisational makeup); characteristics of the workforce (human capital – composition); investment in the workforce (human capital – competencies); approaches to knowledge management and decision taking human capital – internal relationships). The exact range of items chosen will be based on the findings outlined in sub-section 1.2.3.2 (Human Capital Subfields post-1999) and is discussed in sub-sections 5.5.6 (Considerations of Knowledge Required) and 6.4.4 (The Components). The initial range of items may be found as Appendix 1. The integration of these initial items into proposed instrument components is outlined in Appendix 2.

2.5 HUMAN CAPITAL IS CONSEQUENTLY A KEY BUSINESS ISSUE IN LARGE ENTERPRISES

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2.5.1 EXECUTIVES SEE HUMAN CAPITAL AS A KEY VALUE DRIVER

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180 responses from Chief Financial Officers, or equivalent, confirmed that they saw HC as a 'key value driver' but had little understanding of the return on investments made from HC.

More recently, three publications by professional services firms suggest that awareness of HC issues at board level is now more evident. Saint-Aubin (Ernst and Young, 2014) has created a guide for Boards of Directors which focuses on HC risks and opportunities. Bhagat and Kehoe (McKinsey, 2014) surveyed 770 directors worldwide from public and private companies across industries to find out the issues on which they allocated their time. They found that high performing boards saw performance management, organizational health and talent management as being among their important responsibilities. Konigsburg et al (Deloitte, 2017) have also published a report aimed at advising boards of directors how they can influence the enterprise's ability to attract, develop, and retain talent. Here, 'talent' refers to 'every person who affects the success of the organization and drives disproportionate value' (ibid, p. 1).

From these last publications it is possible to surmise that, since the CIPD findings, HC is entering agendas at Board level.

2.5.2 HUMAN CAPITAL ACCOUNTS ARE FOUND IN ANNUAL AND CORPORATE SOCIAL RESPONSIBILITY REPORTS

Board level agendas link with recent developments in specifying the content of Annual Reports and reporting on Corporate Social Responsibility.

2.5.2.1 Content of Annual Reports

In the UK, as part of an Annual Report and Accounts, medium and large enterprises are required by law to provide a Director's Report, including a Business Review (Companies Act, 2006). This requirement applies to the enterprises of interest to this research as a 'medium sized' enterprise is defined in the Act as employing between 50 and 250 people. The Business Review should include a 'fair review of the company's business' (Section 417 - 3a); 'the main trends and factors likely to affect the future development, performance and position of the company's business' (Section 417 – 5a) and 'information about... the company's employees' (Section 417 – 5b). The report can include associated risks and key performance indicators relating to employee matters, but it is only recommended that medium sized enterprises do this on a voluntary basis (Section 417 – 6 and 7).

The Business Review, then, requires a medium sized enterprise to provide a fair review of its workforce and how it affects enterprise outcomes. The instrument to be developed should enable a Board of Directors to do this systematically and comprehensively.

One recent development has been the publication of a book entitled *The End of Accounting and the Path Forward for Investors and Managers* (Lev and Gu, 2016). The authors propose that the traditional reports based on traditional accounting practices should be augmented with one they entitle 'Strategic Resources & Consequences Report'. The content of the proposed 1 – 2 page report would focus issues create a sustained economic advantage and, as such, reflect intangible assets and the Resource Based View outlined earlier.

2.5.2.2 Corporate Social Responsibility Reports

A second opportunity to report on HC comes in the form of an enterprise's report on Corporate Social Responsibility (Nehme and Wee, 2008). Such reports are becoming more widespread and increasingly of interest to stakeholders (KPMG, 2008). As the reports are not compulsory, this opportunity is of less relevance to the current research. Nevertheless one benefit from including these reports in this thesis is to review the content of the guidelines used by 70% of those contributing to the KPMG survey. These guidelines, which are based on The Global Reporting Initiative (2013), recommend such a report should contain information on employment issues, labour relations, health and safety, training and education, diversity and equal opportunities and human rights. In addition to providing information on the preceding issues, enterprises are encouraged to comment on assessments made relating to the people management policies of suppliers.

2.5.3 THE EFFECTIVENESS OF BUSINESS COMBINATIONS CAN BE IMPROVED

The motivation behind business combinations – mergers or acquisitions – is either to benefit from synergies, in time of expansion, or consolidation, in times of recession

(Bernile et al., 2012). The outcomes of such combinations, however, are disappointing. A meta - analysis of outcomes (King et al., 2004) indicates that an immediate increase in market value is common but the longer term effects have no impact or negative impact on such value. The researchers have difficulty in determining the reasons for lack of sustained positive effect, but do hypothesize that financial motivation may not always be a primary consideration for establishing a combination. They suggest that alternate, non-financial motives may be 'the management of environmental or technological uncertainties or the pursuit of growth to decrease organizational vulnerabilities' (ibid, p.197). Other possible reasons for relative lack of success include executive pride, lack of leadership, lack of integration, lack of commitment, imbalance of enterprise size and cultural mismatch (Vazirani, 2012). It is this last possibility that is of relevance to the current research. Research findings are inconsistent in that some do find cultural mismatches to impact negatively on M&A outcomes; others find an unpredicted relationship – the larger the mismatch the better the financial outcome (Stahl and Voight, 2004). Nevertheless recent research indicates that cultural fit could be a key to the success of some types of combinations (Weber and Tarba, 2012).

Accordingly, the Researcher judges that a more detailed knowledge of an enterprise's Human Capital and the nature of internal relationships (Relationship Capital) would be of value to those planning a business combination and this could come from the proposed instrument.

2.5.4 HUMAN RESOURCE EXECUTIVES ARE BECOMING INCREASINGLY PROFESSIONAL

The implementation of the HR profession map (CIPD, 2017) means that HR professionals are now encouraged to progress through 4 bands of competence which integrate 8 behaviours and 10 professional areas. These include providing the organisation with 'meaningful analytics to enable business improvement' (ibid, Service Delivery and Information). As such the modern day HR professional in a large enterprise is regularly tasked with providing information to the senior management team on all aspects of HC growth and retention.

2.5.5 INVESTORS ARE BECOMING MORE INTERESTED IN HUMAN CAPITAL ISSUES

Surveys commissioned by the Chartered Institute of Personnel and Development (CIPD, 2007; 2010; 2017) suggest that investors are cautiously optimistic about information relating to HC. However, there is concern from some that too much disclosure could have an impact on any competitive advantage generated by the effective management of HC. Investors are also critical of the use of statistics without contextual information. They are wary of the current levels of consistency, quality and content of reports (Bernstein and Beeferman, 2015).

The demand from Investors is evident for research by Seagers et al. (2015) on behalf of the National Association of Pension Funds. Their conclusion was that few of the annual reports from the FTSE 100 enterprises they studied had any information on Human Capital that would indicate a material difference in the running of their businesses. Their associated survey of 50 UK investment funds found a demand for Human Capital data which would support the longer term performance of

enterprises in which they invest. Their list of Human Capital issues they would take into account when making investments were: record of health and safety; composition, including diversity (particularly relating to the Board); pay and conditions of employees; record on human rights; level of management pay.

One recent development is the publication of initial research into investors' use of HC data when recommending or making investments (Houghton et al., 2017). Their report confirms that, to date, little research has been carried out in order to find out if and how investors use HR data to assess risk and opportunity. Secondly they found that investors are less likely to use HC data to the same extent as other data, primarily because of perceived poor quality and high levels of complexity. Their sources of information tend to be corporate reports, company web pages, newswire releases, and conference calls. Next they found that, typically, current investor interest in intangibles focuses on the quality of Relationship Capital and certain aspect of Human Capital. HC elements include the standard of a management team; workforce size (for cost purposes); changes in employee numbers; employee – management relations; implementation of training programmes and longer term HC related financial obligations. Lastly they found differences in interest attributed to investors using environmental / social / governance criteria.

These findings are of particular importance in the context of the current study as they will influence the content of the proposed instrument.

2.6 LARGE ORGANISATIONS ARE CONSEQUENTLY ACTIVELY MANAGING HUMAN CAPITAL

Section 2.4 outlined the impact that Human Capital has on enterprise outcomes, both individually and in combination with Organisational and Relationship Capital. As this impact is of importance to large enterprises they invest in the active management of HC through the use of formal people management practices, commonly called Strategic Human Resource Management. The first part of this Section establishes the distinction between Strategic Human Resource Management (SHRM) and Human Capital. The subsequent sections go on to outline those people management practices that aim to grow and retain Human Capital.

2.6.1 THE RELATIONSHIP BETWEEN STRATEGIC HRM AND HUMAN CAPITAL

Strategic Human Resource Management (SHRM) is an approach which co-ordinates the individual components of Human Resource Management and integrates them with enterprise strategy (Wright and Ulrich, 2017). One of the earliest publications entitled Strategic Human Resource Management (Fombrun et al., 1984) distinguished SHRM from earlier, less integrated, components of HRM. However, it was not until the late 1990s that research in the USA and UK began to identify a definite link between people management practices and enterprise outcomes (Becker et al., 1997; Patterson et al., 1997). This link was clear enough for human resource executives to ensure the HRM practices within their enterprise were well co-ordinated and integrated in order to influence the retention and growth of their HC.

Subsequently, in their Future of Work Survey (Guest, 2001) the researchers analysed 835 private sector enterprises and confirmed 'distinct links' between people management practices, employee attitudes and behaviour and organisational outcomes. Based on this study, the researchers proposed a model which links people management practices, employee competence, commitment and flexibility and enterprise outcomes.

The (simplified) model is shown as figure 2.6.1 (a) below:

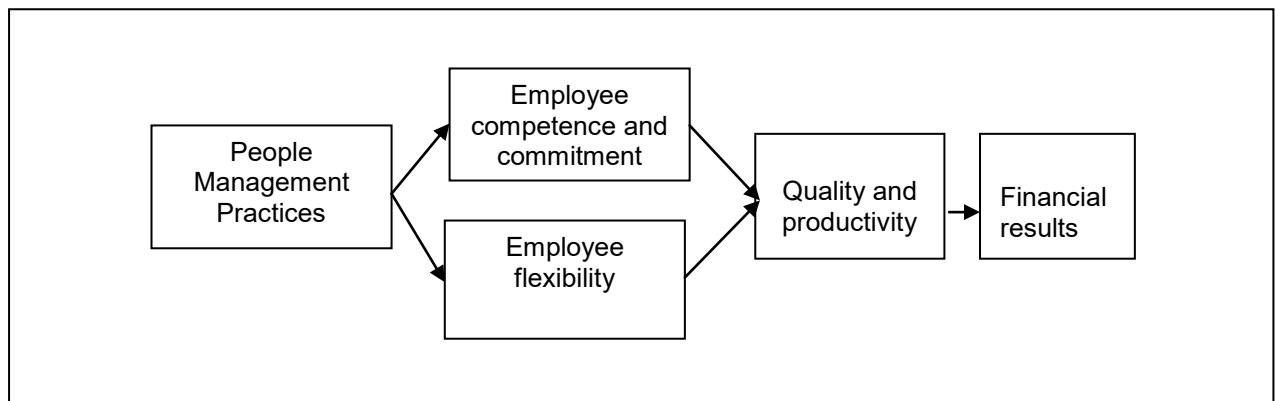


Figure 2.6.1 (a): 'Links' between people management and enterprise outcomes (Guest, 2001)

This model generates two main findings of importance to this thesis. The first is the confirmation that people management practices antecede employee competence, commitments and flexibility (terminology similar to the Researcher's definition of HC). Secondly there is a definite link found between people management practices, employee characteristics with enterprise outcomes.

A later study carried out by the School of Management, University of Bath (Purcell et al., 2008) also identified the likely role of people management as an antecedent.

Their model was more complex than that of Guest and a simplified version is shown as figure 2.6.1 (b) below.

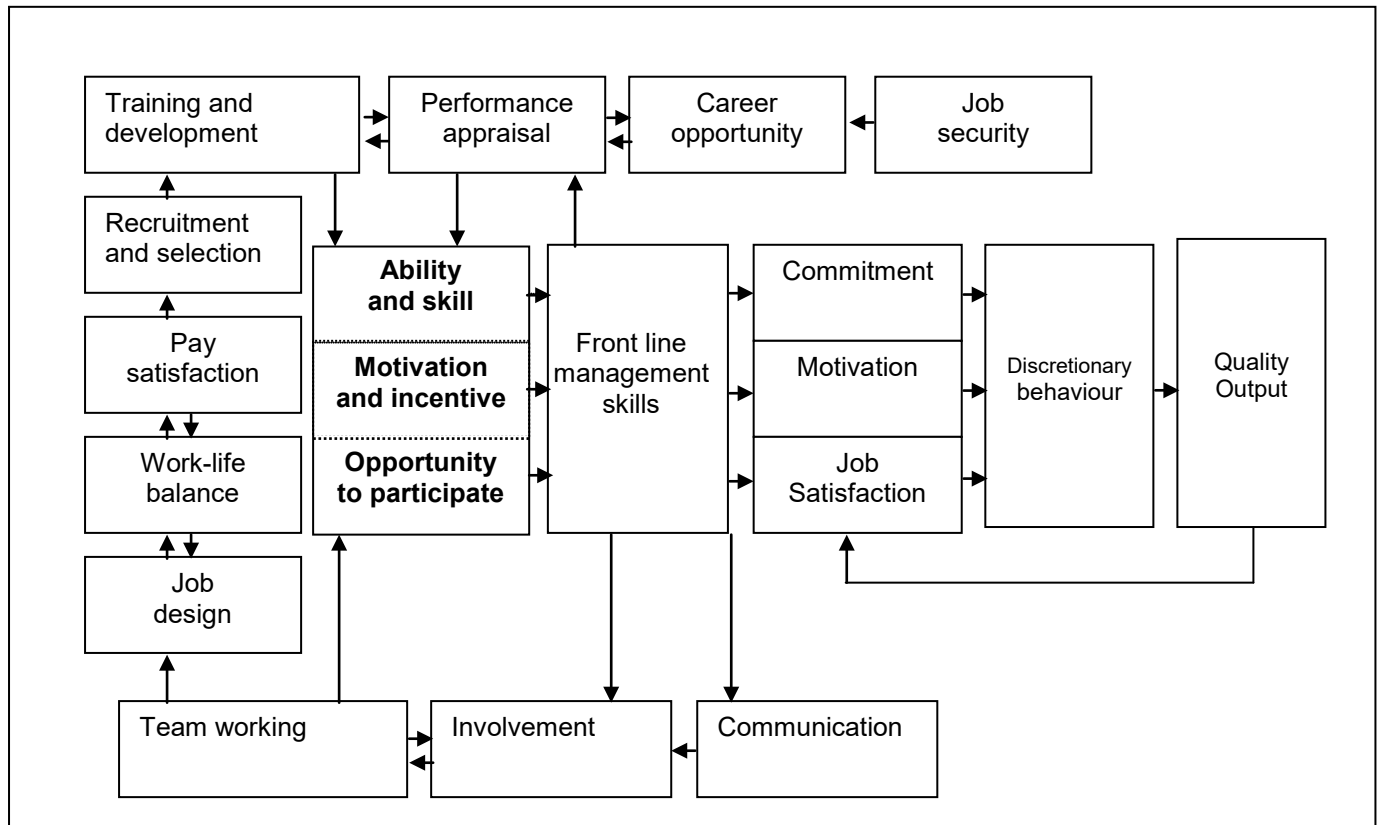


Figure 2.6.1 (b): The Bath model, simplified (Purcell et al., 2008).
People management practices as antecedents to HC

The key features of the model are that HC is depicted as a combination of ability and motivation linked with opportunity to participate. HC is influenced by a suite of 11 people management practices, catalysed by front line management. This combination results in discretionary behaviour which impacts on output quality.

These two pieces of research indicate that, although formal people management practices are not required in order to develop HC, they are an important component of competitive advantage in large enterprises. Consequently it is necessary to explore whether such practices exist in SMEs. This is done later in Section 2.8.2.

Overall, the literature on SHRM covers four broad approaches to systematic people management found in large enterprises (Armstrong and Baron, 2002; 2011): best practice; best fit or contingency; configurational or bundling and multiple HRM. These are outlined in more detail in the following sections. As will be seen later in Section 2.8, effective implementation of these practices can correlate with enterprise outcomes although few research programmes have established cause and effect.

2.6.2 LARGE ORGANISATIONS MANAGE HUMAN CAPITAL BY USING ‘BEST PRACTICE’ HRM

The proponents of ‘best practice’ HRM believe that there are a range of HR practices that will facilitate the establishment of competitive advantage, whatever the enterprise. The literature is full of evidence that appears to support this premise (Pfeffer, 1994; Delery and Doty, 1996; Patterson et al., 1997; Gill and Meyer, 2008; Gooderham et al., 2008; Theriou and Chatzoglou, 2014). Examples of ‘best practice’ include high performance work systems (Appelbaum and Batt, 1994); high involvement practices (Lawler, 1986); high commitment practices (Arthur, 1992) and product quality practices (Ichniowski et al., 1997).

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2.6.3 LARGE ORGANISATIONS MANAGE HUMAN CAPITAL USING 'BEST FIT' HRM

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2.6.4 LARGE ORGANISATIONS MANAGE HC USING BUNDLES OF HR PRACTICES

This approach was initially tested by MacDuffie (1995). The study was based on the work of Bailey (1993) who specified three requirements for HR practices to work. These are that employees should, in the first place, possess relevant knowledge and skills; secondly they should be motivated to apply the knowledge and skills; lastly the knowledge and skills must be essential for influencing enterprise performance (organisation specific HC). MacDuffie demonstrated that, when all three conditions exist, then the bundling of inter-related HR practices can impact on enterprise performance. This has subsequently been demonstrated on a regular basis (Becker and Gerhart, 1996; Delery, 1998; Boselie et al., 2005; Subramony, 2009).

2.6.5 THE CHOICE OF APPROACH DEPENDS ON EMPLOYMENT STRATEGY

In this sub-section the Researcher argues that the 'correct' approach to human resource management depends on the employment strategy of an enterprise and, in reality, that there may be more than one strategy within any given enterprise.

Lepak and Snell (1999) propose four employment modes with associated HRM practices which could be found within any given enterprise. Each mode is based on a (conscious or unconscious) assessment of the value and uniqueness of the human capital in question. Value is defined as 'potential to contribute to the competitive advantage or core competence' of an enterprise (ibid p. 35). Uniqueness is defined as resulting from 'exceptional circumstances or interdependent arrangements' requiring 'more tacit knowledge and expertise' (ibid p. 35).

The two factors taken together enable the formation of a matrix of four quadrants as shown in figure 2.6.5 below.

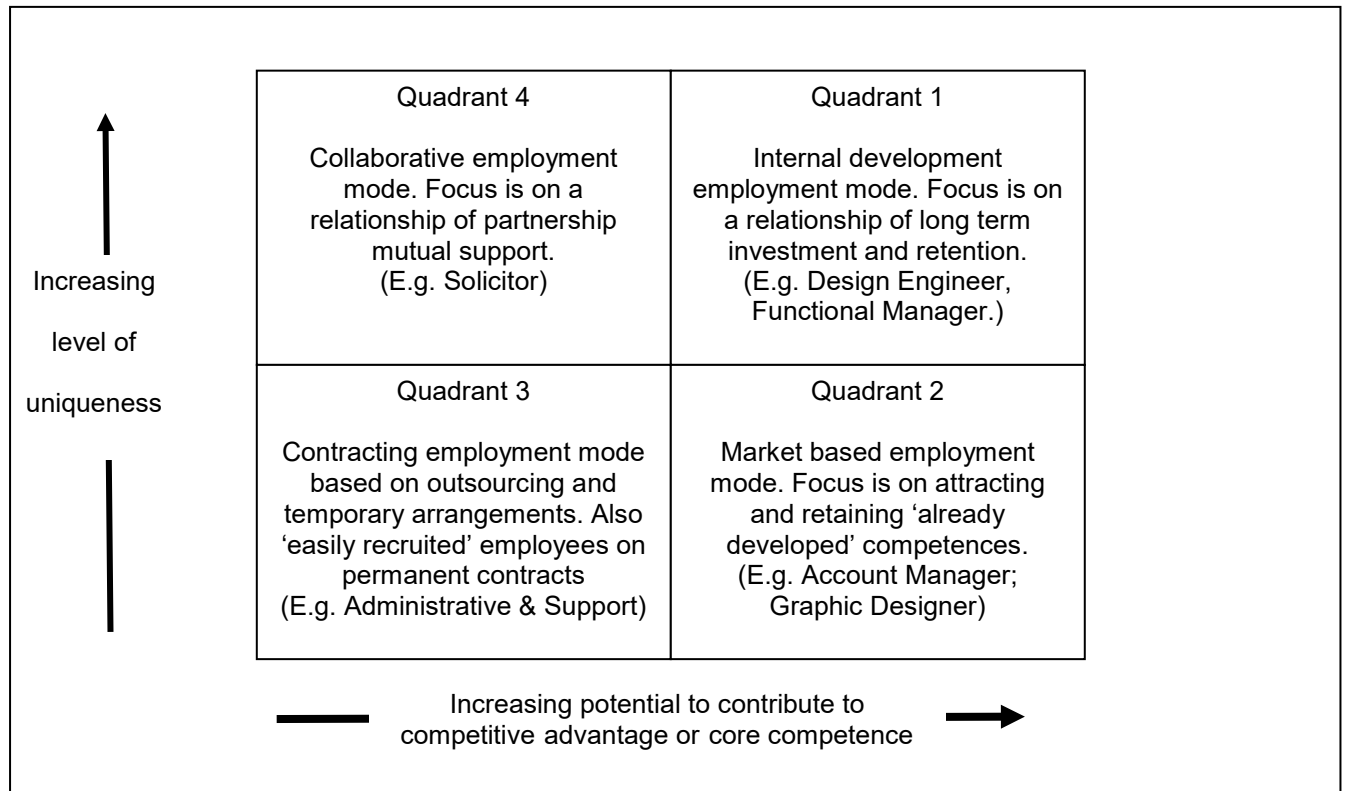


Figure 2.6.5: Four different employment modes. Adapted from Lepak and Snell (1999)

Quadrant 1 is based on knowledge-focused employment with HR practices encouraging employee development and long term commitment. Human Capital within this Quadrant is viewed as core to an enterprise's activities.

Quadrant 2 practices acknowledge the value of employees, but their knowledge / skills are more easily accessed in the recruitment market than those in Quadrant 1. People are seen as valuable enough for formal permanent employment contracts to be used, but it is acknowledged that associated competencies are widely available and, consequently easily transferable. As such employees are not visualised as

offering a way of differentiating an enterprise, and may not be key to competitiveness.

Human Capital in Quadrant 3 has readily accessible knowledge and skills and has limited, if any, strategic impact. The HR practices used within this quadrant include short term contracts and outsourcing.

Quadrant 4 contains Human Capital that is of high value but is not subject to formal long term employment contracts. This could be because the individual(s) is / are more inclined to work as an independent party (e.g. as an alliance or partner) or the knowledge / skills involved are required on an ad hoc basis (e.g. solicitor).

There is one strand of research that focuses on Quadrants 1 and 2 and that is specialising in Talent Management. This is discussed in more detail below.

2.6.6 LARGE ENTERPRISES MANAGE HUMAN CAPITAL USING TALENT MANAGEMENT

The construct Talent Management was first publicised by Chambers et al. with their article 'War for Talent' (1998) and has generated a large number of recent academic and professional articles on the subject (McDonnell et al., 2017). The research streams identify four people management practices which may be of relevance to the establishment of an instrument aimed at assessing HC.

Firstly the literature indicates that the primary focus is on the identification of important roles, not people. Secondly there is an evaluation of which roles are critical

to the sustained competitiveness of the enterprise (Huselid et al., 2005). Thirdly there is a review of the number of people (both internal and external to an enterprise) who are competent or potentially competent enough to perform successfully in the roles. Fourthly, there is a difference in the management practices used to attract, retain and motivate people in such roles when compared to those in more standard (Quadrant 3) roles. The downside to this approach is likely to be employee dissatisfaction with perceived differences in treatment and this could extend to claims from equal opportunities activists.

The importance of talent management is highlighted by Ready and Conger (2007) who identified a perceived lack of talent to fill important positions. The Economist Intelligence Unit (2006) also found Chief Executive Officers spend between 20% and 50% of their time on attracting and retaining key people. Although both of these pieces of research involved multinational enterprises, the thinking behind the research is relevant to this thesis. Participants in the studies outlined above worked on the assumption that there are roles in their enterprises that merit interest from the full executive team.

2.6.7 CONCLUSIONS FROM THE ACTIVE MANAGEMENT OF HUMAN CAPITAL

There are two conclusions to be drawn from the above. Firstly large enterprises invest a significant level of time and money in attracting, developing and retaining Human Capital. If this investment is also found in SMEs, then the proposed instrument should incorporate assessment of such practices. Secondly, the studies relating to talent management demonstrate that this issue is addressed at the most senior levels of a large enterprise. As such it is a full executive team that should be

encouraged to contribute to assessing HC, not an individual executive, for example an HR Manager.

The next Section goes on to address the way that large enterprises assess the fruits of their SHRM practices – the current approaches to assessing HC.

2.7 APPROACHES TO MEASURING HUMAN CAPITAL IN LARGE ENTERPRISES

The last section outlined the active management of HC in large enterprises. This section outlines a selection of common approaches to measuring the results of this. As HC is a part of IA / IC the section starts with the assessment of IA / IC. The approaches chosen to be included in this thesis are those that assess IC holistically; those that separate IC into individual components, including HC, and 'stand-alone' approaches to measuring aspects of HC.

Lastly, the HC factors contained within these approaches are identified for consideration in the initial developmental stages of the proposed instrument.

2.7.1 APPROACHES THAT MEASURE INTELLECTUAL CAPITAL HOLISTICALLY

Examples of the holistic approach which aim to provide a measure of the value of IC, including HC, are outlined below.

2.7.1.1 Price-to-Book Ratio (PB ratio)

The current use of this financial measure is based on the findings of Fama and French (1992) as cited in Pontiff and Schall (1998). This approach values IC as the difference between a company's stock market value and its book value. It is commonly used to support the argument that a high proportion of an enterprise's value is based on its intangible assets. According to Hulten and Hao (2008) enterprises listed on the Standard and Poor's index had PB ratios of 2.0 to 3.5 in the early 1990s. This increased to 3.5 to 7.7 during the 'tech boom' in the late 1990s to early 2000s. During the stock market crash of 2007 to 2008 the ratio did not fall below 1.5.

2.7.1.2 Tobin's q

Tobin's 'q' (Tobin, 1969) is a metric also commonly used where the 'q' is the ratio of the stock market value divided by the replacement cost of assets. Changes in 'q' measure the performance of an enterprise's IC.

2.7.1.3 Economic Value Added

Economic Value Added (EVA: Stern et al., 1995) measures an enterprise's financial performance which is calculated by taking its operating profit and deducting the cost of capital. Changes in EVA indicate whether the enterprise's IC is productive or not. This is a useful approach when measuring IC and well understood by the accountancy profession (Bontis et al., 1999).

These approaches assess IC in the context of stock market valuations or acquisition / merger situations. However, they are not appropriate to measuring HC because they do not break down the IC into constituent parts.

2.7.2 'ALL ENTERPRISE' APPROACHES THAT SEPARATE OUT COMPONENTS

The component-based approach is more relevant because, although not all use the same terminology, one of the components in each relates to HC. The main approaches are listed below. Date order has been used as this helps explain the development of HC assessment. For example the initial 'all organisation' assessments were designed primarily to help organisations survive and compete internationally (Doeleman et al., 2014). The subsequent approaches were designed either to identify ways of improving the creation of IC or to enable the valuation of IC (Marr et al., 2004; Sveiby, 2010).

The 'all organisation' assessments were created as strategic imperatives in response to the need to compete internationally. They are listed below and build on their introduction in section 2.1.3.

2.7.2.1 Deming Prize (1982; 1993)

This seminal approach was originated by the Japan Union of Scientists and Engineers as a result of American efforts to help Japan recover from the ravages of war (Deming, 1951). The award has been developed over the years based on Deming's 14 Points of Management (Deming and Edwards, 1982). As outlined in 2.1.3 the points include aspects of leadership, training and self-development, teamwork and pride in workmanship. This model of management enabled Japanese companies to make 'substantial inroads in Western markets' (Smith and Smalley, 1987, p.6).

The guide explaining how to apply for the prize does not have the same levels of specificity as later models outlined below. However, the most recent prize winner includes a section on 'human resource management' which includes enhancement of skill and competency; enhancement of morale and establishing a continuous improvement culture (Deming Prize, 1996).

2.7.2.2 The Baldrige Award (1987)

This was established in the USA as a response to the positive impact of Deming on Japanese manufacturing industry. The Baldrige Award (Baldrige, 1987) comprises a systematic and comprehensive analysis of an enterprise covering an assessment of leadership; strategic planning; customer / market focus; knowledge management; workforce; processes and results. The

workforce reporting requirement covers capability and capacity; climate; engagement; performance; culture; learning and development (Baldrige Performance Excellence Program, 2013). The prescriptive nature of the award enables direct comparisons between participating enterprises, small, medium and large.

2.7.2.3 The EFQM Excellence Model (1988)

This approach was established by 14 European enterprises (e.g. British Telecommunications, Volkswagen, Ciba – Geigy) in response to both Deming and Baldrige (Smith and Smalley, 1987) and was based on perceived good management practice (Hakes, 2007). The UK Excellence Award is based on this European model. Like Baldrige it is more prescriptive in the sense that it specifies in broad terms the components to be described and assessed. It requires an enterprise to assess its performance based on four 'enablers' and four 'results' (EFQM, 1988; BQF, 1993). The enablers are leadership; people; policy/strategy; resources (including partnerships) and processes. Results cover people, customers, society and financial performance. In 2003 the component 'innovation and learning' was added. The leadership enabler covers the development of mission, vision and values together with levels of personal involvement. The people enabler covers people resource planning; development of knowledge and competencies; levels of involvement and empowerment; levels of dialogue (communication) and reward and recognition. People results cover both 'soft' measures generated by surveys and focus groups and 'hard' statistical measures.

The model has been extensively researched by academics with varying results and conclusions. Some have suggested that successful implementation of the model is linked to improved organisational performance (Bou-Llusar et al., 2005; Tanner, 2005). Others have questioned any meaningful relationship between enablers and results (Corredor and Goñi, 2011).

The different findings may be due a number of reasons including varying sample sizes, varying enterprise sizes, whether participants came from the public or private sector and length between achieving the standard and measurement of outcomes. In addition interpretation of research results has become more difficult as the model was subject to revision in 2003. Many of the studies were completed pre 2003.

Nevertheless, as the overall model is judged by the business community to represent 'good practice' the factors incorporated should be taken into consideration during the development of the HC instrument.

2.7.2.4 The Balanced Scorecard (1992, 2004)

This approach to establishing strategic direction and measuring progress builds on a range of previous research including the Baldrige model above (Kaplan, 2009). Indicators selected by an enterprise's management team measure performance from four perspectives: financial, customer, process and learning and growth (Kaplan and Norton, 1992). Since the original publication of their approach Kaplan and Norton have developed their

learning and growth perspective. They now crystallize learning and growth into the intangible assets of Human Capital, Information Capital and Organisation Capital (Kaplan and Norton, 2004).

2.7.2.5 Commentary on the 'all organisation' approaches

The Deming, Baldrige and UK Excellence approaches are well researched, extensively utilised by a wide range of enterprises worldwide and can result in improved enterprise performance (Porter and Tanner, 2004). They offer guidance on the issues which could be transplanted to the proposed instrument, albeit edited, for use in SMEs. However, they require active involvement of senior management teams over significant periods of time. When opting for an external assessment formal reports take months to prepare and, in addition, there are three to four days of external audit (Porter and Tanner, 2004). An internally managed self-assessment still requires significant investment in time to access the required data and make an assessment. Accordingly the Researcher concludes that these approaches are not appropriate for investors working under cost and time constraints.

In the case of the Balanced Scorecard, the indicators for each perspective are chosen by individual management teams and so they are context specific. This approach cannot therefore be used to compare intangible assets between enterprises. Nevertheless the more up to date classification of intangibles does support the contention that HC can be assessed only by additionally taking the interaction with associated intangibles into consideration.

2.7.3 APPROACHES SEPARATING OUT INTELLECTUAL CAPITAL COMPONENTS

These approaches do not cover 'all organisation' issues but focus primarily on Intellectual Capital. They do, however, identify and assess individual components including Human Capital.

2.7.3.1 The IC Audit

The Brooking approach to IC audit (Brooking, 1996) covers four IC components: market assets (covering intangibles such as brands, customers and licensing agreements); intellectual property assets (including copyright and patents); infrastructure assets (technology and processes), and human centred assets which include factors such as expertise, problem solving capability, creativity, entrepreneurial and managerial skills. The human – centred audit is based on a 'mix of methods which will ... include interview, test and assess, knowledge elicitation, self assessment, manager assessment, peer review and track record assessment' (ibid p.113).

Brookings's approach to IC audit is comprehensive and aimed at establishing 'all the intangible assets in a company and documenting their existence, current state and maybe their value' (ibid p. 83). However, the comprehensiveness of her approach requires time both to plan the assessment and implement it (ibid pp. 82 – 129). As such the Researcher concludes that the approach is not appropriate for carrying out an assessment of HC within medium sized enterprises in the context of tight time pressure.

2.7.3.2 Skandia IC Navigator

The Skandia IC Navigator (Edvinsson, 1997) included up to 164 indicators segmented into five components – financial, customer, process, renewal and development, and human (Edvinsson and Malone 1997). Human Capital included the ‘knowledge, skill and experience of a company’s employees and managers’ (p.34). The specific indicators for each of the components are selected by individual management teams to reflect their enterprise’s strategic intent. As such this approach suffers the same critique as that of The Balanced Scorecard – the indicators are context specific and so are unlikely to be able to be compared between enterprises. Skandia is now part of Old Mutual (Kallifatides and Nachemson-Ekwall, 2010) and it is not clear if the enterprise still uses Intellectual Capital supplements to their main annual report.

In the past however, Individual Skandia companies typically used indicators such as number of employees, levels of employee turnover, average years service, number of graduates, male / female ratio (Mouritson et al., 2001).

2.7.3.3 The IC Index

The IC Index (Roos et al., 1997) measures individual components of IC and then creates a single index which can be correlated with changes in the market. The authors build on Skandia’s approach to measuring IC which they divide into HC, ‘the soul of the company’ (ibid p 34), and Structural Capital. HC is then divided into competence, attitude and intellectual agility. Structural Capital is divided into relationships, organisation, renewal and development.

The specific indicators for each component, chosen by individual management teams, are context specific and are aimed at comparing increases in value within a given enterprise year on year. As such, any value to investors would be in the form of trend analysis over the years as opposed to a 'one-off' assessment and comparison with other enterprises.

2.7.3.4 The IA Monitor

The IA Monitor (Sveiby, 1997) is based on three classes of intangible assets: internal structure, external structure and people's competence. Internal structure comprises systems, technologies, methodologies, processes and tools that are specific to the organization. External structure comprises market-related intangibles that enable an organization to survive and prosper in the marketplace. In terms of competence, Sveiby distinguishes between employees who are involved in the planning, production and marketing / sales of products and services and those who work in support functions such as accounting and administration. The enterprise's management team select their own indicators based on business strategy and categorise them into those representing growth and renewal, efficiency and stability. As with the IC Index above, the choice of indicators specific to an enterprise minimises the possibility of inter-organisation comparison.

2.7.3.5 Commentary on the component based approach

The component-based approach creates a more detailed analysis of IC, including Human Capital, within an enterprise. Disadvantages of using components include the difficulty in comparing between organisations due to

differences in the selection of components, and associated indicators, together with the generation of significant amounts of data, making results less easy to communicate.

2.7.4 APPROACHES THAT EXCLUSIVELY ASSESS HUMAN CAPITAL

The following approaches assess aspects of Human Capital exclusively.

2.7.4.1 Best Companies

The Best Companies approach (Levering and Moskowitz, 1993; Levering et al., 1993) is based on qualitative research. This covers written information about nominees, impromptu conversations with employees and formal interviews with supervisors, managers, human resource executives and CEO or equivalent (ibid: 1993, p. xiv). The approach is aimed at measuring employee engagement. This is defined as covering measures of leadership, employees' satisfaction with their organisation, levels of personal growth, impact of the organisation on society, satisfaction with pay and benefits, levels of wellbeing and relationships between managers and those managed (Best Companies, 2017). As such the approach covers some of the likely factors associated with HC / IC, but not all of them. For example it does not include organisation integration or external relationships.

2.7.4.2 Best Workplaces

This approach is also based on the original research by Levering et al. (1984) According to the book which describes the Best Workplaces methodology (Burchell

and Robin, 2011) their model was developed by Robert Levering and Amy Lyman during in the 1980s and 90s (ibid p. 4). Their current approach measures the culture and levels of trust within enterprises. These cover the dimensions of credibility, respect, fairness, pride and camaraderie. This approach does also not include all the likely factors associated with HC.

2.7.4.3 Investor in People (liP)

Investor in People is a UK standard which aims to improve people management practices within enterprises. These include SMEs (Smith et al., 2002). The sixth and most up to date standard (Investors in People, 2017) consists of a combination of (1) leadership (establishing clear objectives; living defined values; establishing a culture of trust and empowerment); (2) support (structuring work; managing, recognising and rewarding performance) and (3) improvement (building capability; focussing on continuous improvement and creating sustainable success).

The factors used by liP complement the concept of HC, but lack some of the other intangibles without which HC is unlikely to flourish, for example organisation integration and external relationships.

The Cranfield University Centre for Business Performance was commissioned to assess the impact of the standard on managerial performance. The resulting study used case study, survey and archival research to assess the impact. They found that implementation of the standard 'leads to better perceived non-financial and financial performance

resulting in higher profitability as shown in published accounts' (Bourne and Franco – Santos, 2010, p.2).

2.7.4.4 Human Capital Effectiveness Reports (PwC Saratoga, 2013-16)

The Human Capital Effectiveness Reports (PwC Saratoga 2013 -16) provide a wide-ranging source of benchmark data across both industry sectors and geographical locations. There are three levels of analysis – generic, sector and organisation specific. Metrics include workforce productivity, employee engagement, diversity, succession planning, quality of recruitment, employee rewards, employee turnover, spans of control.

Although entitled 'Human Capital' the reports for 2012-13 and 2013-14 assessed both the effectiveness of Human Resource Management practices (e.g. hiring process) as well as some aspects of HC as defined in the current study (e.g. employee productivity; voluntary employee turnover; employee diversity).

2.7.4.5 The Human Capital Monitor (Mayo, 2001)

The Monitor visualises Human Capital under three components: People as Assets; People Motivation and Commitment; People Contribution to Added Value. Assets are measured by multiplying employment costs with four factors - capability, potential, contribution and values alignment. Motivation is measured by five factors – leadership, support in the workplace, nature of the workgroup, culture of learning and development, and the system of reward and recognition. Contribution is measured by organisation-wide indicators of value, both financial and non-financial.

This approach covers many of the factors relating to the definition of HC used in this study. However, it excludes some of the factors (organisation integration; organisation relationships) and implementation is likely to require a significant amount of management time to implement and sustain. As such it is likely to be aimed at larger enterprises. This possibility is supported by Mayo's examples of good practice: Dow Chemical (54,000+ employees); Celemi WM Data (8000 employees at the time of publication), Systematic Denmark (400+ employees). Consequently it is unlikely to be used by investors working under time constraints when carrying out due diligence.

2.7.4.6 Human Capital Scorecard (Fitz-Enz, 2000)

The Human Capital Scorecard was first proposed by Fitz-Enz (2000, p. 45) and is described in more detail on the American Management Association website (2017). Here four quadrants are described: Acquisition; Maintenance; Development and Retention. Each quadrant should contain 'cost, time, quantity and quality measures to the extent practical and possible' (ibid p.1). Acquisition includes both employed and 'rented' individuals, the latter including contingency employees. Proposed metrics include cost per recruit, time to fill jobs, number of new recruits, number of replacements and quality of new recruits.

Maintenance is the term used for pay and benefits and metrics include total workforce cost, average pay per employee and cost of benefits. These would be specified in the context of operating expenses and or overall payroll.

Development would consist of all activities which improve HC within an enterprise. As such this is seen to be difficult to tie down accurately but possible metrics include training cost as percentage of payroll or average number of hours of development per employee.

Retention focuses on keeping hold of the talent which enables an enterprise to survive and compete. Proposed metrics would include levels of turnover of employees in key positions.

2.7.4.7 Human Capital Index (Pfau and Kay, 2002)

The Human Capital Index was the approach researched and used by Watson Wyatt, the global human capital consulting firm. The Index was based on responses from 400 publicly traded companies in the United States and Canada (Pfau and Kay, 2002). The Index was correlated with objective financial measures (e.g. returns to shareholders) and it was found that improvements in the Index were strongly associated with increase in market value. Subsequent research based on responses from 750 companies in Europe and North America suggested a causal relationship between levels of HC and financial performance.

Watson Wyatt is now part of the Willis Towers Watson professional services consultancy. The Index rated a company's key human resource practices that affect the bottom line. Key areas measured were recruiting excellence -

companies that minimize the time it took to get employees up to speed;
collegiate flexible workplace - egalitarian, flatter-structured organizations;
communications integrity - communications are open and two-way; clear
rewards and accountability - companies with stock-based reward and who
weed out poor performers quickly and unambiguously.

The Willis Towers Watson website no longer hosts the Human Capital Index,
and currently it is not in use (Sridhara, 2017).

(The name is currently being used by the World Economic Forum (2017) to
portray a country's ability to utilise its national human capital.)

2.7.4.8 The Human Capital Scan (Nalbandian et al, 2004)

The six factors in the Scan reflect research into 300 studies and 1000
enterprises (Nalbandian et al, 2004). It covers people (talent), work
processes, managerial structure, information and knowledge, decision-
making and rewards. The people element includes qualifications; general
and firm specific skills and competences.

As well as contributing to the identification of the six factors, the studies
chosen had to relate the independent variables to objective end measures.
These measures were defined as 'no matter who did the measuring, the
same result would be found' (p. 236). Higher results for their 'people' and

‘information / knowledge’ factors were reflected in increased sales per employee. ‘Work process reorganisation’ reflected higher return on assets.

2.7.4.9 The Workforce Scorecard

The Workforce Scorecard (Huselid et al., 2005) offers a framework that assesses understanding of the influence of HC on organisational performance plus and assessment of how active is the involvement of the senior management team. It advocates the use of a small number of workforce measures which recognise the relationship between workforce success and business outcomes. It specifies the need to ensure ownership and co-ordination of the measures is by a specified individual or team. The authors do not specify the workforce measures due to the ‘academic and practitioner literature on factors that determine firm success (being) voluminous’ (ibid p.68). However, they do propose the elements of a scorecard should include and assessment of the understanding and support by the workforce of the enterprise’s strategy; workforce competencies to execute the strategy; leadership and workforce behaviour that lead to the achievement of enterprise strategy and an assessment of how the workforce has helped the accomplishment of strategic objectives.

2.7.4.10 Commentary on the approaches exclusively assessing Human Capital

These approaches that focus exclusively on assessing HC appear to the Researcher to require sophisticated organisational analysis in order to obtain a valid result. They appear to be focussed mainly on large enterprises likely

to employ Human Resource and / or Administration executives. As with the 'full organisation assessments' above, the Researcher concludes that, because of time constraints, these approaches are not appropriate for medium sized enterprises seeking additional finance, nor for investors. However, it is feasible to extract key components from the above examples which may be of relevance to the proposed instrument. These are outlined below.

The Researcher concludes that, based on the above research, it is defensible to consider the factors used by large enterprises as a basis for the development of an instrument measuring HC in medium sized enterprises.

2.7.5 FACTORS USED BY EXISTING APPROACHES

Based on the approaches outlined above, it is possible to identify those factors relating to HC and associated intangibles that could generate in an initial 'long list' of items from which the proposed instrument can be formed. These factors are outlined in the next sub-sections and shown below as table 2.7.5.

In creating the table the Researcher has examined specific instruments (e.g. Human Capital Index, Watson Wyatt 2002; 100 Best Companies to work for in America, Levering et al, 1993) or has referred to associated literature (e.g. Intellectual Capital, Brooking 1997; The Strategy Map, Kaplan and Norton 2004; Human Value of the Enterprise, Mayo 2001).

The development of an instrument for enabling investors
to assess the quality of human capital in medium sized enterprises

	Strategy Goals	Leadership CSR Entrepreneurship Intrapreneurship	External Relationships Stakeholders	Composition Diversity	Organisation makeup Infrastructure	Competence Expertise Skills Capability	Commitment Engagement Alignment	Internal Relationships/ Culture Wellbeing Values	Adaptability Improvement Innovation Creativity Development	Costs Worth	Risks	Outcomes
Deming Prize	✓	✓	✓		✓	✓	✓	✓	✓			✓
Baldrige Award	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
UK Excellence Award	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Balanced Scorecard	✓	✓	✓		✓	✓	✓	✓	✓			✓
IC Audit	✓		✓		✓	✓		✓	✓	✓		✓
Skandia IC Navigator	✓	✓	✓	✓	✓	✓	✓		✓			✓
The IC Index					✓	✓		✓	✓			
The IA Monitor	✓		✓		✓	✓						
Best Companies		✓				✓	✓	✓	✓		✓	
Best Workplaces		✓				✓	✓	✓	✓		✓	
Investor in People		✓			✓	✓	✓	✓	✓			
HC Effectiveness Report	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Human Capital Monitor	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Human Capital Scorecard		✓				✓		✓	✓			✓
Human Capital Index	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Human Capital Scan		✓	✓		✓	✓	✓	✓	✓		✓	✓
The Workforce Scorecard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓

Table 2.7.5. Analysis of current instruments' content

2.7.5.1 Strategy

The linkage of HC / OC / RC to an enterprise's strategic intentions is specifically listed in many approaches, and inferred in others. If this element were to be linked with dynamic capability, then strategic adaptability would be an important aspect to incorporate into the proposed instrument.

2.7.5.2 Human Resource Management

Although not specifically included in the table above, some approaches (e.g. Human Capital Effectiveness Report by PwC Saratoga) conflate HRM with HC. Larger enterprises are likely to have policies, procedures and staffing aimed at ensuring the development and retention of HC. However, in the past, in SMEs, there has been a wide variation in levels of HRM implementation (Cassell et al., 2002). Consequently many enterprises of this size may not have had such well developed facilities. However, more recent research carried out by Sheehan (2013) suggests that formal HRM practices are becoming more widespread and so the inclusion of HRM items in

an instrument for assessing HC in medium sized enterprises should be a consideration. This is discussed in more detail in Section 2.8.

2.7.5.3 Leadership

Assessment of leadership generally concentrates on the existence and emphasis of enterprise mission, vision, and values and personal involvement in their implementation and maintenance.

A second element covers the development of trust, but, as well as relating to leadership, this can be incorporated into corporate social responsibility or the engagement / commitment / alignment factor.

Thirdly entrepreneurship / intrapreneurship is a factor that is incorporated into some existing instruments and, according to Vecchio (2003), this is something which is closely associated with the concept of leadership.

2.7.5.4 External relationships

External relationships are separated into those concentrating on customers and those concentrating on other stakeholders such as suppliers. The approaches covering HC alone do not include these factors but they are seen as critical by those approaches covering intangible assets more holistically.

2.7.5.5 Workforce capacity / composition

Workforce capacity / composition is specifically mentioned in some approaches listed. It is likely to be included in many of the others by virtue of the fact that all take into consideration the size of the workforce and / or issues of diversity.

As revenue per employee is a common performance indicator found within existing instruments, and less likely to be influenced by subjective judgement, this factor is a strong contender for inclusion.

2.7.5.6 Organisation makeup

The issue of organisation makeup / structure / infrastructure is also included in some approaches. The importance, in the context of an assessment of HC, is that the way the enterprise is designed could have an influence on the effectiveness of its workforce.

Linked to the structure is an assessment of the importance of business processes. This factor is particularly evident in 'all organisation' approaches which were developed in the context of large enterprises.

Reporting structures focus more on organisational levels while processes focus more on internal supplier – customer chains. As such an emphasis on process management may affect the quality of internal relationships.

The concept of viewing an enterprise as a series of business processes (as opposed to a series of departments / functions) is not a new one, being a part of the quality revolution in the 1980s (Davenport and Short,1990.). However, the concept of

defining a standardised and semi-permanent set of organisation relationships is not necessarily appropriate for medium sized enterprises that need to continually react to change (McAdam, 2000). The relevance of this factor should be tested during instrument development.

2.7.5.7 Workforce competence

Competence is a key component in all approaches and described variously as knowledge / skills / expertise / capability. A distinction is made between generic skills (e.g. management competence) and organisation specific competence (e.g. using tailored information systems).

2.7.5.8 Workforce commitment

Commitment / engagement / alignment is a further key component, either specified or inferred. There are differing definitions of these terminologies but, taken as a whole, they are aimed at reflecting the levels of effort, tenacity and stability found within a workforce.

2.7.5.9 Internal relationships

Internal communications between different parts of an organisation and between management and workforce is a common factor. This is also sometimes integrated into the factors covering trust / commitment / culture. It is difficult to see an instrument measuring HC not incorporating this factor.

2.7.5.10 Workforce adaptability

Assessment of a workforce's adaptability / development / innovation / continuous improvement is a common factor and linked to an enterprise's absorptive capacity and dynamic capability.

2.7.5.11 Workforce risks

Workforce risks are also mentioned in some approaches, but they are not the same as those incorporated into due diligence checklists. The due diligence risks should be included in an instrument for completeness. Those covered by the approaches listed above relate more to risks associated with delegating decision making and encouraging innovation.

2.7.5.12 Workforce costs (investments)

Although not many approaches specifically include workforce costs as a key element, in the context of the proposed instrument it is an important factor. Investors already focus on a range of financial statistics before making an investment (Slater, 2017). During due diligence the costs of pay and benefits of both Board level executives in particular and the workforce in general are required (Harroch and Lipkin, 2017). It is necessary in the context of content and face validity to include these issues in the proposed instrument but more likely as 'investments' as opposed to 'costs'.

2.7.6 CONCLUSIONS FROM THE MEASUREMENT OF HUMAN CAPITAL IN LARGE ENTERPRISES

From the above it is clear that large enterprises have access to well developed approaches which enable the assessment of intangible assets including HC. It is also feasible that some of the factors used by these approaches may be suitable for inclusion in the proposed instrument.

However, these approaches appear to require significant investment in time and money to implement and maintain.

The next section changes focus to review the extent to which the findings relating to large enterprises can be extrapolated to SMEs.

2.8 SMEs INCREASINGLY ACKNOWLEDGE THE IMPORTANCE OF HUMAN CAPITAL

It has been established that large enterprises invest in HRM / SHRM practices in order to grow and maintain HC and there are a number of approaches they use to assess the quality of their IC / HC and associated outcomes. This section determines the extent to which the findings relating to large enterprises can be extrapolated to SMEs. In previous Sections the studies cited have either specifically focussed on large enterprises (Bontis, 1996) or have used large samples which have included a majority of large enterprises (e.g. Skaggs & Youndt, 2004; Ployhart et al., 2009). The studies selected in this Section focus specifically on SMEs.

2.8.1 SMEs DIFFER FROM LARGE ENTERPRISES

This section outlines the ways in which SMEs differ from that of larger enterprises and may not be considered as smaller versions of large enterprises (Hill et al., 2002; Nissilä et al., 2004; Yew Wong, 2005). In order to do this the Researcher searched for studies that had been carried out on resource-based strategic frameworks used by SMEs. There are numerous studies that focus on specific aspects, for example knowledge sourcing strategies (Brunswicker and Vanhaverbeke, 2015) and lean principles (Zhou, 2016), but few were found that used a comprehensive framework. One study that did so (Rangone, 1999) identified 7 components based on 14 case studies. The components were strategic intent; internally generated funds; physical assets; human resources; organisational resources (internal and external); skills / know how / competencies and brand / reputation.

In another study a review was made of the use of change management tools within 72 European SMEs (Ceptureanu, 2015). They found the McKinsey '7S framework', (Waterman et al., 1980), had been used in SMEs within 7 different countries. The 7S framework was based on research into large enterprises, but some of the components are similar to those used by Rangone. The 7S components are Strategy, Structure, Systems, Skills, Staff, Style and Superordinate Goals. A comparison of the two approaches is shown in Table 2.8.1.

Rangone (1999) framework for medium sized enterprises	Waterman, Peters and Phillips (1980) framework for large enterprises
Strategic intent	Strategy
Internally generated funds	
Physical assets	
Human Resources	Staff
Organisational Resources	Structure / Systems
Know-how / Skills / Competencies	Skills / Leader Style
Brand / Reputation	Superordinate Goals

Table 2.8.1 Comparison of critical organisational factors for SMEs and large enterprises.

The following comparison of SMEs and large enterprises is based on these two frameworks.

2.8.1.1 Strategic intent

The strategic behaviour of SMEs has been shown to differ from large enterprises both in terms of overall strategic orientation (O'Regan and Ghobadian 2006; Kumar et al., 2012) and specific marketing strategy (Parnell et al., 2012).

Overall strategic orientation is based on how an enterprise changes its operating environment in order to gain competitive advantage (Hambrick, 1983). Rangone (op cit) exemplified this by contrasting 'mono-dimensional' strategic behaviour and multiple-dimensional strategic behaviour. Mono-dimensional behaviour is described as focussing on one capability: innovation, production or marketing.

Multiple-dimensional strategic behaviour is based on using all three key capabilities: innovation and production and marketing.

In another study Kumar et al. (op. cit.) found that large enterprises are more likely to use the "prospector" orientation while SMEs are more likely to use a "defender" or "reactor" orientation (Miles and Snow, 1978). This may well be due to the unpredictable environment in which most SMEs operate where longer term strategic thinking is less feasible. Taking specific marketing strategy in to consideration, Parnell et al. (op cit.) found that SMEs tend to focus on differentiation within a niche market with decision making dictated by a small number of owners / senior managers. Larger enterprises are more often likely to operate in diverse markets with their planning and decision making involving multiple stakeholders.

The implications of these findings are that it would confirm the findings relating to large enterprises. These are to include issues relating to business strategy within an instrument aimed at assessing HC: the strategic intent of an SME is likely to impact on the optimal characteristics of associated HC.

2.8.1.2 Internally generated funds

Internally generated funds (retained profits / earnings; sale of assets; reduction in working capital) were identified by Rangone as meeting the tests of resource-based criticality: Value, Rarity, Imperfectly Imitable and Non-substitutable (Barney, op.cit. Wernerfelt, op. cit.; Prahalad and Hamel, 1990). The 7S approach does not specify finance as a key discriminatory factor, but does include financial control as one of the important skills (op. cit. p.24). As such it would be reasonable to assert that the level of use of internally generated funds is one aspect that differentiates medium and large sized enterprises. However, this differentiation is of little relevance to the current study because financial assets, by definition, not included in definitions of intangible assets.

2.8.1.3 Physical Assets

Physical Assets are not included in the 7S framework, but are specified by Rangone as potentially meeting the tests of sustainable competitive advantage. Examples she offers are specialist laboratory equipment and processing machinery. These assets are not relevant to the current study because physical assets, by definition, are not intangible assets.

2.8.1.4 Organisational Resources

2.8.1.4.1 External Relationships

These are specified by Rangone as a significant component of SME resources which withstand the tests of resource-based criticality. This component links with that of superordinate goals found in the 7S framework. Examples of such goals include

‘universal service’; ‘customer first’; ‘service quality’ (based on Waterman et al., 1980). Although an important resource for an SME, it is unlikely that external relationships distinguish SMEs from larger enterprises. This is because large enterprises place a high level of importance on external relationships by investing in supply chain management (Leuschner et al., 2013) and customer relationship management (Dibley et al., 2016).

Nevertheless, external relationships should be another factor to be taken into consideration for the proposed instrument.

2.8.1.4.2 SME Structure

SME structures would be expected to differ from larger enterprises because SME size (headcount) means that they are generally less complex to organise. Indeed Rothwell (1984) has suggested that an SME would have the natural advantages of less bureaucracy, better internal communications and speedier adaptability. Nevertheless the issues relating to organisational structure appear to be similar to those found in studies of larger enterprises. For example an expectation would be that SMEs would use a flatter structure compared to larger enterprises. This is not necessarily so with some research indicating that there is a range of levels found within SMEs (Freel, 2000). Secondly the functional areas of an SME (Day, 1994) would be expected to enjoy better relations with less ‘silo mentality’ (Ensor, 1988). Once again Freel (op. cit) found this was not necessarily so. Indeed, research by Serenko et al. (2007) indicates that the structure of SMEs employing larger numbers (150+ people) becomes more formal with associated communication issues due to ‘weaker interpersonal relationships and lower trust’.

2.8.1.4.3 SME Systems

Systems developed by SMEs have been found to be less well defined when compared to larger enterprises with approaches such as ISO9000, business process management, enterprise resource planning; customer relationship management and supply chain management being less common (Stefanou, 2014). This may be due to the relative lack of finance available to SMEs, but could be changing with the introduction of less expensive approaches to Information Technology implementation (Stefanou, op cit).

The implications to this finding relates to the potential lack of Human Resource Information Systems (HRIS) within SMEs. Without them, an enterprise's management will be less able to provide the data required to enable an assessment within short timescales. However, it does not follow that all SMEs lack HRIS capability. At the CIPD Software Conference (2015) devoted to these systems there were packages specifically designed for SMEs. Characteristics include low set up costs and monthly contracts based on headcount (e.g. MyHRtoolkit, 2017).

The implications of the organisational resource findings are that as well as incorporating external relationships, the proposed instrument should investigate the quality of organisational integration and how that potentially impacts on human capital effectiveness.

2.8.1.5 Shared values

Shared values throughout an SME may be more commonplace than those found within many (but by no means all) larger enterprises, due to the owner / entrepreneur

/ senior management team being closer to the workforce both physically and psychologically (Haugh and McKee, 2003; Centeno et al., 2013.). A well publicised example of owner / entrepreneur influence on an SME would be 'Zappos' (Burkus, 2012), but this culture developed by CEO Tony Hsieh may be no more powerful than that developed by Steve Jobs and Tim Cook at Apple (Yoffie and Rossano, 2012) or Larry Page and Sergey Brin at Google (Vise, 2007).

Due to their size, relative to a large enterprise, it could well be a less demanding initiative to implement a set of common values within an SME. However, it cannot be assumed that any given SME has well defined and universally accepted values and it would be reasonable to investigate this issue as part of an assessment instrument.

2.8.1.6 Skill Sets and Staff

The skill sets of managers in different sizes of enterprise have been found to be different. Recent work by Hayton (2015 pp.37-38) concludes that 'entrepreneurial skills are most important for firms between 5 and 19 employees'. Technical skills 'become more important for firms with between 20 and 99 employees'. Strategy formalisation and responsiveness 'play a significant role across most size categories', while human resource management 'appears most important for those SMEs with between 50 and 99 employees'. Darcy et al. (2014) found skill sets of managers in SMEs have also been found to be less developed with a 'clear lack of formalised managerial competency'

In addition, within an SME, the workforce as a whole has been likely to be different in nature compared to those found within larger enterprises. The work by Wright et al. (2001) suggests the reasons for this. They identify three factors which have

distinguished SME employees from those of larger enterprises. Firstly, as SMEs are less likely to have the time and finances to induct and train people, those recruited are more likely to have relevant experience and working practices gained elsewhere. Secondly the relative lack of formalised people management practices in some SMEs has meant that the pressures to conform to preferred behaviour can be less effective. Lastly the authors propose that there has typically been less emphasis in SMEs on harnessing the commitment and loyalty of their people. Compared to the synchronised efforts of large international enterprises it can be argued, therefore, that SME approaches to talent management lack sophistication. Stahl et al. (2012) make the point that large enterprises make every effort to ensure that their HRM practices are aligned in order to support their business strategy and operations – Strategic HRM.

It is unlikely that SMEs have aligned their HRM practices to their strategy in the past but, once again, this may be a changing trend. More SME owner / managers are obtaining management training with approximately 60% - 70% of SME managers seeking external training (Organisation for Economic Cooperation and Development, 2002) and government sponsored apprenticeships making the cost of training within SME reach (Burn-Callander, 2017).

In summary, including a factor relating to skill sets is a definite requirement, but the wording of items relating to this theoretical factor will need to be more colloquial. For example 'ensuring people know what they have to do, how well and when' may be preferable to 'performance management' or 'performance appraisal'.

2.8.1.7 Style

Leader style may not be so different, as, for both medium and larger sized enterprises it would depend on the industry, strategy, stage in life cycle and speed of environmental change. It might be expected that entrepreneurship is a style that would be more commonly found within SMEs. However, the knowledge / skills / attitudes often associated with entrepreneurship (Rubin et al., 2016) are also being developed within large enterprises in the form of 'intrapreneurship' (Rivera, 2017).

More generally, leader style has been portrayed as loose – tight (Kanungo, 1997; Sagie et al., 2002; Bell et al., 2014). Loose leader styles focus on employee participation. Tight styles favour an authoritarian, directive style. With innovation being a key issue for SMEs (Rosenbusch et al., 2011) it could be expected that most would opt for looser range of controls. Indeed Psychogios and Garev (2012) found loose control including adaptability, empowerment and extensive communications to be an effective leadership style in turbulent environments. However, Freel (op. cit.) found both loose and tight controls in his sample. Consequently, as with large enterprises, it is likely that leadership styles within successful SMEs are contingent on both historical factors (e.g. personality and values of founders) and current circumstances (e.g. environmental turbulence).

Leader style may not be a suitable separately defined factor because participant responses to a combination of factors / items may well accurately portray management style. For example, responses to items relating to strategic intent, internal relationships and employee engagement are likely to characterize the style of leadership within an SME.

2.8.1.8 Key differences

As a generalisation, with many exceptions found in the literature, differences may be summarised as follows: Strategic intent is likely to be more flexible in response to changes in their chosen markets; funding may be more internally generated and consequently subject to less control by outside bodies; it is conceivable that physical assets may generate shorter term competitiveness if they are innovative; external relations are likely to be critical, but maybe no more so than for large enterprises; many SME organisations may be less hierarchical, less subject to inter – unit silos and experience looser management control; technical expertise may be less sophisticated and reflected in the implementation levels of information technology; some may have well ingrained values sets and leader styles generated historically from their founders; lastly SMEs are more likely to have recruited experienced and competent employees and may not have invested so much in training and development.

Although the literature review has indicated some similarities between SMEs and large enterprises, there are enough differences to merit the development of an HC / IC assessment instrument, particularly if it can include colloquial terminology, be implemented quickly and at low cost.

The next sub-section goes on to assess the importance of formal SHRM / HRM practices within SMEs.

2.8.2 SMEs ALSO APPRECIATE THE VALUE OF HRM

It was established earlier that SHRM / HRM practices aim to support the maintenance and growth of HC in large enterprises. In sub-section 2.8.1.6 above the possibility that HRM practices would be less well developed in SMEs was

introduced. This Section outlines whether this latter assumption is likely to be true. The aim is to establish whether or not to include specific HRM practices in an assessment instrument and, if so, which practices and what terminology to use. The Section starts with the methodological issues which make it difficult to determine how influential HRM practices are in SMEs. The Section then goes on to compare HRM practices pre-2004 and those which may be found in SMEs post-2004. The 2004 distinction is used because of European Union regulations and directives (2002 – 2004) and the UK Employment Relations Act (2004) had an impact on employee relations within SMEs, covering issues such as union recognition, industrial action, rights of employees and the enforcement of the minimum wage.

2.8.2.1 Methodological issues

The main methodological issue relating to the assessment of HRM in SMEs is that it is difficult to determine the actual influence of policies and practices that are said to exist. This is because, although they are specified as being in existence, they are implemented either formally or informally or a mixture of both (Martin et al., 2008). This mixture of implementation makes it even more difficult (compared to large enterprises) to establish a link between HRM practices and organisational outcomes (Guest and Conway, 2011; Marlow, 2006).

However, in the context of including HRM items in the assessment instrument, it is important to establish the extent to which such practices influence the growth and maintenance of HC in SMEs and subsequent enterprise outcomes.

2.8.2.2 HRM Practices pre 2004

Studies pre 2004 found the following HRM practices to be used in varying levels of sophistication and implementation by SMEs. The studies cited are those which concentrate on medium sized, established enterprises and the initial classification is based on the Chartered Institute of Personnel and Development profession map (2017).

2.8.2.2.1 Resourcing

These policies were seen as a key component to organisational success, albeit relatively informal. Successfully recruited candidates were expected to be willing to perform multiple roles with unclear boundaries (Deshpande and Golhar, 1994; Heneman et al., 2000; Barber et al., 2016).

2.8.2.2.2 Learning and development

This was generally seen as less important, probably because individuals are expected to be able to contribute immediately after recruitment. Indeed it is notable that research by the consultancy Watson Wyatt found that formal employee training and development has been negatively correlated with market value (Watson Wyatt, 2002). Nevertheless around 60% of UK MSEs were found to have formal training budgets, although they were aimed more at lower level training needs below NVQ4 (Sadler-Smith and Lean, 2004.). Unstructured 'on-the-job' training, however, was seen to be important and particularly so in the context of embedding new recruits into a prevailing organisation culture.

The introduction of funding through the European Social Fund generated more interest in training and development (Keogh and Stewart, 2001). Research into the

impact of the Fund concluded that the interventions facilitated the introduction of more formal approaches to training and development such as identification of training needs through appraisals, and the development of individual training plans (Devins and Johnson, 2003).

2.8.2.2.3 Formal performance management

These practices (individual objective setting, monitoring, appraisal and feedback) were not found to be common, with owners and managers using primarily informal ongoing communication and feedback (Brand and Bax, 2002). Overall enterprise performance measurement, however, was found to be widely used, but measures used were often obsolete, focussed on historical data, or unusable with limited feedback systems (Hudson et al., 2001).

2.8.2.2.4 Reward policies

These were seen to be particularly important because they could attract and retain staff, and could influence behaviours relating to innovation, risk taking and tolerance of ambiguity (Welbourne and Andrews, 1996; Chandler et al., 2000; Graham et al., 2002).

2.8.2.2.5 Organisational change and development

In SMEs this was found mainly under the terminology 'dynamic capabilities' and / or 'organisation agility'. Innovation too was included in this cluster of practices and this is covered in more detail in the following sub-sections. The requirement for an SME workforce to be aware of changing market conditions and adapt to them is not new. It has been evident in academic journals since the 1970s (Greiner, 1972).

2.8.2.2.6 Employee engagement

This was recognised as a term relevant to HRM, but few studies acknowledged the concept pre-2004, notable exceptions being Axelrod (2002) and Haudan and MacLean (2002). This aspect of HRM was studied, but more widely under the umbrella of empowerment studies (Wyer and Mason 1999).

2.8.2.2.7 Employee relations

This, and the impact of unionisation, was significant in its absence in pre-2004 studies. The Thatcherism era (1975 – 1990), which influenced trends away from unionisation, plus isolation of shop stewards may have contributed to this (Rainnie, 1985). Indeed, the number of UK enterprises with formal mechanisms for capturing ‘employee voice’ was static around 75% over this period (Gomez et al., 2009).

2.8.2.2.8 Recent UK employment law

This was generated by the European Union regulations and directives (maternity and parental leave 2002; employment equality, 2003; working time amendment, 2003; information and consultation, 2004;) is likely to have been a major reason for the increase in studies relating to HRM in SMEs. The increasing number of grievances reaching employment tribunal stage is likely to have highlighted the requirement for HRM practices that meet legal requirements.

Figure 2.8.2 (a) over page demonstrates this trend in applications.

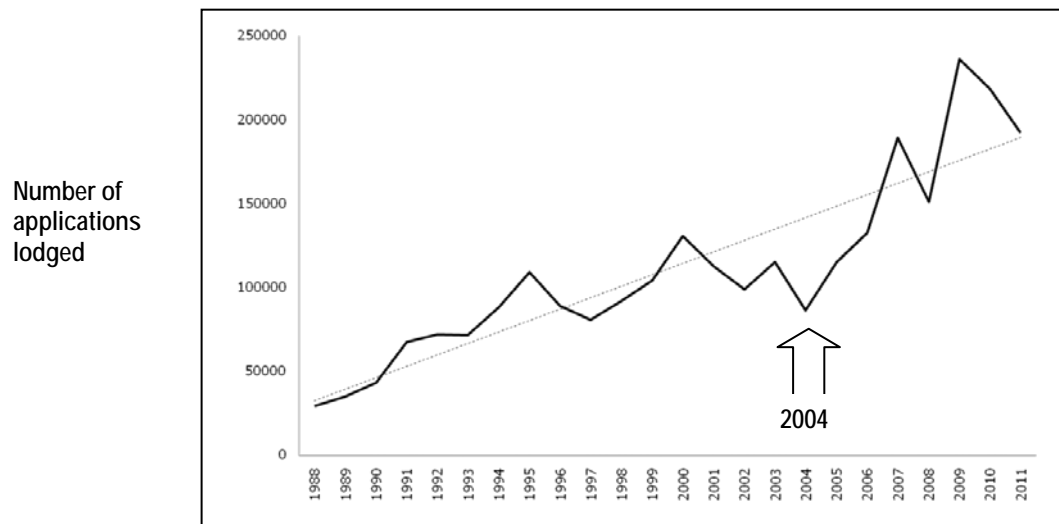


Figure 2.8.2 (a): The number of UK employment tribunals per year (Anstis, 2012).

2.8.2.3 HRM Practices post 2004

Since 2004 there have been an increasing number of academic studies concerning HRM in SMEs and reported in international peer reviewed journals. Chart 2.8.2 (b) below, based on a search using ProQuest, demonstrates this increasing trend.

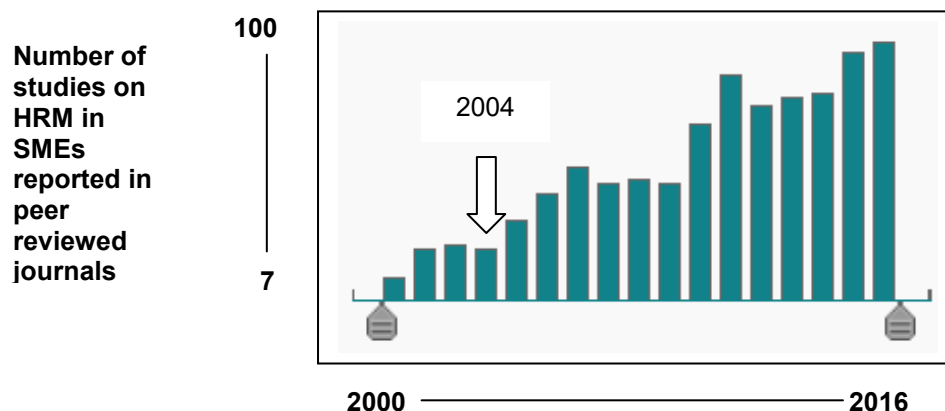


Figure 2.8.2 (b): Trend in the publication of international peer reviewed articles on HRM in SMEs. Source: Proquest.

From 2004 onwards, the most comprehensive attempts to assess the extent of HRM in SMEs in the UK have been the Workplace Employment Relations Surveys (WERS: Kersley et al 2004; Van Wanrooy et al., 2011). The original 2004 survey covered 2,295 micro, small, medium and large enterprises. However, in 2006, data specific to 227 medium enterprises (50 – 250 employees) was extracted (Forth et al., 2006). A corresponding extract of data from the WERS (2011) for medium sized enterprises had not yet been published as at July 2017.

The terminology used by WERS in 2004 and 2011 to determine HRM practices is more colloquial in nature when compared to CIPD terminology, but does link with the CIPD profession map as shown in table 2.8.2 (c).

CIPD terminology	WERS terminology
Resourcing:	Recruitment and selection; equal opportunities; staffing plans.
Learning and development:	Training.
Performance and Reward:	Performance appraisal; rates of pay; Performance – related pay.
Employee Relations:	Hours of work; pension entitlement; holidays; grievances; disciplinary; redundancies; health and safety
Employee engagement:	Consultation; new involvement initiatives.
Organisation development:	Workplace change; new work techniques; change in work organisation; product / service innovation.

Table 2.8.2 (c): Comparison of CIPD and WERS terminology.

This terminology used by WERS appears to be more commonly used by SMEs than that used by the CIPD. This is of relevance to assessment instrument design.

As outlined above, the increasing motivation to implement this range of practices in SMEs has been generated by the implementation of employment regulations / law (Taylor, 2016). But the research indicates that there continues to be a lack of methodological rigour in studies of HRM in SMEs (Sheehan, 2013). However, it is clear that the main HRM components are becoming more formalised compared to pre-2004. These are outlined below.

2.8.2.3.1 Strategic planning

From 2004 onwards there is a more formal link between strategic planning and HRM practices with improved implementation of HRM policies (Khilji and Wang 2006).

2.8.2.3.2 Recruitment, Selection and Staffing practices

These remain variable, often depending on the interests and skills of 'non-HR' managers, but more sophisticated selection practices are being developed (Wyatt et al., 2010).

2.8.2.3.3 Performance appraisal

This is found to be practiced in the context of establishing short term performance targets, checking key performance indicators and reviewing staff performance. However, less effort is made on longer term, sustainable competitive advantage (Ates et al., 2013). This lack of longer term planning reflects the need for SMEs to focus more on adapting to market trends. As with recruitment and selection practices, efforts are being made to improve performance management in SMEs (Gomes and Yasin, 2011).

2.8.2.3.4 Training

In SMEs this has been continually encouraged by the UK Government, Department for Business Innovation and Skills (BIS: Hancock, 2014) and the Confederation of British Industry (Hall, 2014). In 2014 the BIS SME Business Barometer found 67% of medium sized businesses were planning to invest in formal training. The Workplace Employment Relations Survey (Van Wanrooy et al., 2013) survey suggests this has been primarily related to health and safety, operating new equipment and customer service.

2.8.2.3.5 Employee relations

A significant number of enterprises (75%) were affected by the recession (2007 – 2010), the main issues being freezes on recruitment, freezes or cuts in pay, increases in workload and changes to work organisation (Van Wanrooy et al., *ibid*). This had a negative effect on relationships between management and employees. Of particular relevance to the assessment instrument is the increase in zero hours contracts. This may well increase employment flexibility, but also impact on the loyalty of some categories of employee and reduce employee influence on organisational outcomes.

2.8.2.3.6 Employee consultation and involvement

Despite the use of zero hours contracts, overall levels of employee commitment to their enterprise have increased (Van Wanrooy et al., 2011). This has relevance to the assessment instrument because this increase in commitment appears to be associated with increased inclination to carry out tasks in addition to formally agreed

roles (ibid). Increased willingness to 'go the extra mile' has relevance to employee flexibility and levels of influence.

2.8.2.3.7 Workplace Change

Increased consultation, involvement and commitment also impact on attitudes towards change. This in turn facilitates the dynamic capabilities of an enterprise and facilitates improvements in technology, work practices, work organisation and innovation.

2.8.2.4 Conclusion

The conclusion to be made from the research carried out into HRM in SMEs is that formal HRM management practices are not uncommon, but are variable in range and unpredictable in their application. Nevertheless they are perceived as becoming more important because of potential costs of poor management (e.g. risk of employment tribunals) and potential benefits of generating a competent and committed workforce. As such there is a strong argument for integrating HRM practices in the proposed components of the instrument.

The next sub-sections go on to establish whether or not owners / managers of SMEs describe their workforce in terms of HC; whether HC has an impact on SME outcomes and whether investors assess HC when investigating potential mergers / acquisitions involving SMEs.

2.8.3 HOW HUMAN CAPITAL IS DESCRIBED BY SME EXECUTIVES

Historically, most of the research into HC / OC / RC has been directed towards large enterprises. For example Bontis' exploratory study (1998) covered enterprises with a mean employee headcount of 8,731 and mean turnover \$588.15 million. The Bontis study did include some SMEs as the minimum headcount was 8, but it is not specified how many (p.68).

The Economist Intelligence Unit's survey of executive views on intangible assets (Molnar, 2004) covered enterprises in 27 countries and 30 industries but focused on enterprises with turnovers of \$500 million plus (p.2).

In a more recent review of the literature Mention (2012) states that 'empirical analyses have been conducted in both large and small firm settings, though larger firms have clearly captured more attention' (p. 12). It is only recently that HC in SMEs has begun to appear in academic journals and, as with HRM in SMEs, 2004 is a significant date. The figure 2.8.3 below demonstrates this increase in international peer reviewed journals focussing on HC.

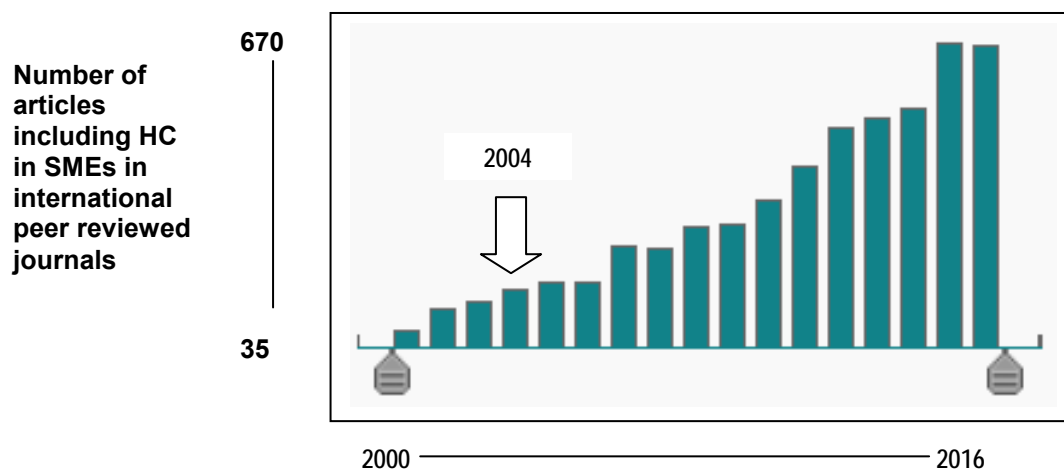


Figure 2.8.3: Trend showing the number of international peer reviewed articles including Human Capital in SMEs. Source: Proquest

Most investigations into SMEs do so in the context of IC, not HC, probably because HC is relatively impotent without an interaction with OC and RC (Bontis, 1998; Cohen and Kaimenakis, 2007). Consequently the remaining part of this sub-section focuses on studies covering IC in SMEs.

There are international differences in the management of SMEs, and IC in SMEs, (Carrier, 1994; Crema and Nosella, 2014; Gray and Mabey, 2005; McAdam and Reid, 2001; Russo and Perrini, 2010). However, it can be argued that the same issues of survival and performance outcomes are likely to apply in most 'Western oriented' countries. This argument is supported by Cohen and Kaimenakis (2007) who maintain their findings in Greece 'may provide useful insight regarding IC in SMEs in an international context since the structure of the Greek private sector closely resembles that of the broader European Union' (ibid p. 242) Consequently the following outline of IC / HC in SMEs is based on UK, European and International studies.

Europe appears to be leading the UK in developing formal IC statements. In 2006, a European research project was initiated to establish a European consensus on a framework for IC and way of reporting the value of IC in SMEs. A European Intellectual Capital Statement (InCas) was established for SMEs (Mertins et al., 2009,).The InCas research does not include UK SMEs but does include research oversight by three universities including the London School of Economics. The InCas framework is consistent with the definition of IC and HC proposed in Section 1.2. The components covered by InCas include the influence of the commercial environment, individual business strategies, application of Human Capital, Structural

(Organisational) Capital; Relationship Capital and management of business processes including knowledge management processes. The InCas project establishes that the importance of IC is appreciated by SME owners / managers, but how best to assess and report on IC remains a problem (Henry, 2013).

2.8.4 THE DESCRIPTION OF HUMAN CAPITAL / INTELLECTUAL CAPITAL USING COMBINATIONS OF COMPONENTS

The range of international studies found suggests that the impact of HC / IC on SMEs has been researched through a series of different lenses similar to research into large enterprises. The lenses are entrepreneurship; learning and knowledge management and innovation (Easterby-Smith and Lyles, 2011; Henry, 2013; St-Pierre and Audet, 2011; Wingwon, 2012). The lenses reflect different combinations of IC factors and these are discussed in more detail below.

2.8.4.1 Entrepreneurship in SMEs

Studies of entrepreneurship in SMEs indicate a wide range of factors which contribute to entrepreneurial activity (Hisrich and Drnovsek, 2002; Mitchelmore and Rowley, 2010; Wingwon, 2012). Overall, there are factors fall into 4 clusters: national culture; economic activity; SME strategy and individual differences in SME owners / managers.

2.8.4.1.1 National culture

As the current study focuses on HC in UK SMEs, the differences found in national cultures (Dorfman et al., 2012) are not relevant.

2.8.4.1.2 Economic activity

While unevenly spread around the UK (Huggins and Thompson, 2010), economic activity is not relevant because it is those SMEs of interest to investors that are of relevance, irrespective of UK location.

2.8.4.1.3 Strategic intention

This is an important consideration because not all strategic intentions of SMEs are entrepreneurial in nature and this is likely to impact on the nature of HC in SMEs. The classification of strategic intentions introduced by Miles and Snow (1978) is a useful consideration here, because owners / managers are easily able to identify with the four strategies (Raymond and St – Pierre, 2005). Strategies are described as ‘defensive’ (typically used by enterprises with a narrow range of products and efficient operations); ‘analytic’ (used by those seeking to evolve through careful response to market conditions); ‘reactive’ (characterised by those finding it difficult to anticipate and adapt to market changes) and prospective (typically relating to innovative enterprises purposefully searching for new markets). It is this last strategy that is most likely to be associated with entrepreneurship.

It is reasonable to assume there will be a different ranking of IC factors dependent on strategic intent. Defenders are likely to value organisation processes that emphasize efficiency and effectiveness. Analysts may well focus more on ways of assembling facts before decision making. Prospectors are likely to place high importance to external relationships.

Accordingly, an assessment instrument will need to take into account SME strategy and its variability in the context of SMEs

2.8.4.1.4 Individual differences in SME owners / managers

If investors have an interest in executive individual differences, and the aim is to retain the target management team post merger / acquisition (Galpin and Herndon, 2008), then an assessment of executive competence is critical. It is so critical that a pre-investment assessment of the Board of Directors / Senior Management Team is already carried out by investors (Shearn, 2012). As such the individual differences of executives are not included in the proposed instrument. For completeness, the main individual differences covered in the literature are innovativeness, risk taking, proactivity (Miller, 1983), competitive aggressiveness and autonomy (Lumpkin and Dess, 1996).

2.8.4.1.5 Entrepreneurship and Intellectual Capital in SMEs

Within the literature on entrepreneurship the three major components of IC are seen to be important in SMEs. Human Capital is valued highly, but this latter construct is seldom worded in this way. Two elements of HC which are commonly discussed are the nature of the lead entrepreneur and the competencies of the workforce.

Organisational Capital is seen to be of relevance, with leadership style and associated organisation culture often discussed. The need for an information technology system is regularly mentioned. Within the OC component, the legal protection of knowledge is seen to be a major issue. Relationship Capital is seen to be critical, particularly relationships with regional authorities, universities, customers and suppliers.

2.8.4.1.6 Entrepreneurship and other streams of research

Because of the wide range of factors associated with entrepreneurship, the construct overlaps with other streams of research, particularly learning, knowledge management and innovation which are discussed in the next sub sections. They may be seen as elements of entrepreneurship but they are well represented in research streams on their own accord.

2.8.4.2 Knowledge Management and Organisational Learning in SMEs

Although commonly residing in different research streams, Knowledge Management and Organisational Learning are part of the same process of transforming data into knowledge (Inkpen, 1998; Easterby-Smith and Lyles, 2011). Taken together therefore, the combination of Knowledge and Learning make up a process which contributes to the development of a critical organisational resource (North and Kumta, 2014).

The concept of knowledge management (KM) originates from the work of Polyani (1958, 1967) who made the distinction between tacit and explicit knowledge. The former he saw as being highly personal, developed through experience and difficult to express. As such it is of critical importance to the assessment of HC within an SME as it meets the 'resource-based' criteria of value, rarity, inimitability and inability to substitute. The latter is knowledge which can be captured and retained in codified form, for example in procedure manuals and databases. This is important in the context of organizational capital.

2.8.4.2.1 Knowledge Management in SMEs

Knowledge Management (KM) came to the fore in the 1970s (Argyris and Schon, 1978) and subsequently emerged as a construct popularized by Drucker (1995). Snowden (1999) defines the construct as a 'body of methods, tools, techniques and values through which enterprises can acquire, develop measure distribute and provide a return on their intellectual assets' (ibid p.6). KM in SMEs is different to that typically found in large enterprises because, as has been discussed earlier, SMEs are less able to control their environments, many SME organisations are less hierarchical and less subject to silos; technical expertise is often less sophisticated and the owner – manager determines both levels of knowledge and types of KM practices (Sparrow, 2011).

SMEs provide a potentially fertile ground for developing good KM practices. Many, (but, as outlined earlier, not all) have a flat structure, informal internal relationships and a management style that encourages new ideas (Anand and Daft, 2007). Increasing competition, and the need to innovate, means that there is a drive to generate new knowledge through both internal and external relationships (Alawneh et al., 2009). Also, it makes sense to capture the knowledge of key people because they are mobile (Tiwana, 2000) and a turnover of staff can leave an SME with knowledge gaps (Brössler, 2000)

However, qualitative studies (in-depth interviews) into managerial views on KM (Nunes, et al., 2006) suggest that formal adoption of the KM in SMEs, while theoretically attractive, is by no means certain. This is due to the perception that formal adoption is both costly and based on longer term strategy which can be

superseded by shorter term survival practices (e.g. sales forecasting, invoicing and cash flow management). Indeed, in many SMEs there has been found to be an absence of systematic knowledge management practices (McAdam and Reid, 2001; Wong and Aspinwall, 2005). As such, knowledge is often restricted to the minds of owners and key employees as opposed to being captured, codified and stored (Wong and Aspinwall, 2004). Additionally, some owners / managers are keen to block the outflow of knowledge because of leakage to competitors. Consequently this minimises the possibilities of knowledge sharing externally (Hutchinson and Quintas, 2008).

Any adoption of KM principles by SMEs is likely to be implemented only if there is an obvious business benefit and there is a willingness to share knowledge, especially by owners / senior managers. If knowledge generation is seen to be valuable in the context of intellectual property rights and can be incorporated into all aspects of a business then there is a greater likelihood of implementation (Sparrow, 2011). Triggers to the implementation of KM include the need for improved customer relations; better co-ordination of knowledge in order to innovate; more formal capturing and maintenance of knowledge due to growth or succession planning (Davenport and Prusak, 1998).

Based on the above it would make sense to incorporate KM items into the proposed instrument, at least in the initial stages of design.

2.8.4.2.2 Organisational Learning in SMEs

Organizational Learning was emphasized in the 1960s as a separate research stream (Burns and Stalker, 1961; Cangelosi and Dill, 1965). Subsequently Senge defined a learning organisation as consisting of people who 'continually expand their capacity of creating results they really want' (1990, p.3). Pedlar offers the definition 'an organisation that facilitates the learning of all its members and continually transforms itself' (Pedlar et al., 1991, p.3).

Learning in organisations is often the result of the deliberate management of knowledge and there are combinations of factors that, together, facilitate effective learning (Serrat, 2017). These factors are regularly found within IC literature: strategy which focuses on the long term; leadership which encourages learning behaviours; a focus on expecting and managing change; a culture which values time both to plan for the future and reflect on the past; a culture which encourages experimentation and challenge and a culture which minimises organisational politics.

Based on the above, these elements too should be incorporated into the initial stages of instrument development.

2.8.4.2.3 The links between Intellectual Capital, Knowledge Management and Organisational Learning

From the above it appears likely that a combination of HC, OC and RC may generate both enterprise specific knowledge and organisation learning. Knowledge, in turn, is retained as a combination of tacit knowledge, explicit knowledge and intellectual property (patents, trademarks, designs etc). The European InCaS project confirms

this likely combination in that its model contains specific Knowledge Processes akin to those outlined above.

2.8.4.3 Intellectual Capital and Innovation in SMEs

Innovation is distinguished from entrepreneurship in that the former does not necessarily involve penetration into new markets, while the latter does (Drucker, 2014). Innovation occurs in both large enterprises and SMEs in a number of different forms, but the link with knowledge management and learning is captured in the definitions 'an on-going processes of learning, searching and exploring, which result in new products, new techniques, new forms of organization and new markets' (Lundvall, 1992, p. 8) and 'the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation' (Chesbrough, 2006, p2).

Innovation thus relates to the concept of dynamic capabilities and the 'prospective' strategic intention outlined above (Miles et al., 1978). It is an essential component of entrepreneurship (Drucker, 1989). The concept is important enough in some studies to merit inclusion as a formal subdivision of structural capital which is divided into a combination of 'process capital' and 'innovation capital' (Edvinsson and Malone, 1997; McElroy, 2002).

Although there is a research stream that suggests that innovation is likely to be greater in larger enterprises due to the availability of resources (Bhattacharya and Bloch, 2004), there have also been a number of studies which link success in innovation with SMEs. They are seen to be better able to respond to changing market conditions (Hult et al., 2004; Rosenbusch et al., 2009; Bigliardi, 2013).

Factors that contribute to innovative SME success include dynamism in market environments (Salavou et al., 2004); purposeful business strategy (O'Regan and Ghobadian, 2005); regional support (Muro and Katz, 2011); organisational structure facilitating strong internal communications (Siqueira and Cosh, 2008); a skilled workforce (Dimov and Shepherd, 2005; Gray and Mabey, 2005); extensive networking, particularly with customers and universities (Salman and Saives, 2005) and ability to protect IC (Brant and Lohse, 2013). Most of these factors are contained within the three main components of IC.

Some studies make a distinction between 'closed' and 'open' innovation in SMEs. Closed innovation is the traditional approach where new knowledge is generated and developed within an enterprise and then marketed (Marques, 2014). Open innovation is based on extensive networking and relies on strong inflows and outflows of knowledge into/from an SME. Those SMEs that are able to capitalise on these inflows are said to have a strong 'absorptive capacity' (Cohen and Levinthal, 1990; Zahra and George, 2002). Some studies suggest that this approach to innovation is becoming more frequent (Gassmann et al., 2010). Other studies, however, have made the point that openness occurs even in strongly 'closed' SMEs which restrict the sharing of knowledge. They focus their openness on their key customers and centres of excellence (Blumentritt and Danis, 2006). True open innovation includes the practices of 'spinning off' new ventures; selling / franchising IP or importing IP from other enterprises; creating employee teams to generate new ideas; using supplier or customer feedback and / or know-how and networking with knowledge intensive sources such as universities. The increased frequency of openness is due to the development of knowledge across a range of public and

private organizations and the high cost of 'in company' innovation (Van de Vrande et al., 2009). This trend specifically reflects the relationship capital element of IC.

In summary, as with entrepreneurship, learning and knowledge, the factors comprising IC are embedded within the construct of innovation. A combination of Human Capital, Organisation Capital and Relationship Capital creates the mix of resources required for innovation. New ideas are protected, sold and purchased by codification and patent protection.

Levels of innovation may be a candidate for inclusion in an assessment instrument, but a decision to include will depend on the choice of industry in which to locate the research and the strategy used by participant enterprises. For example SMEs using 'prospector' strategies will value innovative practices, while those using a defensive strategy less so.

2.8.5 MANAGEMENT OF HUMAN CAPITAL / INTELLECTUAL CAPITAL MAY ALSO HAVE AN IMPACT ON SME OUTCOMES

This Section reviews those studies that have attempted to identify a relationship between IC in SMEs and enterprise outcomes. It begins with a review of the studies on HRM and goes on to discuss those relating to the combinations of IC factors discussed above (entrepreneurship, knowledge and learning, innovation).

In all cases studies specifically aiming to establish a relationship between HRM / HC / IC and SME outcomes are likely to have differing results and conclusions. This is because there are many variations in the mix of IC components, differences in SME size and strategy, differences in the extent of implementation of espoused policies

and differences in the measurement of outcomes (Iltner, 2008). There have, nevertheless, been studies which successfully point to a relationship between HRM, HC/IC, IC combinations (entrepreneurship, knowledge management and innovation) and SME outcomes.

2.8.5.1 The relationship between HRM and SME outcomes

Those studies that have attempted to establish a relationship between HRM practices and SME outcomes have done so with varying success. For example Patel and Cardon (2010) did find some relationship between HRM practices, culture and outcomes in some SMEs. However, they found no relationship in others. Examples of successful studies include relationships between organisational outcomes and training and development (Storey, 2004) and high performance work systems (Messersmith and Guthrie, 2010). The most up to date and comprehensive meta analysis has been carried out by Rauch and Hatak (2016) who analysed 56 independent samples comprising 18,521 firms. Their conclusion was that HRM practices which enhance employee skill, motivation and empowerment are positively linked to SME outcomes.

2.8.5.2 The relationship between Intellectual Capital and SME outcomes

The classical components of IC (Human Capital, Organizational Capital and Relationship Capital) are generally seen as important elements in maintaining enterprise competitiveness (Cohen and Kaimenakis, 2007; Kaufmann and Schneider, 2004). It is also acknowledged that it is the combination of components that generates the greatest influence (Bontis, 1998; Edvinsson and Malone, 1999).

There are studies that have found a relationship between the classical components of IC and various measures of SME outcomes such as operational cost (Bontis, 1998); capital gains (Appuhami, 2007); cash flow (Herremans et al., 2007) growth rate (O'Cass and Sok, 2014) and profitability (Cohen and Kaimenakis, 2007; Vaisanen et al., 2007). There have also been some attempts to establish the relative importance of Human, Relationship and Structural Capital and SME performance. Human Capital is seen as the most important component of IC but its influence on organisational outcomes is indirect. (Cohen and Kaimenakis, 2007; Wang and Chang, 2005). A study by St. Pierre and Audet (2011) demonstrates the likely set of relationships. Taking the IC model proposed by Wang and Chang (2005), which included the division of structural capital into innovation, and process capital, they identified a set of relationships shown in figure 2.8.5 below.

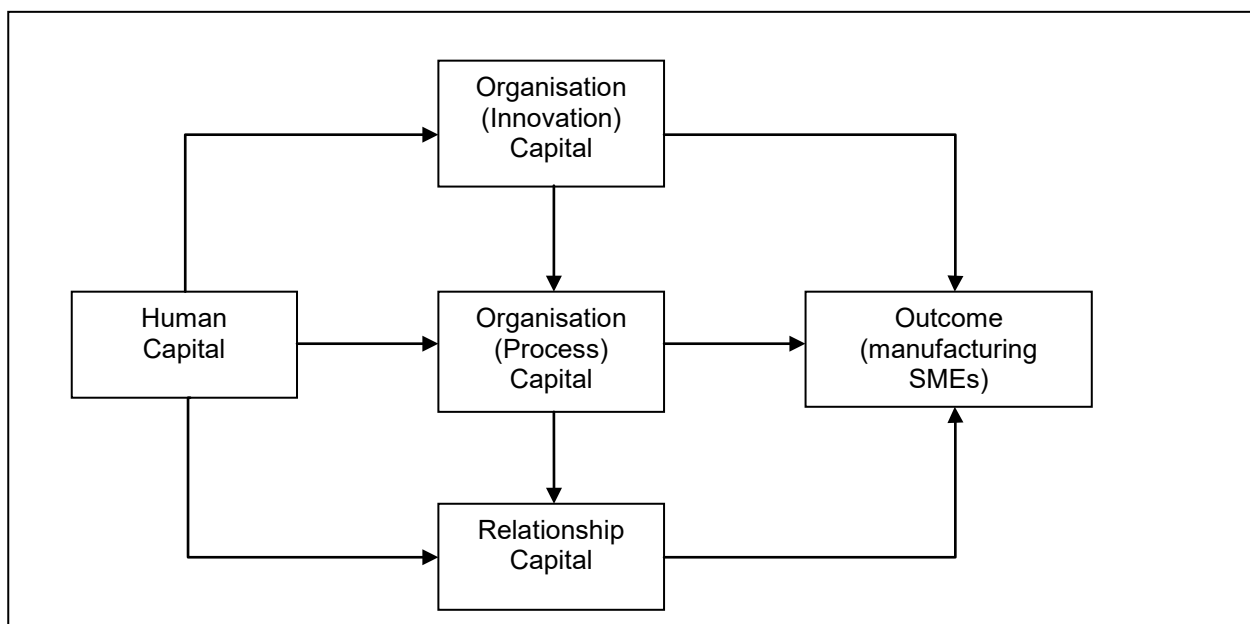


Figure 2.8.5: The relationship between different components of Intellectual Capital and the performance of 267 manufacturing SMEs. Source: Wang and Chang (2005).

This set of relationships were found by studying 267 manufacturing SMEs, with a median of 20 year's existence and of varying strategic intent (prospectives, analysts

and defensives). They also found differences in the strength of relationships between the different IC components depending on strategic intentions. For example prospectors concentrate more on innovation practices, defenders less so.

The most important finding in the context of the current research is that, whatever the intended strategy, it is the quality of HC that influences all other components of IC, however defined.

2.8.5.3 The relationship between other Intellectual Capital combinations and SME outcomes

In Section 2.4.3, focussing on large enterprises, it was concluded that, although individual components of IC may well influence outcomes, it was the combination of components that generated the greatest influence. Studies into the relationship between combinations of IC components have also been found to have an influence on SMEs. The combinations, entrepreneurship; knowledge management and innovation capability, are discussed below:

2.8.5.3.1 Entrepreneurship and SME outcomes

Some studies have found that SMEs with an entrepreneurial orientation perform better than those without. Others have failed to find this positive relationship and this is likely to be due to the extensive range of confounding variables both within an enterprise and external to it (Lumpkin and Dess, 1996). For example Smart and Conant (1994) could identify no significant relationship and some studies have even found a negative one in terms of 'new product failures' (Craig and Hart, 1992, p.9).

Generally it has been found that entrepreneurship together with a market orientation generates the highest impact on SME outcomes (Matsuno et al., 2002). If the market orientation is complemented by an entrepreneur's strong dynamic capability this can further influence SME outcomes (Zahra et al., 2006).

Those that have found a strong relationship have done so between entrepreneurship and both financial and non financial performance (Keh et al., 2007; Omerzel and Antoncic, 2008); SME growth and sales (Mayer-Haug et al., 2013); growth and financial performance (Wiklund and Shepherd, 2005).

2.8.5.3.2 Knowledge Management and SME outcomes

Studies into the relationship between KM and SME performance come to differing conclusions. Kalling (2003) makes the point that 'knowledge is not always utilised, and that utilised knowledge does not always result in improved performance' (p 67). Shin (2004) comments that the cost of implementing a KM infrastructure can be significant to an SME. Additionally Cegarra-Navarro (2005) suggests formal KM systems based on information technology may not yield the benefits of improved information sharing. This is due to the fact that it is tacit knowledge that is often the critical element of SME knowledge and this cannot be captured by such systems

Despite these reservations, there have been studies which do link KM with organisational performance. Salojärvi came to the conclusion that a purposeful and well developed approach to KM is related to SME growth (Salojärvi et al., 2005). Bagnoli and Vedovato (2014) also came to the conclusion that SMEs with the strategic intentions of prospector and defender use KM effectively to impact on

performance. Uhlaner et al. (2007) distinguished between 'input', 'throughput' and 'output' knowledge management practices and concluded that 'input' practices had the strongest relationship with SME performance. The 'input' practices included networking and relationships with universities and other organisations' suppliers or advisers.

2.8.5.3.3 Innovation capability and SME outcomes

In common with other attempts to establish a relationship between predictor and outcome variables, studies of innovation in SMEs have resulted in different conclusions. Nevertheless, there are definite indications that innovation is related to SME performance (Pullen et al., 2009; Terziovski, 2010; Zeng et al., 2010; Rosenbusch et al., 2011). It is the type of innovation studied that contributes to the differing strengths of relationship. For example innovations relating to process improvement have greater impact than those relating to innovation inputs such as increased spend on research (Rosenbusch et al., op cit). There are differences in the impact of innovation depending on whether it is 'open' to external collaboration or 'closed'. The level of absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002) is also linked to innovation outcomes in SMEs (Francalanci and Morabito, 2008; Anonymous, 2015).

2.8.6 IMPLICATIONS FOR THE CONTENT OF THE ASSESSMENT INSTRUMENT

The studies carried out into HC/IC and the associated constructs of entrepreneurship, learning and knowledge and innovation, indicate that Human Capital and Intellectual Capital are not terms commonly used terms within SMEs. However, the more colloquial terminologies used indicate that owners and managers

are aware of the potential costs and benefits of competent and committed employees, organisational structure / culture, and external relationships.

For some SMEs, the characteristics of structure – less silos and better internal communications, and culture – ‘the way things are done around here’ – are critical to the development and implementation of new ideas. These aspects too will need to be included in the initial stages of instrument design.

For some SMEs, external relationships are a life blood, particularly for those using a ‘prospector’ strategy with critical links to universities, private research centres, professional advisors and partners.

In the case of all SMEs, poorly committed employees can generate significant costs through absenteeism, turnover and employment tribunals; as will be seen in the next section, competent and committed employees may positively influence organisational outcomes.

In conclusion, the studies concerning HRM, HC / IC, entrepreneurship, knowledge management / learning and innovation all point to a range of issues which should be included in the initial stages of instrument development. Many acknowledge a strong relationship between these constructs and SME outcomes. However, the terminology within such an instrument will need to focus more on colloquial terms, less on more academic or professional wording.

2.9 SOME ASPECTS OF HUMAN CAPITAL ARE ASSESSED BY POTENTIAL INVESTORS

Currently there are situations where the assessment of SMEs does already include an investigation into an SME's workforce. There are three situations where a formal assessment of an SME can happen: firstly where a buyer from outside of the SME wishes to establish its value, for example the Unity Group (2017) a firm that attracts investment and creates opportunities for SMEs; secondly when an investor is considering investing in an SME, for example Amati UK Smaller Companies Fund (2017); thirdly where a management team within an SME wishes to do so for purposes of a 'management buyout' (Robbie and Wright, 1995)

The buyout situation is of limited relevance to this thesis because the existing management should be aware of the strengths and weaknesses of their current workforce. Nevertheless a systematic assessment of a workforce by an existing management team would be enabled by the proposed instrument.

2.9.1 THE ROLE OF DUE DILIGENCE

This section outlines the use of due diligence before a merger or acquisition and also refers to its use before investing in a company. This latter use is described in more detail in later sections.

2.9.1.1 Due diligence before Mergers and Acquisitions

Mergers and acquisitions (sometimes termed 'business combinations') are a common way of growing a business in addition to organic growth (Anslinger and Copeland, 1996; Locket, 2011; Bauer and Matzler, 2014; Achtenhagen et al., 2017). There are a range of motivations for creating a business combination. Harvey and

Lusch (1995a) list these as the need to reduce risk; benefit from economies of scale; introduce new technology; control competition; benefit from complementary alliances or to expand internationally. In the same year Harvey and Lusch (1995b), citing the work of Davidson (1988) and Jarrett (1989), made it clear that too many such combinations encountered post-merger problems. They attribute this to pre-combination investigations which had been focussing too much on tangibles and not enough on 'soft assets' such as the quality of management, employees and corporate culture (p.7). This finding was echoed by King et al., (2004) who carried out a meta-analysis on the post-combination performance of acquiring firms; by Moeller et al., (2004) and subsequently by Marks and Mirvis (2011).

These pre-combination investigations are commonly termed due diligence. Typical definitions of due diligence include: research and analysis of a company or organization done in preparation for a business transaction' (McKinsey and Co, 2014); a comprehensive process of investigating and evaluating business opportunities (Denison and Ko, 2016); an investigation into a potential investment to confirm all facts relating to anything deemed material (Investopedia, 2018); the detailed examination of a company done before becoming involved in a business arrangement with it (Cambridge English Dictionary, 2018).

In 2007 Harding and Rouse emphasized that one reason such post- combination problems had occurred was that due diligence had been carried out without focussing on Human Capital. They indicated that, within a year of combining, 90% of newly established combinations experienced losses in market share.

They cited the work of Krugg (2003) who found two Human Capital issues that contributed to these losses. These were the immediate resignations of key

executives and / or key employees and longer term attrition of executives due to differences in decision-making styles and subsequent infighting. Of particular relevance to the current study is the Harding and Rouse proposition that Human Capital due diligence can help avoid many of the issues which have contributed to such losses.

The outcomes of business combinations have been found to occur in at least 5 different forms based on levels of change experienced by one or both of the combining organisations (Denison and Ko, 2016). The end states of the 5 forms are shown in figure 2.9.1.1 (a) below.

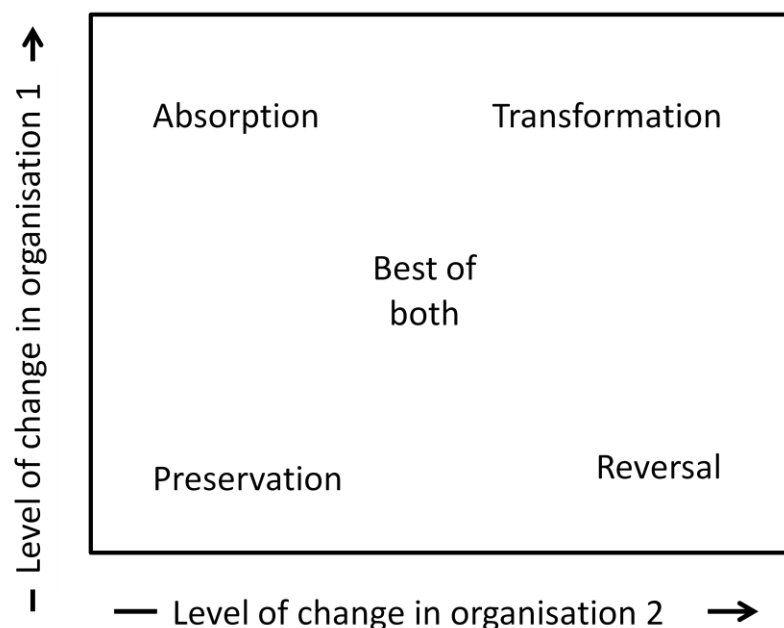


Figure 2.9.1.1(a) Aspects of change in Mergers & Acquisitions (based on Denison and Ko, 2016)

The end states are termed preservation, absorption, transformation, reversal and best of both. The 'preserved' end state is when both organisations retain their existing features and trade either independently or in partnership; the 'absorbed' end state is when all aspects of physical and intellectual capital of one organisation is absorbed into the other; 'transformation' occurs when both organisations undergo

planned major change initiatives and emerge as a different organisation altogether; in a 'reversal' the characteristics of a smaller or target organisation are adopted by the larger or initiator organisation. The 'best of both' end state is where the strengths of both organisations are assimilated with minimal change.

It is the Researcher's view that, in four of the five circumstances (absorption, transformation, reversal and best of both), due diligence activities focussing on Human Capital would be recommended or required for two reasons. Firstly the results may influence the decision to go ahead or not. Secondly the results may help determine a post-combination implementation plan. In addition, HC due diligence may be beneficial in the case of the fifth 'preservation' end state because it could potentially minimise potential misunderstandings if trading as partners.

Since the mid 1990s there has been general agreement that HC issues are an important element of the due diligence process (Cooper et al., 1994; Anslinger and Copeland, 1996; Harvey and Lusch, 1998; Birkinshaw et al., 2000; Schuler and Jackson, 2001; Klein and Kahn, 2017). Those involved until relatively recently, have been the financial and legal professionals. (DeMong et al. 2011; Van Teeffelen, 2011). Their problem has not been so much how to assess HC, but how to do so in a manner that enables comparisons between organisations and that can be trusted. So, until Harding and Rouse, due diligence investigations seldom included anything more than a relatively superficial qualitative examination of people issues (Harvey and Lusch, 1995b; Weber, 1996; Schmidt, 2002; McIntyre, 2004; Jap et al., 2017).

In addition to this, the nature of pre-combination due diligence depends on whether an approach by one organisation to another is friendly or hostile. In the latter case, investigations would not be welcome and HC due diligence would consequently be

even more superficial. Nevertheless, a superficial investigation could be feasible using less direct methods (Ainsworth, 2007). This would include reviewing website commentaries on people issues such as the Glassdoor company reviews and ratings (2018); an organization's own website commentary on people issues (e.g. Amazon, 2018), recruitment adverts (e.g. Hays, 2018) and using commercial news information sources from specialist organisations such as the Companies House database of all UK registered companies (2018) or the Factiva global news database (2018). It would also be possible to approach a target's key stakeholders: suppliers could comment on their relationships with a target; customers and competitors could offer insights into how a target competes in its chosen market(s) and its speed of response to changing circumstances (Ainsworth, *op. cit.*; Perry and Herd, 2004). In the context of the current study, it is envisaged that the proposed instrument would be used during a potentially friendly combination in order to determine whether or not to go ahead and to initiate the identification of priorities for action during the implementation stages.

Assuming a friendly combination, Harding and Rouse (*op. cit.*) recommended the following aspects of HC should be investigated: organization structure, head counts, and job descriptions; levels and distribution of authority; decision making processes; key members of the management team and employees to be targeted for retention; compensation and performance management systems; policies on the use of space, communication and meeting management; value sets, associated behavioural norms and internal dynamics; how the workforce can influence the quality of output.

Since the 2007 article, many of the main advisors offering due diligence have prominently included an approach to assessing HC in their advertised services. As the article was published in the Harvard Business Review, it may be that it was read

by business executives in addition to academics and consequently may have generated more impact than previous articles. Examples of the advisors include Deloitte (Gribens et al., 2017); Ernst and Young (Deegan et al., 2013); PwC (Rimmer, 2018); Mercer (Cox and Moritt, 2015); Willis, Towers, Watson (Mercereau, 2018). Their approaches to due diligence typically are integrated into an overall Merger and Acquisition strategy comprising a staged process. The Deloitte approach (Deegan et al., op.cit.) offers a detailed account of current practice and reflects that defined by Harvey and Lusch (1998) and Schmidt (2002). It is portrayed as figure 2.9.1.1(b) below.

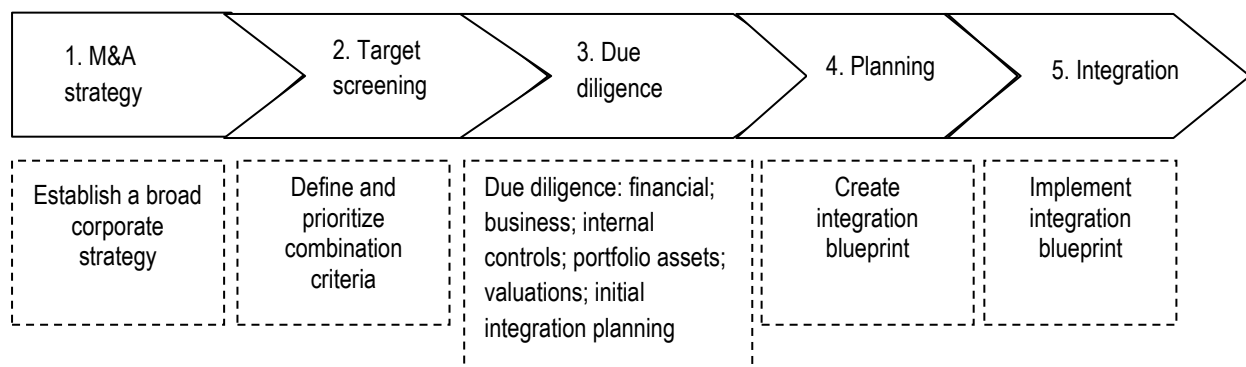


Figure 2.1.1.(b). The staged process of business combinations. Source Deegan et al., 2013

After establishing their Stage 1, an overall merger and acquisition strategy, Stage 2 involves ‘target screening’. This would focus on strategic fit and potential business risks relating to potential targets. In terms of human capital, this stage may investigate the characteristics of a top team and key specialist staff. It is the Deloitte stage 3 is where comprehensive due diligence would come in to play. Stage 3 would involve investigating the target organisation’s finances; business operations; control systems; portfolio of assets and opportunities; valuations for negotiation and

integration issues. The human capital issues would be incorporated into business operations and initial integration planning. It is this stage where the proposed instrument would be used in the context of medium sized enterprises. The Deloitte Stage 4 consists of integration planning, including people and culture issues which, at this stage, could benefit from the use of employee opinion surveys. Stage 5 would be the integration of the two organisations.

The standard Deloitte approach is well defined, but the exact sequencing and level of sophistication of such a process is dependent on the need for data verification; the multiplicity of sources; time restrictions; cost constraints and the competitive nature of a proposed combination (Ainsworth, op.cit.; Harvey and Lusch, op.cit.). Typically 'due diligence' in medium sized enterprises is carried out by a firm of solicitors or accountants or both, and often under time and cost constraints (DeMong et al. op.cit.; Van Teeffelen, op.cit). Human resource specialists have been seldom included when the size of contract is at SME level. (Watson Wyatt, 1998; Madsen and Slatten, 2017). Consequently, if designed with financial and legal professionals in mind, the availability of the proposed instrument would enable them to generate a defensible assessment of human capital in medium sized enterprises without the support of a human resources professional.

2.9.1.2 Due diligence before investments

As the definitions of due diligence focus on investigating and assessing business opportunities, it follows that this approach is also used before investing in a business (as opposed to buying, merging or integrating it). This aspect is discussed later in sections 2.5.5 (Investors are becoming more interested in human capital issues) and 2.9.3 (Current checklists for assessing a workforce).

2.9.2 WHEN BUSINESS COMBINATIONS FAIL

In the case of failed combinations, in many cases up to 30%, it is the softer human resource issues that have been a significant cause (Hunt, 1987; Wharton, 2005). Indeed Harding and Rouse (2007) maintain that 'understanding the culture of an organisation and the roles, capabilities and attitudes of its people is at best cursory and at worst nonexistent' (p.125)

In both welcome and unwelcome approach situations the Researcher judges a detailed assessment of the workforce should be carried out. This is for two reasons. Firstly there may be 'material' workforce weaknesses which could reduce an enterprise's value. Examples include a high turnover of key employees, poor management – union relationships or incompatible organisational cultures / strategies. It is these weaknesses on which many current 'due diligence' assessments focus. Secondly there may be significant strengths which could increase organisational value once a combination is completed, and which need to be retained. Examples include the employment of technical or administrative experts who are hard to replace, customer relationships which are dependent on specific individuals or teams or a particularly innovative culture having been developed. These strengths are less often investigated.

2.9.3 CURRENT CHECKLISTS FOR ASSESSING A WORKFORCE

Investors, nevertheless, are already aware of the need to include workforce characteristics as part of their assessment. This is evidenced by relatively informal assessments carried out by investors and by due diligence checklists commonly available on the Internet.

2.9.3.1 Relatively informal interview assessments

The Researcher listened to an ‘on stage’ discussion at The UK Investor Show (2016) between Paul Jordan of Amati Investors, and Nigel Wray a well known private investor and entrepreneur. They were asked about what they look for when interviewing executives from SMEs in which they were planning to invest.

In conversation, they generated the following criteria:

<u>Financial criteria</u>	<u>Non-financial criteria</u>
Basic financial fundamentals; Price – earnings ratio; Level of earnings; What the owners are paying themselves; The yield – small but there; A high margin; Cash generative; A growing asset base; Double digit growth; No pension deficit.	Founder managed A tail wind (positive market characteristics) Knowledge of the people involved - young people with good ideas. Strong team with ‘skin in the game’ (their own money invested in the business) Strong brands Looking beyond the visible horizon Is it driven by good people? Well managed: track record of the people Getting to know the moving parts of the business A good audience – that is lots of customers Good corporate governance – board diversity

Table 2.9.3 (a): Criteria currently used by investors in SMEs. Source: UK Investor Show 2016.

From the discussion it appears that institutional investors already use both financial and non-financial criteria when making a decision whether, and how much, to invest. The difference is that the financial data is well established and readily available in databases such as the website Really Essential Financial Statistics and in Annual Reports. There is no such equivalent which caters for non-financial information.

2.9.3.2 More formal due diligence checklists

Checklists are usually tailored to the circumstances encountered (Richie and Davis, 2011) but generalist lists may be found.

For example one used by a firm of solicitors (Glovers, 2014) is shown in the table 2.9.3.(b) below.

EMPLOYEES AND WORKERS

- Details of all employees, including age, date of commencement, salary and other benefits
- Directors' Service Agreements
- Employee handbook and/or policies
- Employee share schemes
- Health and safety at work policy
- Bribery Act Policy
- Details of any ongoing, pending or potential claims by current or former employees
- Details of any pension scheme operated

**Table 2.9.3 (b): Part of a due diligence checklist used by a firm of Solicitors.
Source: Glovers, 2014**

Part of a checklist used by a firm of accountants (Caprica, 2014) is shown in table 2.9.3. (c) below:

Employee due diligence

- Organisation chart
- What is the day to day role of the owners?
- Will replacements be required for the owners?
- Are any other employees vital to on-going operations?
- Standard employment contract
- Current salaries and benefits for each employee
- Terms of any staff bonuses or commission
- Details of any contractors utilised? (e.g. Service provided, rates, monthly cost)

**Table 2.9.3 (c): Part of a due diligence checklist used by a firm of Accountants.
Source: Caprica, 2014**

These checklists help uncover the obvious ‘material’ issues relating to a workforce. Turnover of key employees, holes in pension funding and regular strikes are not difficult to identify. Competence, commitment and adaptability are less so. The employee checklists currently used could be compared to looking under the bonnet of a car. It is easy to spot an oil leak, but more difficult to establish hidden problems such as an ageing timing belt. The former can be seen by an inexperienced eye. The latter needs an understanding of an engine to realise the danger. It is clear from the research outlined in section 2.9 above that intangible assets in general are valued by investors. An indication of the relative importance may be found from research in Germany which identified the range of intangibles acknowledged by investors (Durst and Gueldenberg, 2010) as shown in table 2.9.3 (d).

4.04	Customer relationships
3.94	SME Owner (assuming retention)
3.84	Innovative Capabilities
3.41	Knowledge Management
3.37	Employees
3.18	Organisation Culture
3.12	Organisation Structure
2.92	Other Networks

Table 2.9.3 (d): Relative importance of intangibles (maximum = 5) in SMEs according to German trade corporations and chambers of commerce. (Durst and Gueldenberg, 2010)

It is interesting to see both the constructs used and the relative position of ‘employees’. The construct terminology is more academic than colloquial, but this may be due to wording used by the researchers. Although ‘employees’ are relatively low down the ranking it should be noted that knowledge management, innovative

capabilities and customer relationships would be minimised without employee contributions. The main conclusion from this particular research is further confirmation that it is the interaction of intangibles that generates value rather than one individual asset.

In summary it is clear that investors acknowledge the potential value of intangibles, including HC; it is clear too that attempts to investigate risks associated with a workforce currently exist. What is missing is a comprehensive, valid and reliable approach to assessing workforce quality which is relatively quick to implement and at low cost.

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3. COMMENTARY ON THE LITERATURE

This Section comments on the findings from the literature review. The first sub-section comments on the variation in definitions; the second on the variation in enterprises studied; the third covers the variation in research design. Lastly, the implications for the current study's methodology are discussed. The commentary is made in the context that most studies reviewed have adopted a quantitative approach with associated assumptions and methodology. This is discussed in more detail in Section 5: The Research Strategy.

3.1 VARIATION IN DEFINITIONS

There has been no generally agreed definition, or set of factors, that make up the construct Intangible Assets (IA) Intellectual Capital (IC), nor the three key components Human Capital (HC), Organisational Capital (OC) and Relationship Capital (RC). This finding is discussed in more detail below.

3.1.1 DEFINING INTANGIBLE ASSETS / INTELLECTUAL CAPITAL

The construct of Intellectual Assets / Intellectual Capital has been described in many ways. For example: 'market assets; human centred assets; intellectual property assets and infrastructure assets' (Brooking, 1997, p.13); 'structural capital - all that is left behind when staff is going home - and human capital' (Edvinsson and Malone, 1997 p.11); claims to future benefits which have neither a physical nor financial embodiment (Lev, 2001 p5); talent, skills, know-how, know what, and relationships ... that can be used to create wealth' (Stewart, 1998 p.11)

In 2001 Bontis highlighted the range of alternative descriptors in use: intellectual capital, knowledge capital, knowledge organizations, learning organizations, organizational learning, information age, knowledge era, information assets, intangible assets, intangible management, hidden value'. (Bontis, 2001, p41).

This range of alternative definitions and descriptors makes it difficult to compare the results of the many studies into intangibles, and renders it necessary to choose one (from above) for use in the current study, or create a compilation. The next subsection creates a compilation for use in the current research. This focuses on Human Capital, but also includes other components of IA without which the assessment of HC would be compromised due to lack of data on, for example, Organisational and Relationship Capital.

3.1.2 DEFINING HUMAN CAPITAL

When investigating definitions in detail, the one component that is reflected, either directly or indirectly, is Human Capital. However, as with IA/IC, there has been limited agreement on the definition of, and factors comprising, Human Capital. Attempts to define HC include: 'resources that workers provide for their employers' (Baron and Armstrong. 2007, p.8); 'traits one brings to the job; ability to learn, and willingness to share information' (Fitz-enz, 2000, p.xii); 'attributes of acquired population quality which are valuable and can be augmented by appropriate investment' (Schultz,1979, p.21); 'a collegiate, flexible workforce supported by a range of human capital management practices' (Pfau and Kay. 2002, p.161). More recent studies do not agree on a definition: Sydler et al. (2014, p.4) opt for the definition 'all the tacit knowledge embedded in the company'. Hesketh (2014, p.4)

prefers to use ‘people’s competencies, capabilities and experience, and their motivations to innovate’ a definition proposed by the International Integrated Reporting Framework, (2013).

The current review has resulted in a definition of HC which reflects those factors commonly found in the literature: ‘the combination of competence, commitment and adaptability that creates value to an organisation’. This definition is developed in the form of a nomological net, outlined in section 6.1.3.

3.1.3 DEFINING RELATIONSHIP CAPITAL

Relationship Capital is well represented in the literature, but under different terminology. External Relationship Capital is also known as Customer Capital or Social Capital (Edvinsson and Malone, 1997; Maditinos et al., 2010). Social Capital has been subject to different interpretations. However defined, the literature review indicates that this component of IA / IC is an important one both on its own and when linked with HC. The linkage makes this component an important one to include in the proposed instrument. In this thesis the definition of Relationship Capital is ‘relationships between an organisation and its external stakeholders’.

Internal to the enterprise, Relationship Capital also has been subject to differing terminologies. These include organisational culture (Büschgens et al., 2013; Gillespie and Reader, 2017); internal communication (Tench et al., 2017); internal networking (Husain et al., 2016); teamwork / interdisciplinary synergies (Doherty, 2016). In the context of rapidly changing markets the characteristics of an enterprise’s internal culture can influence it’s ability to compete – or even survive

(Costanza et al. 2016). The definition adopted in this thesis is the 'network of relationships which exists between an enterprise and its internal stakeholders. These include the Directors; Senior Managers; Middle and Junior Managers; Supervisors; Technical Specialists and other members of the workforce'.

3.1.4 DEFINING ORGANISATIONAL CAPITAL

Organisational Capital also exists under other terminology, typically structural capital (Cater and Cater 2009); innovation capital (Madinios et al., 2010) and information capital (Chan and Chao, 2008). Cater and Cater concluded that structural capital probably can impact on outcomes by enabling an enterprise to differentiate itself from the competition. However, as with Relationship Capital, it is the interplay between Organisational Capital and Human Capital that generates the most influence.

In this thesis the definition used is that suggested by Martín-de-Castro et al, (2006): 'the culture, structure, organizational learning, and processes of an organisation which can generate a competitive advantage'

3.2 VARIATION IN ORGANISATIONS STUDIED

Over the last 50 years AI / IC and HC have been studied in enterprises ranging in size from micro through small and medium to large, including multi – nationals. Most of the research, however, has been directed towards large enterprises. Examples include: Bontis' exploratory study (1998) covering enterprises with a mean employee headcount of 8,731 and mean turnover \$588.15 million. As the minimum headcount in this study was 8, it did include some SMEs but it is not specified how many (ibid p.68); The Economist Intelligence Unit's survey of executive views on intangible assets (Molnar, 2004) covered enterprises in 27 countries and 30 industries with turnover of \$500 million plus (ibid p.2). In a more recent review of the literature Mention (2012) states that 'empirical analyses have been conducted in both large and small firm settings, though larger firms have clearly captured more attention' (ibid p. 12). Not all of the conclusions from studies focusing on large enterprises can be extrapolated to SMEs. For example in SMEs, typically, there is more reliance on tacit knowledge and less on codified knowledge (Nunes et al., 2006). It is therefore necessary to review the studies aimed specifically at SMEs.

As explained in sub-section 2.8.2, it was around 2004 that HC in SMEs began to make a presence in academic journals, but the number of studies focusing on HC in SMEs is far lower than those in larger enterprises. This is demonstrated in figure 3.2 below. Using ABI Inform, the Researcher carried out a search for international peer reviewed studies focussing on HC, firstly including 'SME' in the title or abstract; then excluding 'SME' from the title or abstract. As an example, in 2016 the count for the former was 723 and the latter, 10363.

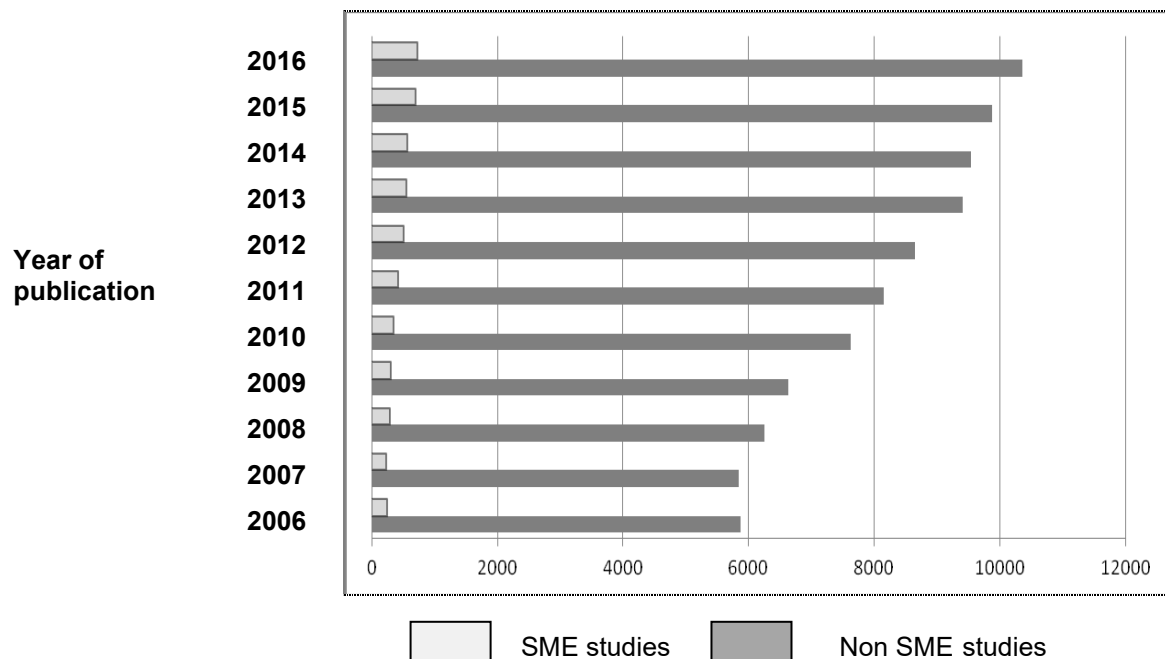


Figure 3.2: The number of peer reviewed HC studies specifying SME with those not specifying SME.
Source ABI Inform

One reason for the apparent lack of relevant studies in SMEs is that the terms Intellectual Assets and Human Capital are not commonly used. The literature suggests that owners and managers are aware of the potential costs and benefits of competent, committed and adaptable employees. However, they use less ‘management – speak’, preferring more colloquial terminologies (Van Wanrooy, 2013).

The second reason that there appears to be little published research into HC in SMEs is that it has been conflated into IA / IC. IA / IC in turn has been investigated using different terminology covering, for example, strategy & entrepreneurship; learning & knowledge management, and innovation (St-Pierre and Audet, 2011; Easterby-Smith et al., 2012).

In the case of SMEs, one further element of variation relates to the age of the organisation. Organisational age is seldom specified in such studies, but this can have an impact on organisational outcomes and thus influence any findings relating to AI / IC / HC and outcomes. For example younger enterprises may well value growth over profitability. For older enterprises the reverse may apply.

In addition to size and age, an enterprise's business strategy (Miles and Snow, 1978) means that different factors making up the construct of HC may have differing levels of value. For example SMEs that focus on product development and market penetration may value innovative skills and risk taking. Those focussing on larger scale manufacturing strategies may value cost containment skills and are likely to minimise risk taking. This has implications for levels of external validity because results from one industry / strategy would not be able to be generalised to another.

3.3 VARIATION IN RESEARCH DESIGN

The lack of agreed definitions, and variation in enterprises studied, is compounded by a variation in research design. This sub section outlines reasons for this variability.

3.3.1 VARYING LEVELS OF ORGANISATIONAL ANALYSIS

It has been shown that research into HC in large enterprises constitutes the majority of studies found. However, these studies differ in themselves by using different levels of analysis. Some study enterprises in their entirety (e.g. Guest et al., 2003) others focus more on individual organisational units (e.g. Wright et al., 2005).

Strengths and weaknesses are associated with both approaches. 'All organisation' approaches do enable the use of more objective data to measure outcome variables, for example annual turnover, profitability or sales per head. But, in the case of larger enterprises, the assumption that HC management practices, and associated HC, are evenly deployed throughout an enterprise is not always warranted.

Focussing on individual organisational units has the merit of assuming a more even deployment of HC and HC management practices. However, in many cases, the outcome variable has been more subjective in nature, with associated errors of measurement. For example it has been practice to obtain subjective data on both HC and organisational outcomes from one executive in an enterprise (e.g. Delaney and Huselid, 1996).

3.3.2 LIMITED EXPLANATION OF A CAUSAL PATHWAY

Research into HC in both SMEs and larger enterprises has been primarily 'natural' and 'cross sectional' in nature. The majority of research using this methodology has identified a relationship between AI / IC / HC and organisational outcomes (however defined) but there have been mixed results. For example Newbert (2007) reviewed the results of 33 studies and found only 11 supported the hypothesis that organisational outcomes correlate positively with HC.

Also the use of 'natural' studies means that extraneous variables have not been controlled and consequently there has been limited proof of causality. Nevertheless, one study has claimed to have identified likely causality and this design is longitudinal. The findings were that practices focussed on creating and maintaining HC are leading indicators of shareholder value: 'our analysis demonstrates that (HC management) practices are not only associated with business outcomes, but also create them' (Pfau and Kay. 2002, p.4).

Causality has been, and is likely to remain, elusive. However, it is not a critical element of the current study. The main issue to be established is whether an assessment of high HC value is (among other management practices) strongly associated with flexibility of business strategy and variation in investor intentions.

3.3.3 VARIATION IN THE SPECIFICATION OF PREDICTOR VARIABLES

Although studies of HC in large enterprises have used similar factors to describe HC (e.g. competence, commitment, adaptability), there has been a variation in the definition of predictor variables investigated. Examples include levels of education;

levels of experience; organisational commitment and management know-how. Furthermore, not all current approaches to HC assessment include the two other key components (Organisational Capital and Relationship Capital) without which HC has been found to be less influential.

3.3.4 VARIATION IN THE CHOICE OF OUTCOME VARIABLES

Since Barney's seminal paper on Resource Based Strategy (1991) there have been numerous efforts to assess the impact of IA / IC, (Teece, 2003) and HC (Bosma et al., 2004). In order to do this there has been variation in the choice of organisational outcomes / outcome variables.

Outcomes such as revenue and profitability are subject to numerous confounding variables (e.g. quality improvement campaigns and technological improvements) running in parallel with HC management practices (Nystrom et al., 2014). The existence of such confounding variables can reduce the level of internal validity of a study because the respective contribution of each variable is unclear.

There have also been studies showing correlations with outcomes, such as improved morale or reduced employee turnover (e.g. Veth et al., 2017). In the context of the current study, it is necessary to establish whether such proximal outcomes would be of interest to Investment Analysts. It is clear that they are interested in distal financial metrics (Slater, 2017) but an interest in proximal outcomes needs to be established during the early stages of the research.

3.3.5 VARIATION IN DATA COLLECTION

In addition to the variation on the choice of in outcome / target variables, studies have not been consistent on the choice of approaches to data collection. Variability

is based on whether univariate or multivariate variables are used, (Steers, 1975; Richard et al., 2009) and whether objective or subjective data is collected (Vij and Bedi, 2016; Yeo 2003).

The use of univariate outcome/target variables was criticised by Thorndike as early as 1949. Campbell's later review (1973) identified 19 univariate variables in use at the time. The univariate option is attractive in the sense that it is likely to be quicker to collect such data. However, few enterprises evaluate their success using one criterion, for example Kaplan and Norton's balanced scorecard uses four main perspectives, and so the multivariate option is likely to be a more defensible one.

The use of the multivariate approach has enabled the integration of outcome / target variables. For example Child (1975) combined profitability and growth. This approach is likely to reflect the range of planned outcomes relating to any given enterprise. However, it suffers from the issue of variability in that there is no agreement on which ones to include in the mix (Steer, 1975).

The second issue relating to variation in data collection is that different studies use different sources of data. Some use relatively objective sources, some subjective. Objective sources use internally focused data on performance (key performance indicators) and externally focused data on performance (market share, profitability). Subjective sources are based on the viewpoint of individuals within an enterprise and are either a 'general feel' relating to the variable, or are 'quasi-subjective' based on objective information. The primarily subjective approach has the advantage that any assessments may be tailored to the needs of the study. However, there are risks of psychological bias (Gilovich et al., 2002; Rosenzweig, 2007; Milkman et al. 2009).

Indeed over 700 directors surveyed by McKinsey (2013) acknowledged this by rating the need to reduce decision making bias as their top priority.

3.4 IMPLICATIONS FOR THIS STUDY'S METHODOLOGY

Some implications for this study's methodology, based on the literature review are outlined below. These will be confirmed after discussing methodology in more detail in section 5.4.

3.4.1 NOMOLOGICAL NETWORK

It will be necessary to construct a nomological network in order to define what is, and what is not, to be incorporated into the proposed instrument. For example, although the focus will be on Human Capital, Organisational and Relationship Capital are also necessary components of the proposed instrument. Secondly, although formal Strategic HRM may not be part of the instrument, its inclusion of HRM in the form of management practices is likely to be relevant to investors.

3.4.2 LEVEL OF ANALYSIS

Starting from the research proposal it has been medium sized enterprises (headcount between 50 and 250) that have been the focus of the study. The literature review has confirmed that this is a suitable level of analysis because there is little that enables a comprehensive and systematic analysis of Intellectual Capital, nor Human Capital, in SMEs.

3.4.3 CAUSAL PATHWAY

A causal pathway is not a feasible proposition without a longitudinal research study over a number of years. This is what the Watson Wyatt research managed to carry out (Hornstein et al., 2002) but few others have done so. The best that can be achieved using a cross sectional study is to find a correlation between predictor

variables and outcome variables. From the literature review it is likely that any correlation will depend on the definition of predictor and outcome variables.

3.4.4 PREDICTOR VARIABLES

The predictor variables for this study will be the factors that are identified by exploratory and confirmatory factor analysis of data generated by surveys of SME executives. It is unlikely that all factors will be positively correlated with an outcome variable. Indeed the Watson Wyatt study (ibid) found that of employee training and development was negatively correlated to a financially oriented outcome variable.

3.4.5 OUTCOME VARIABLES

There are 3 outcome variables envisaged for this study.

3.4.5.1 Enterprise revenues

In the context of enterprise outcomes, use of a multivariate variable would be the first choice, but this has to be tempered by the need to create an easily completed executive survey with minimum levels of intrusiveness. In the context of this study the outcome variable needs to be one which is easily available and not one seen to be commercially confidential. Accordingly the variable chosen is likely to be the variation in enterprise revenues over a three year period. The literature review has shown that there is likely to be a weak correlation between the predictor variable and change in revenue. This reflects the argument that the information generated by the proposed instrument is not already reflected in the 'financials' used by investors and analysts.

3.4.5.2 Strategic agility

The Resource Based View suggests that the adaptability of internal resources is an important factor in enterprise survival and competitiveness. As such, investors are likely to be interested in the ability of an enterprise to react to changing market conditions. Consequently an assessment of enterprise agility is likely to be the second outcome variable.

3.4.5.3 Changes to investor intentions

In the context of identifying changes in levels of investment, it is unlikely that enough data would be generated by carrying out field experiments on live investment decisions. Firstly, gaining access to investors is likely to be a barrier and secondly the time taken to use a draft instrument within SMEs would be prohibitive. The outcome variable chosen is likely to be changes in investment intentions indicated by investors as a result of being exposed to a range of potential Human, Organisational and Relationship Capital factors.

3.4.6 DATA COLLECTION

Data collection will be in the form of investor and executive surveys in order to generate data for statistical analysis (e.g. ordinal or interval data and close to a normal distribution).

A survey of Subject Matter Experts would confirm the face and content validity of the proposed instrument. An investor survey would ascertain the level of interest in HC in general and also identify levels of influence specific aspects of HC would have on investor intentions. An executive survey would identify the feasibility of assessing

HC in SMEs, establish a database for comparison purposes and generate data which will enable the instrument attributes reliability, validity and generalisability to be demonstrated.

4. SUMMARY

This Section summarises the work carried out to complete the literature review.

4.1 ESTABLISHING WORKING DEFINITIONS

The initial work focussed on establishing the definitions of Human Capital, Organisational Capital and Relationship Capital and identified other terminologies being used in the study of Intellectual Assets / Intellectual Capital.

4.2 IDENTIFYING THE NEED TO INCORPORATE COMBINATIONS OF INTANGIBLE ASSETS

The review identified that Human Capital may well have a direct impact on enterprise outcomes, but that it is the combination of Human, Organisational and Relationship Capital that generates the greatest impact. It was also determined that the various combinations of these intangibles are described in the literature in terms of absorptive capacity, dynamic capabilities, entrepreneurship, knowledge management and innovation.

4.3 REVIEWING THE IMPACT OF HUMAN CAPITAL ON THE OUTCOMES OF LARGE ENTERPRISES

Human Capital was found to have influence on large enterprise outcomes both directly and as a component of intangible combinations. The influence has been more difficult to establish due to the variation in terminologies used, the choice of independent variables and the choice of dependent variables.

4.4 IDENTIFYING THE FACTORS ALREADY USED TO ASSESS HUMAN CAPITAL

Based on assessment instruments already used primarily in large enterprises, it was feasible to identify a range of components which may be appropriate for inclusion in the proposed instrument. These were defined as leadership; strategic agility; external relationships; workforce composition; organisation makeup; workforce competence; workforce commitment; internal relationships; workforce adaptability; workforce risks and costs.

4.5 DETERMINING THERE ARE DIFFERENCES BETWEEN SMEs AND LARGE ENTERPRISES

It is important to establish that there are in fact differences between large and medium sized enterprises; otherwise the need for a new instrument is significantly diminished. The conclusion reached is that there are similarities, but enough differences to merit the development of the instrument. The differences depend on the size and maturity of an SME and the industry in which it operates. However, it is likely that any given SME may differ based on more emphasis on 'defender' or 'reactor' strategies; the increased use of internally generated funds; a more flexible organisational structure with 'loose' leadership style; less sophisticated information technology; and less integrated people management systems. Perhaps the biggest difference is in the recruitment and retention of experienced employees who are able to make an early impact without training.

4.6 CONFIRMING THAT INTANGIBLE ASSETS ALSO HAVE AN INFLUENCE ON THE OUTCOMES OF SMEs

The Review also identified the influence of Human, Organisational and Relationship Capital on SMEs. It further confirmed that it is the combination of such intangibles that creates the most influence. The most researched clusters are those of entrepreneurship, knowledge management and organisational learning and innovation.

4.7 DEMONSTRATING THE NEED FOR AN INSTRUMENT

There are 3 main arguments that indicate a need for the proposed instrument. The first is that current approaches used by large enterprises, although well researched and validated, require high levels of investment in time and funds to implement and maintain. Secondly there is increasing awareness among executives that there are circumstances when they need to demonstrate the quality of their workforce. These include annual directors' and corporate social responsibility reports which, although voluntary for SMEs, are seen to be good practice. Thirdly there is increasing evidence that investors appreciate the need to understand the characteristics of Human Capital in enterprises in which they wish to invest. If they are not already in situ, the current approaches to assessing IC / HC cannot be implemented quickly enough to meet the demands of due diligence.

4.8 THE WEAKNESSES IN CURRENT RESEARCH INTO HUMAN CAPITAL

Lastly the characteristics and weaknesses in current research have been identified. The main weaknesses relate to the levels of variability in construct definitions, variability in choice of independent and dependent variables, emphasis on large enterprises and lack of specification in describing the characteristics of SMEs studied.

5. THE RESEARCH STRATEGY

The research strategy is based on the recommendations made by Collis and Hussey (2009); Field and Hole (2011); Bryman and Bell (2015) and Saunders et al. (2015). The approach, depicted as figure 5.0, consists of six main steps: (1) the research interest; (2) the research gap; (3) the research question; (4) research paradigms; (5) the research methodology and (6) the research methods. These steps are depicted in a figure which is repeated throughout this section. The first is shown as figure 5.1 below.

5.1 THE RESEARCH INTEREST

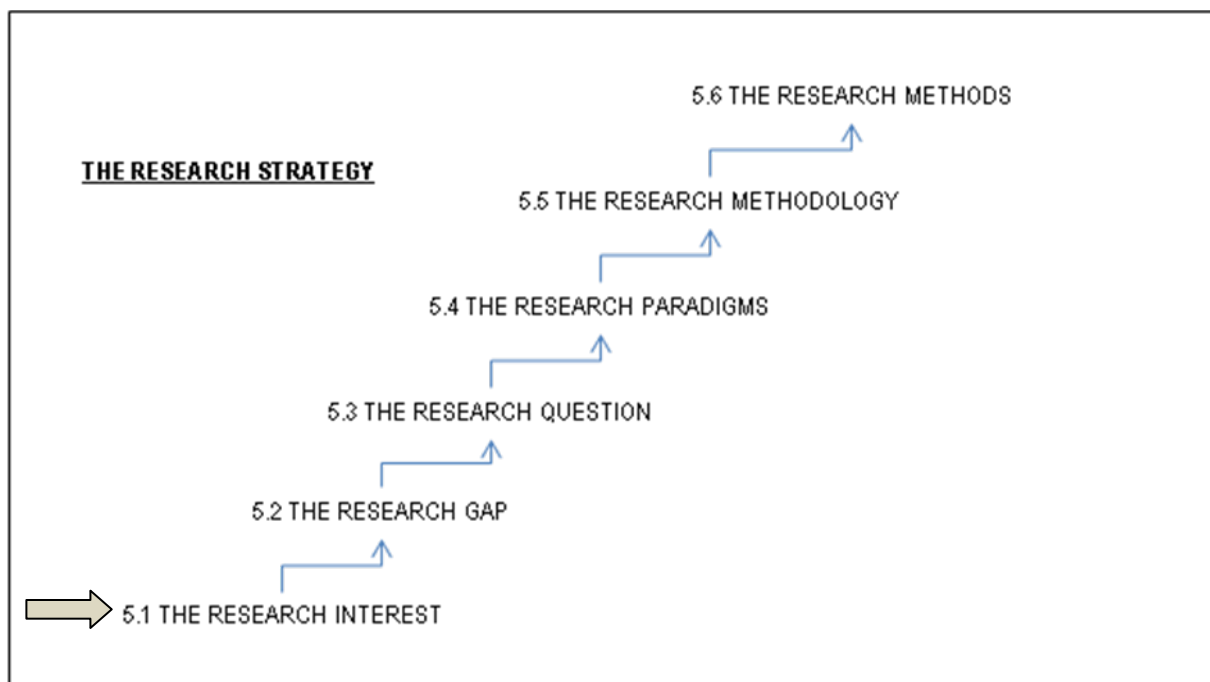


Figure 5.1: Steps in the research strategy: The Research Interest.
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

From the literature review, it is clear that commentary on the management of HC is not new. It originated in the 18th Century and has continued as a research issue throughout the 19th and 20th Centuries culminating in the UK in the 21st Century with

a wide range of journal articles (Schultz, op cit; Jovanovic, 1979; Coleman, 1988; Sweetland, 1996; Hatch and Dyer, 2004; Ployhart and Moliterno, 2011; Coff and Raffee, 2015) and books on the subject (Gratton, 2000; Fitz-Enz, 2000; Mayo, 2001; Baron and Armstrong 2007). In 2014 a multi-agency research programme (Valuing your Talent, 2014) was initiated. This aims to develop a framework for HC measurement in large enterprises. The latest publication reported on whether 'people data' is of any interest to investors (Houghton et al. 2017).

With respect to large enterprises, the literature review has identified a strong and developing interest in growing and retaining HC. This growth and retention is brought about by the systematic application of HRM (SHRM) . There is also evidence that HRM is beginning to be used more professionally in some, but not all SMEs.

The review has shown that there are approaches which aim systematically to assess the way that enterprises grow and retain their HC (for example Investor in People; British Quality Foundation assessment of Business Excellence). These approaches are used by large, medium and small enterprises. There is also a range of instruments available which specialise in the subsequent assessment of HC value (e.g. The Human Capital Monitor). Compared to the proposed instrument, they are relatively complex and time consuming to administer and typically based on research into large enterprises. For example the book describing the Human Capital Monitor (Mayo, 2001) contains examples of 42 large enterprises excluding consultancies (e.g. BAE Systems; Glaxo; General Motors; Nestle; Pfizer; Rolls Royce) and one with a headcount of less than 250 (Lightlab).

Despite the wide range of commentaries and research programmes, there is little to be found which is quantitative in nature and which focuses on HC in SMEs and. It is this issue which has generated the current research interest: to determine whether it is possible to make a valid and reliable assessment of the value of HC in medium sized enterprises which subsequently influences the level of investment offered.

5.2 THE RESEARCH GAP

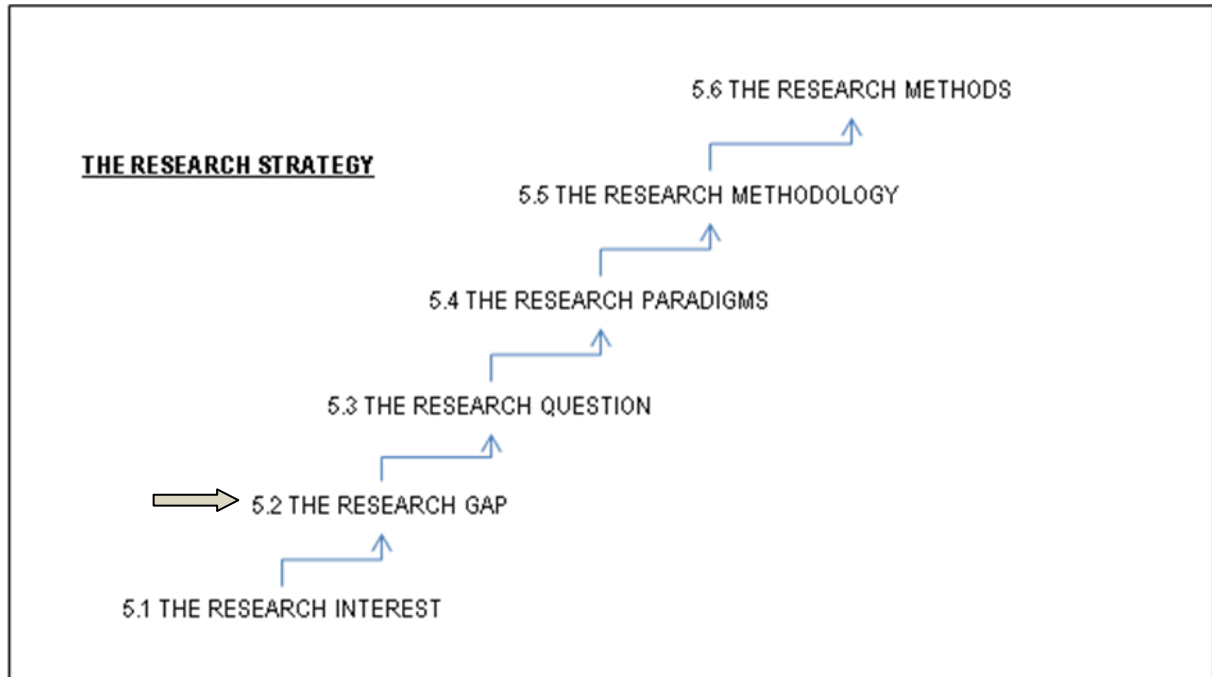


Figure 5.2: Steps in the research strategy: The Research Gap.
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

The current literature review has, therefore, identified a gap in the form of quantitative assessment of HC in SMEs. However, there has been criticism of the use of gap identification when used alone to establish research questions (Alvesson and Sandberg, 2011). Accordingly, this section will build on the identified gap by using Alvesson and Sandberg's method of problematization. This involves reviewing the domain of literature from which the gap has been identified; identifying the underlying assumptions on which a potential question would be based; evaluating those assumptions; generating alternatives; considering potential audiences and then evaluating the alternatives.

5.2.1 THE DOMAIN OF LITERATURE

The literature review revealed three domains. The first relates to the articles and books describing the influence of HRM on both proximal and distal organisational outcomes. This domain is of relevance to the proposed research because it is the outcomes of such HR practices (e.g. organisation infrastructure; effectiveness of relationships; employee competence, commitment and adaptability) which generate Human Capital.

The second domain relates to the articles and books on HC which are based on research into both large national and multi-national enterprises. These too are of interest because both the variation in the research design and the factors used to define HC can be used to inform the current research.

The third domain covers research into SMEs. As explained in section 2.8, SMEs are aware of the value of HRM, although they are more likely to use more colloquial language, for example calling it 'people management' or 'people and organisation'. Also owners and managers in SMEs are likely to be as concerned about HC as those in large enterprises, possibly more so. This is because the leakage of 'know-how' could well have a greater impact on small or medium sized enterprises. However, the literature indicates that SMEs are different to large enterprises, particularly with respect to workforce characteristics. Consequently there are difficulties in extrapolating research findings from large enterprises to SMEs.

From these three domains it is possible to envisage a number of underlying assumptions. These are discussed in the following sections.

5.2.2 SPECIFYING UNDERLYING ASSUMPTIONS

Underlying assumptions are classified by Alvesson and Sandberg (ibid) as 'in house'; 'root metaphor'; 'paradigm based'; 'ideological' and 'field based'. These are discussed below.

5.2.2.1 In house assumptions

The literature review has demonstrated that assumptions relating to HC are not exclusive to one 'house'. It has been shown that the construct has been researched using a range of different academic lenses or 'houses'. Examples include philosophers, politicians, and economists as well as human resource specialists. As such, the Researcher judges that no single in-house assumption impacts on the current research.

5.2.2.2 Root metaphor assumptions

Metaphors concerning organisations have been numerous over the years (Morgan, 1980; Cleary and Packard, 1992; Palmer and Dunford, 1996; Cornelissen et al., 2011). Three stand out as being relevant to the current research.

The first two are used by Senge et al. (2014) who visualise organisational change as a dance on an atlas. They describe the dynamics of organisational change in terms of a dance covering initiation of change; sustaining improvement activities and subsequent organisation redesign. The dance metaphor reflects the need for an organization to be aware of its surroundings and continuously on the move. Their atlas is the map of which steps are commonly taken to respond to changing environments. These two metaphors are relevant because enterprises and people in

them people are continually subject to pressure of change which requires continuous adaptations.

The third metaphor is from Ployhart et al. (2009) who compare people in an enterprise to the water in a bath. People are continually flowing in (recruitment) and out (separations). The aim is to maintain a critical mass of water in the bath or critical mass of people in an enterprise. This has relevance because, although enterprises can minimize the HC flow using effective HR practices, the flow cannot be stopped. Consequently the value of HC may well vary over time.

5.2.2.3 Paradigm assumptions

Research into HC has been carried out using mainly positivist, but also interpretive, paradigms with associated methodologies and methods. Paradigm assumptions are discussed in more detail later in section 5.4. They are outlined here in order to comprehensively follow Alvesson and Sandberg's method of problematization.

Positivists assume reality exists independently of the researcher who will approach an issue impartially in order to uncover 'the truth' about an issue. Constructs are assumed to have an independent existence which can be discovered via research. An example of this approach is the development of a model of motivation through job design which involved collecting data from over 600 employees working in 60+ different types of work (Hackman and Oldham, 1976). Another is the work carried out by Huselid (1995) who carried out research into HRM and its impact on organisational outcomes.

Interpretivists view reality as being subjective in nature, subject to contextual factors and differing from person to person, organisation to organisation. 'Truth' is consequently in the eyes of the individual and there may be as many 'truths' as individuals / organisations. An example of this approach is the work carried out by Prasad (1993) into symbolic processes evolving during the implementation of technical change. Another is the work of Hochschild (1983) on the development of the concept of emotional labour.

These assumptions are relevant because they inform the most appropriate methodology and methods with which to investigate the research issue(s). Paradigm assumptions are reviewed in more detail in section 5.4

5.2.2.4 Ideological assumptions

Researchers have, in the main, assumed that HC is a 'good thing' and the influence that HC has on organisational outcomes is likely to be favourable. Few expect a negative correlation between HC, however defined, and organisational outcomes, however defined. However, there have been some unexpectedly negative correlations, for example a negative one between developmental training, excessive paternalism and organisational profitability (Watson Wyatt, 2002 p.17). These are relevant because it would be dangerous to assume the retention and development of HC always generates positive outcomes for an enterprise.

5.2.2.5 Field based assumptions

Field based assumptions, those shared by a number of different schools of thought, are common. Organisational HC is assumed to emerge from a combination of

individual HC with emergence facilitated by organisational enablers; higher levels of individual HC are assumed to form a higher level of organisational HC; Organisational HC is highlighted as both a key element of intangible assets (Edvinsson and Malone, 1997) and a driver of all intangibles (Kaplan and Norton, 2004). These assumptions are relevant because it may not always follow that the value of organisational HC is equal to or more than the value of the combination of individual HC within an enterprise. Interpersonal and/or inter-unit conflict may result in a reduction in the value of HC.

5.2.3 EVALUATION OF THE ASSUMPTIONS

The assumptions outlined above potentially have a significant influence on the design and interpretation of the proposed research as follows.

5.2.3.1 Positivist methods alone may not be sufficient

Assumptions based on positivism are relevant to the current research. The assumptions are that HC exists independently of the researcher, can be discovered and be measured. By doing this an instrument can be created which can compare the value of HC between enterprises.

However, the literature search has also revealed that no enterprise is the same, varying by size, industry, culture and strategic intent. It follows therefore that the Interpretivists' view of reality may be relevant to the current research. Data collected using positivist methods may benefit from augmentation using interpretivist methods. This will be discussed in more detail later in the following section 5.4.2.

5.2.3.2 Organisations adapt to continuously changing markets

An effort to assess the quality of HC in an enterprise needs to take into account the circumstances in which the assessment takes place. The existing mix of competence, commitment and adaptability may be of value at the time of assessment but could rapidly become outdated with changing market conditions.

5.2.3.3 The value of Human Capital could change due to separations and appointments

The root metaphor assumption relating to the flow of water in and out of a bath demonstrates that the value of HC may vary from quarter to quarter, depending on the turnover of employees. As such any metric and subsequent assessment will be valid only for a short time unless it is clear that steps are being taken to retain key employees.

5.2.3.4 The value of Human Capital may not be emergent

It is assumed that the value of HC within an enterprise is greater than the sum of individual employee HC: it is emergent as a result of organisational enablers. However, this is not necessarily a valid assumption as differing combinations of individual HC may result in lower organisational HC as a result of ineffective appointments, misunderstandings and internal conflict. As such any variation in levels of investment could be reduced as a result of the assessment of HC value.

5.2.3.5 Human Capital may not be valuable at all

Research could commence with the assumption that there will be a relationship between HC and organisational outcomes, that is, data relating to HC once

assessed, would be likely to vary levels of investment. However, it does not follow that variation would necessarily be 'upward'. The assessment may result in the opposite judgement, that a lower level of investment may be offered.

5.2.4 FORMULATING ALTERNATIVE SOLUTIONS

Based on the above evaluations, the following alternative assumptions may be generated:

- The use of positivist methods alone may not be sufficient. Qualitatively derived information may enhance any assessment being made.
- In some enterprises, the value of HC could vary so much (due to market fluctuations and employee turnover) that a 'snapshot' may be of limited utility when carrying out due diligence;
- A combination of individual HC may result in the value of organisational HC being less than the sum of its individual parts due to ineffective organisational processes.

Consequently there may not always be a positive relationship between organisational HC and organisational outcomes.

5.2.5 CONSIDERING THE POTENTIAL AUDIENCE

The potential audience for the research is expected initially to be the academic community. However, subsequent publications are expected to be of interest to investors, investment advisors and the owners / managers of SMEs. As such the instrument emerging from this research should use more colloquial language, minimising the use of academic language.

5.2.6 EVALUATING THE ALTERNATIVES

Based on the initial underlying assumptions and the proposed alternatives, the researcher has arrived at the following conclusions:

5.2.6.1 Using interpretive methods to support positivist data

Consideration should be given to using interpretive methods to support positivist data. For example, it may be appropriate to use interpretive methods such as policy documents and / or management meeting minutes to support quantitative ratings.

5.2.6.2 The instrument should enable an assessment of how well an SME adapts to its changing markets

An instrument should include an assessment of how an SME tracks changes in its markets and how experienced it is in adapting to change.

5.2.6.3 The instrument should include enablers

The instrument should include an assessment of the effectiveness of organisation enablers which facilitate the retention, growth and influence of organisational HC. These would include Organisational Capital and Relationship Capital.

5.2.6.4 Evaluation should include the possibility of reduced investments

Methodology used to evaluate the value of organisational HC should anticipate that negative value is possible and that consequent investment decisions could result in reduced investments.

5.3 THE RESEARCH QUESTION

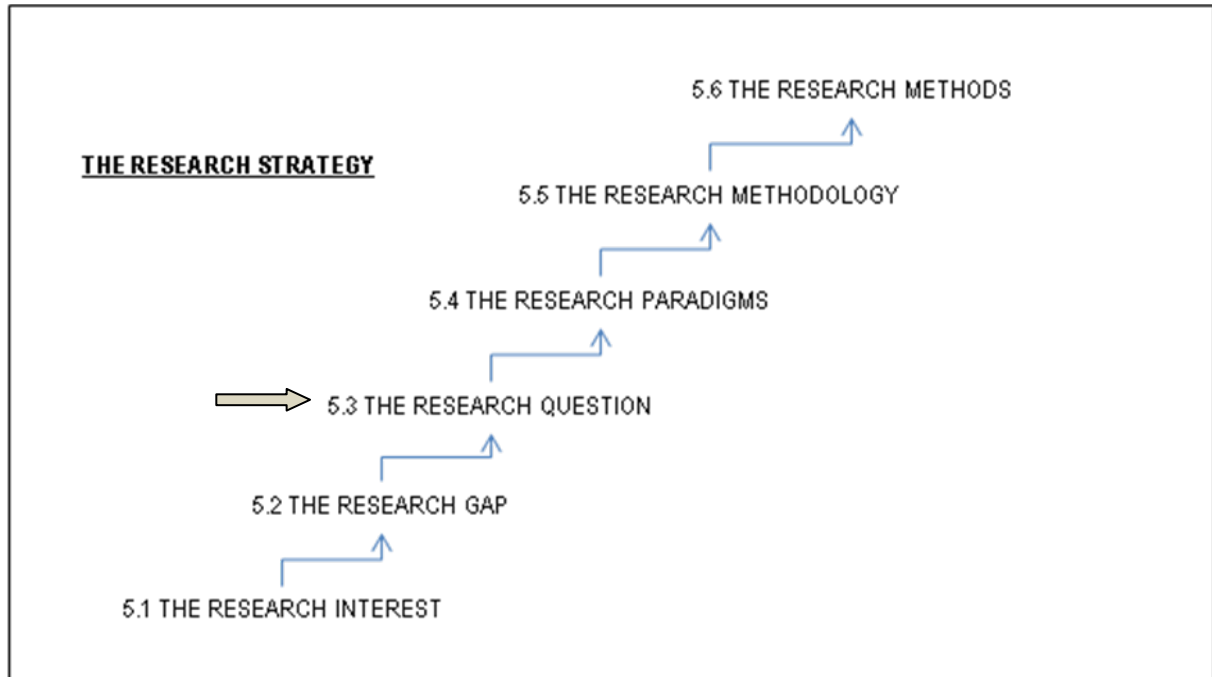


Figure 5.3: Steps in the research strategy: The Research Question
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

Accordingly, the research question relating to the current study is: how much can a valid and reliable assessment of Human Capital within a medium-sized enterprise influence an investor's intended level of investment in that enterprise? There are 4 associated hypotheses which relate to the question:

H₁ A valid and reliable assessment of Human Capital within medium sized enterprises is achievable;

H₂ Higher levels of Human Capital within medium sized enterprises are only weakly correlated with increases in enterprise revenue and so provide information to investors in addition to financial information.

H₃ Higher levels of Human Capital within medium sized enterprises are correlated with higher levels of strategic agility.

H₄ Medium sized enterprises with higher levels of Human Capital will result in higher levels of intended investment.

5.4 THE RESEARCH PARADIGMS

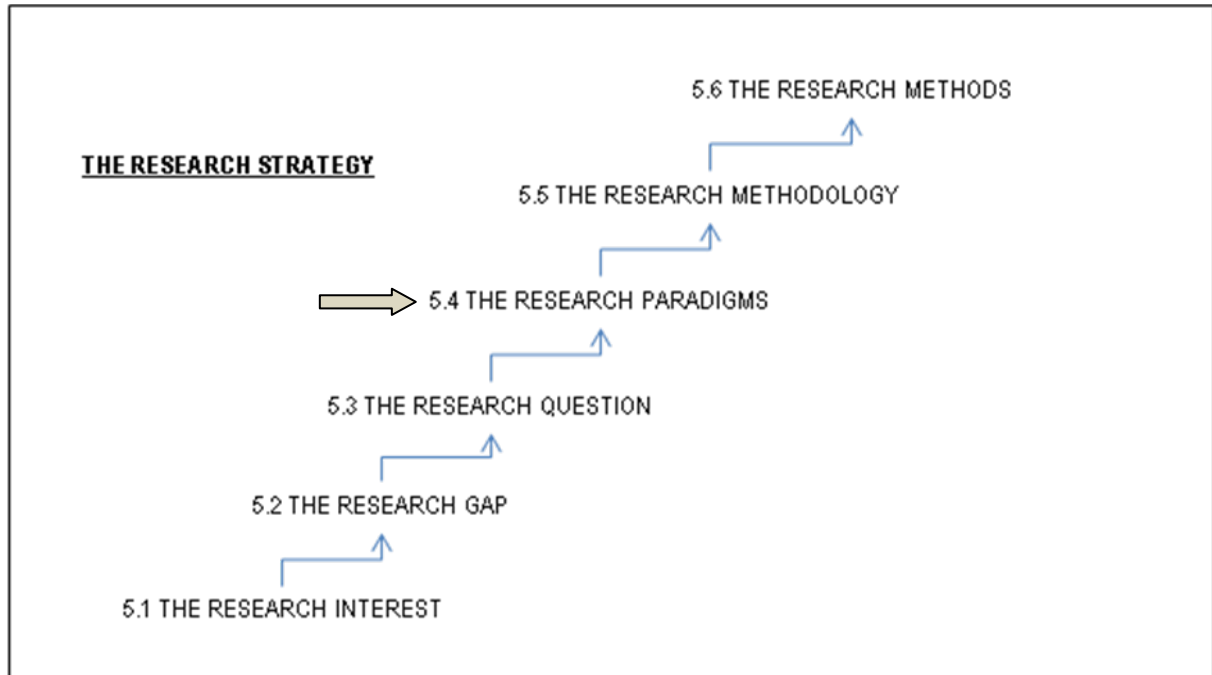


Figure 5.4 : Steps in the research strategy: The Research Paradigms
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

One range of assumptions introduced in sub-section 5.2.2.3 relates to paradigms on which to base research methodology and methods. This section reviews these in more detail.

5.4.1 BACKGROUND TO PARADIGM ASSUMPTIONS

Paradigms have influenced the way commentators and researchers have viewed the world since the theories proposed by Plato (The Academy, circa 385 BC) and Aristotle (The Lyceum, circa 335 BC). However, most contemporary commentary on the importance of paradigm thinking, outlined below, starts with *The Structure of Scientific Revolutions* (Kuhn, 1962). Kuhn reviewed the way that science has developed over the centuries and used the word paradigm regularly. He specified

that the construct related to 'research ... committed to the same rules and standards for scientific practice' (Kuhn, 1962, p.2). In the *Structure of Scientific Revolutions* Kuhn argued that, to understand the development of scientific achievements over the years, it is necessary to understand the intellectual frameworks within which scientists have worked. Kuhn proposed that the development of a science has occurred in a series of phases. An existing phase he termed 'normal science', where a community of researchers share a common intellectual framework used to research issues of the day - a paradigm.

When it is found that the existing paradigm cannot resolve some of the research questions of the day, researchers gradually come to the conclusion that it is not fit for purpose and needs to be substituted by another one. This has been commonly called 'paradigm shift'. Kuhn believed that sequential paradigms exhibited the characteristic of 'incommensurability' or mutual exclusivity. That is, the rules, standards and assumptions used in research working within the boundaries of one paradigm are incommensurable with those of a successive paradigm. Kuhn also subsequently developed the view that contemporaneous paradigms are also incommensurable due to the different training received by researchers.

Since Kuhn, there have been a number of debates concerning the nature of paradigms. The debates have described a paradigm as a way of thinking and doing (Harman, 1970); a way of defining what to study, what to ask, and how to interpret answers (Ritzer, 1975); a range of regulations that sets boundaries as to what is studied and how (Barker, 1992) or a view of the world that defines its nature, its parts and how they inter-relate together (Guba and Lincoln, 1994).

Paradigms, therefore, influence the way a research project is designed and implemented. It is therefore important to explore in more detail the specific components of paradigm thinking. Burrell and Morgan (1979) specify that paradigm components include ontology, epistemology, human nature and methodology. Guba and Lincoln (op. cit.) agree that paradigms commonly consist of ontological, epistemological and methodological issues but Heron and Reason (1997) also include axiological issues. The remaining part of this section explores these issues in more detail.

5.4.1.1 Ontological issues

In the context of social science, (as opposed to, for example, computer science) ontology is concerned with 'what kind of things can be said to exist, the conditions of their existence and the relationships between the things' (Blaikie, 2007, p.178).

These ontological research issues focus on the nature of reality, that is, whether a researcher believes that reality is formed in the mind or whether it is something which is 'out there' and is independent of the researcher.

Ontological considerations are typically viewed as generating two conceptually different viewpoints: objectivism and constructivism (Bryman and Bell, 2007). Some commentators use the terminology realist and subjectivist (Levers, 2013; Maton, 2013). Some see these viewpoints as mutually exclusive (Pegues, 2007) but others see them more likely to be on a continuum with some possibilities of overlap and / or providing mutual benefit (Giddens, 1984 as cited in Bryman and Bell, 2007; Lee, 1991). Researchers working in the context of an objectivist / realist viewpoint see social and psychological phenomena as consisting of external entities which are

separate from, and less likely to be influenced by, the researcher (e.g. Watson, 1913; Skinner, 1938). Those working in the context of a constructivist / subjectivist viewpoint view social phenomena as being entities which are subjective in nature and in a continuous state of flux (Strauss et al., 1973). Constructivists / subjectivists view the changing state as being influenced by a researcher.

5.4.1.2 Epistemological issues

Epistemology may be defined as 'the study of the criteria by which we can know what does and does not constitute warranted, or scientific, knowledge' (Johnson and Duberley, 2000, p.3). It determines the criteria by which it is possible to defend the acquisition of knowledge. As such, epistemology could be seen as a basis for the acquisition of warranted knowledge.

However, there is a problem of circularity which renders this less cut and dried. Johnson and Duberley (ibid) explain the circularity as 'any theory of knowledge presupposes knowledge of the conditions in which knowledge takes place' (p.3).

This circularity indicates that there can be no secure or defensible ways to acquire knowledge. The best that can be done is to understand the assumptions on which knowledge – in this case an assessment of the value of HC – is based.

As with ontological issues, there are two conceptually different viewpoints which may be described as positivist or interpretivist in nature. Positivists support the methods commonly used by the natural sciences. They focus on reductionism; they assume the existence of an observable social phenomenon; they believe that quantifiable observations are feasible; they use statistical analysis. Some versions of positivism

include falsification and insist of the requirement of replication. (Remenyi et al., 2000).

Interpretivists reject the possibility of objective reality and focus more on subjective consciousness. Their approach is more holistic than reductionist. Each situation is considered to be unique and the meanings derived are seen to be a function of the researcher and researched. In some studies the researcher is an intrinsic part of what is being researched. The Interpretivist will accept the concept of a model, but any such models would be descriptive, verbal and diagrammatic. (Ray and Rinzler 1993).

5.4.1.3 Axiological issues

Axiological issues relate to the role of values in research, how a researcher's values influence the design and implementation of the research. In theory, positivist oriented research should minimise the influence of researcher values. These start with the formulation of the research question and continue through research design to interpretation of data. (Bryman and Bell, 2007).

Interpretivist oriented research is value rich. Typically an interpretivist accepts that research will be influenced by an individual's national culture, family upbringing, education and personal experiences. As such an interpretivist researcher needs to ensure a reader is aware of such influences. This approach is exemplified by the concept of 'conscious partiality' relating to research into feminism (Mies, 1983)

5.4.1.4 Methodological issues

Methodology is concerned with why data is collected; what data is to be collected; from where it is to be collected; when it is to be collected; how it is to be collected and how it is to be analysed. Methods themselves refer only to the ways that data is collected and analysed (Collis and Hussey, 2013). As with the above issues, there are two distinctive positions concerning the nature of methodology. These are commonly termed ideographic and nomothetic. (Allport, 1962; Barlow and Nock, 2009; Castro-Schilo and Ferrer, 2013). Ideographic methodology investigates social phenomena individually and in-depth, aimed at achieving a unique, one off understanding. Nomothetic methodology focuses on large groups of phenomena in order to find general laws that can be applied.

5.4.1.5 Human Nature

Burrell and Morgan (1979) introduce the continuum of human nature with a 'deterministic' view at one extreme and 'voluntarism' view at the other. Extreme determinism describes human behaviour as being strongly influenced by the environment in which an individual operates. The extreme voluntarism view is to visualise behaviour as being the result of free will. The authors accepted that there is a middle ground where behaviour is the result of both nature and nurture but specify that it is important to take this component into account when carrying out research into social phenomena.

The combination of assumptions relating to ontology, epistemology, axiology, methodology and human nature has resulted in a number of paradigms, some of

which are viewed as mutually exclusive and competing, some mutually beneficial and overlapping. These are discussed in the next Section.

5.4.2 POSITIVIST VERSES INTERPRETIVIST PARADIGMS

The epistemological distinctions outlined above are so fundamental that their two distinctive viewpoints are used to describe two paradigms in common use today – Positivism and Interpretivism. The same words are used both in the context of epistemology and paradigm. The examples below explore the range of terminologies associated with the two paradigms of Positivism and Interpretivism.

5.4.2.1 Objective versus subjective terminology

Burrell and Morgan (1979) define objectivity and subjectivity in terms of ontological, epistemological and methodological positions as well as including commentary on the deterministic nature of human nature. Ontologically they distinguish between nominalism and realism; epistemologically they distinguish between positivism and 'anti-positivism'; methodologically they distinguish between ideographic and nomothetic; Human nature they divide into voluntarism and determinism.

They go on to use their definition of objective / subjective to define two paradigms which they term Functionalism and Interpretive. Functionalism is defined as realistic; positivist; nomothetic and determinist. 'Interpretive' they characterised as nominalist; anti-positivist; ideographic and voluntarist.

These paradigms both assume research within a relatively unchanging world, a status quo. Burrell and Morgan develop these objective / subjective distinctions into two further Paradigms which focus on research in a relatively more changing world. They are explored into more detail in section 5.4.3 below.

5.4.2.2 Quantitative versus Qualitative terminology

Van Maanen (1979), an ethnographer, opted (and opts) to focus on qualitative methodology. His characterisation of qualitative included research techniques which 'describe, decide, translate and come to terms with the meaning, not the frequency, of...phenomena in the social world (p. 520). This continues to make the distinction between methodology which uses smaller samples and subjective investigations as opposed to larger sampling yielding more objective data.

5.4.2.3 Nomothetic versus Ideographic terminology

Luthans and Davis (1982) emphasized the distinction popularised in psychology by Allport (1962) where he characterised nomothetic research as using standardised, controlled experiments using quantitative methodologies; ideographic research was characterised by individual – centred studies in natural environments using qualitative methodologies.

5.4.2.4 Etic versus Emic terminology

Morey and Luthans (1984) borrowed the anthropologists' view of the distinction by using the emic and etic variations of research. Emic style research 'denotes a general orientation centred on the native ... the informant's view of reality' (p.29). The etic style 'designates the orientation of outside researchers who have their own categories by which ... the world is organised (p.29).

5.4.2.5 Summary of the Positivist and Interpretivist paradigms

An overall characterisation of the two paradigms, Positivism and Interpretivist, is shown in table 5.4.2. below:

Characterisation	Positivist Paradigm	Interpretivist Paradigm
Ontology	objectivist / realist	constructivist / subjectivist
Epistemology	positivist	interpretivist
Axiology	values minimised	value rich
Human nature	determinism	voluntarism
Methodology	nomothetic / frequencies / etic	ideographic / meaning / emic

Table 5.4.2.: Characterisation of Positivistic and Interpretive paradigms

From the above it could be argued that the two approaches are mutually exclusive and that a researcher would work under the doctrine of one or the other. Indeed, in the past this has been the received wisdom as exemplified by the ‘paradigm wars’ of the 1980s (Gage, 1989). The mutual exclusivity or incommensurability (Kuhn, 1962) has been questioned over the last 20 years (Given, 2017) and the outputs from the debate are discussed later in Section 5.4.6 below.

As explained above, Burrell and Morgan added Functionalist and Interpretive paradigms to their classification. This they did by emphasizing research in the context of change, so generating two further paradigms – Radical Humanist and Radical Structuralist. These are described below.

5.4.3 RADICAL HUMANIST AND RADICAL STRUCTURALIST PARADIGMS

Burrell and Morgan's review of the nature of sociological research in the 1950s (Dahrendorf 1959; Lockwood, 1956) resulted in their adoption of the additional dimension of 'social order'. Research within relatively unchanging social order they included in their Interpretive and Functionalist paradigms already discussed. Research carried out amongst relatively high levels of disorder resulted in their conceptualisation of two additional paradigms which they termed Radical Humanist and Radical Structuralist. Both additional paradigms retain the distinction of objectivity – subjectivity but, in addition, they include research interests relating to levels of social change. These range from the radical change advocated by Marx and Engels (1906) to the 'status quo' of social regulation espoused by Durkheim (1956).

5.4.4 CRITICAL THEORISTS WITH EMPHASIS ON SOCIAL JUSTICE

Studies focusing on change in the 21st century are those commonly described as being within a critical theorist paradigm. Critical theorists focus on the need to improve society through researching issues of power and social justice (Mertens, 2007; Fournier and Smith, 2012; Linstead et al., 2014). As such the literature contains research into, for example, feminism (De Lauretis, 1986); racial and ethnic minorities (Van Dijk, 1991; Samers, 1998). In the context of the current research Linstead et al. (2009) focus on critical theory in organisations. A Critical Theory paradigm is difficult to define because there are numerous schools of critical theory; its tradition is continuously evolving and specificity is avoided in order to enable disagreement among theorists (Kincheloe and McLaren, 2002).

5.4.5 THE POSTMODERN PARADIGM

Postmodernists researching social issues reject the assumptions commonly used by positivists (Foucault, 1970; Lyotard, 1984; Baudrillard, 1983). There are multiple approaches to postmodernism as explained by Kilduff and Mehra (1997) who indicated that they operate with no acknowledgement of academic boundaries or borders. Of these multiple approaches found within the postmodern paradigm, there are two themes that have stood out – sceptical and affirmative (Rosenau, 1992).

The sceptical theme focuses on critiquing existing studies. They argue that no meaning can exist beyond that established by language and, as such all knowledge is a 'linguistic entity' which is open to revision (Johnson and Duberley, 2000). As Voronov and Coleman (2003, p.173) have put it 'what we know is not the world itself, but the linguistic representations of it'. Many have viewed the relationship between a 'signifier' (a concept defined by words) and 'the signified' (an understanding of the concept) as being arbitrary and potentially subject to different interpretations (Saussure, 1966). It follows therefore that constructs seen by Positivists as separate entities and 'out there' cannot be warranted because of differing interpretations of the same word. For example the signifier 'Human Capital' can have multiple 'signifieds' which can be continuously changing / renegotiated.

The affirmative has a more favourable attitude towards rigorous standards of enquiry, but, like the sceptics, affirmatives are keen to see the end of modernism especially the end of its high profile and apparently unending studies. (Kilduff and Mehra, 1997). They favour a constructivist approach to studies in the sense that they judge it feasible to create, or construct, knowledge and reality (Firat and Venkatesh,

1995). As such Firat and Venkatesh depict the affirmative theme as ‘a call to playfully, artfully, and un-abashedly practice ... to re-enchant human lives rather than sacrifice them through commitments to dead-end projects (ibid p.244).

The relevance to the current research is that data generated using positivist methodology could be subject to different interpretations by different assessors, depending on their background and motivations.

5.4.6 MIXED METHODS AND TRIANGULATION

Two common paradigms – Positivist and Interpretive – have historically been seen as mutually exclusive. Indeed they have been two ‘camps’ which have championed their philosophy and methodology without accepting that those of ‘other’ camp have offered value. The positivist ‘camp’ includes Comte (1880); Popper (1959) and continues into the 21st century (Maxwell and Delaney, 2004). The Interpretivist ‘camp’ includes Morgan and Smircich (1980); Lincoln and Guba (1985) and also continues into the 21st century (Holloway and Biley, 2011). In sub-section 5.4.2 it was suggested that the mutual exclusivity of such paradigms has been put into question over the last 20 years. It is arguable that adherence to methods commonly used by one ‘camp’ or the other would reduce the level of information available to a research project as both ‘camps’ use methods which could be of value to any given study (Jackson, 2015). One outcome of such debate is the ‘mixed methods’ paradigm.

5.4.6.1 The increasing use of mixed methods

In sub-section 5.2.3 the Researcher suggested that the primary use of a Positivist paradigm may be augmented by methods used within the Interpretivist paradigm.

Mixed methods may constitute a paradigm that enables this approach. Because of this the next sub-sections review the mixed methods paradigm in more detail.

The mixed methods paradigm is currently used by a minority of researchers, and resolutely rejected by some (Burrell and Morgan, 1979). However, there appears to be a growing body of opinion that the concept of 'mixed methods' may be an acceptable approach (Howe, 1988; Teddlie and Tashakkori, 2011; Fraser, 2014).

A search for 'mixed methods' in ABI Inform, restricting the results to peer reviewed academic journals, yields an increasing number of mixed method articles in each decade. The figure 5.4.6. below shows a large increase in relevant articles ranging from 2,720 recorded in 2000 to 12,092 in 2016.

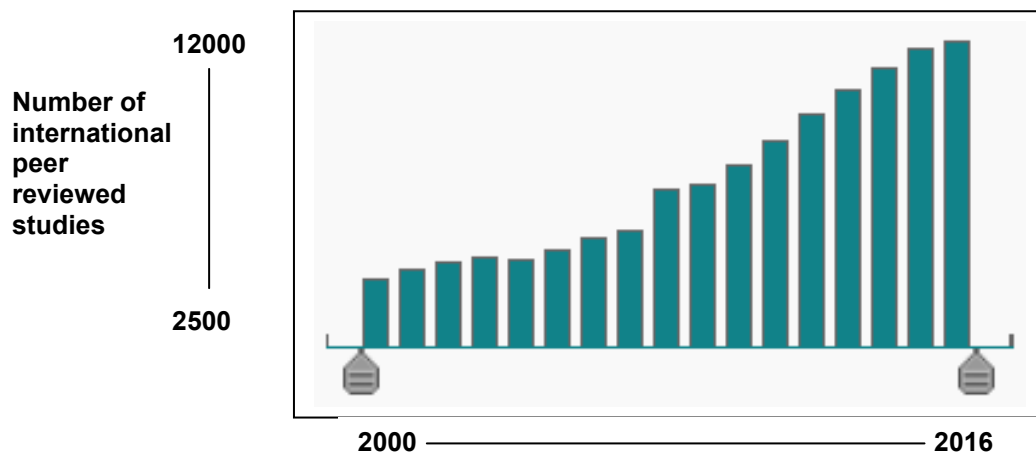


Figure 5.4.6. The number of international peer reviewed academic journals with 'mixed methods' in their title or abstract.
Source: ABI Inform

Looking at other social science and human science fields since 2000 (excluding management) there are a number that have incorporated the mixed methods approach. These include interpersonal communication (Boneva et al., 2001);

dementia research (Weitzman and Levkoff, 2000); occupational health (Ames et al., 2009) and mental health (Palinkas et al., 2015). There are also academic books having been recently published on the subject. Examples include Denzin and Lincoln (2005); Bryman (2006); Morse and Niehaus (2009); Plano Clark et al. (2008) and Creswell (2014). Consequently this option will be pursued to see if it is worthy of consideration in the context of the current research.

5.4.6.2 Defining the mixed methods approach

It is possible to find a description of 'mixed methods' in the work of Johnson et al. (2007) who sought the views of researchers they perceived to be leaders in the field at that time. They concluded that the use of mixed methods incorporated five themes.

The first (1) relates to what can be said to be 'mixed'. The consensus was that 'mixed' refers primarily to the use of both quantitative and qualitative methods. An example of this may be found as early as 1959 when Campbell and Fiske researched psychological traits using both quantitative and qualitative data.

Secondly (2), there is the issue of when mixing should occur. Some say this should happen at all stages of a research project, others specify at data collection stage, yet others at data analysis stage. This criterion reflects the sequencing classification proposed by Morgan (1998) who made the point that qualitative research can inform subsequent quantitative research (e.g. Edwards et al. 1998) and vice versa (e.g. Storey et al. 2002).

The breadth of mixing (3) was also found to be an issue with some restricting their definition to the collection of quantitative and qualitative data, others expanding it to include methodology and language (e.g. Johnstone 2004)..

Next (4) came the motivation behind the need to mix. Answers included the need to find a fuller picture and deeper understanding; to validate findings and to gain greater confidence in reaching conclusions (e.g. Johnstone, 2004).

Lastly (5) a difference in research orientation was found. Some mixed methods were driven traditionally by the research question, others were more driven by the need to 'conduct research that is emancipatory, anti-discriminatory, participatory' (Johnson et al. 2007, p.123), (e.g. Mertens, 2003).

In summary, from the above, a definition would be that a mixed method answers a research question by incorporating into the design of a research project the collection and analysis of qualitative and quantitative data in order to obtain a fuller understanding.

This proposed definition suggests that mixed methods are related to the more traditional approach termed convergent methodology (Campbell and Fiske, 1959), or triangulation (Webb et al., 1966; Denzin 1978).

There is only a limited consensus on the meaning of mixed methods, and so both the emphasis and sequencing of methods varies. Some researchers give equal emphasis to both quantitative and qualitative methods; some emphasise one over

the other; some collect quantitative and qualitative data at the same time; others collect quantitative first, then qualitative, others vice versa. (Creswell, 2014).

Whichever emphasis and sequencing are used, there are three challenges which arise: how to analyse the data; how to interpret the data and how to validate the data.

5.4.6.3 Challenges associated with mixed methods

The first challenge is how to analyse the data. Once collected the data would be in at least two forms and a decision is required as to how best to combine the two into a form that can be interpreted. Also it may be necessary to decide how to continue if the two forms of data do not complement each other. It may be that additional data collection would be required and the research design may anticipate this in the form of two (or more) stages of data collection.

The second is that interpretation is likely to be in two forms. The first form is to merge the two forms to create a unified database; the second is to keep the two conceptually separate and use the qualitative data to help interpret the meaning of the quantitative data.

Third, in addition to the issues of construct, content and criterion validity found in quantitative research it would be necessary to assess other issues such as different / unequal sampling; potential discrepancy between quantitative and qualitative variables and lack of qualitative rigour in the research design (Axinn and Pearce 2006; Yoshikawa et al., 2008).

These definitions and challenges will be taken into account when determining the appropriate methodology required when answering the research question. The next section focuses on the research methodology.

5.5 THE RESEARCH METHODOLOGY

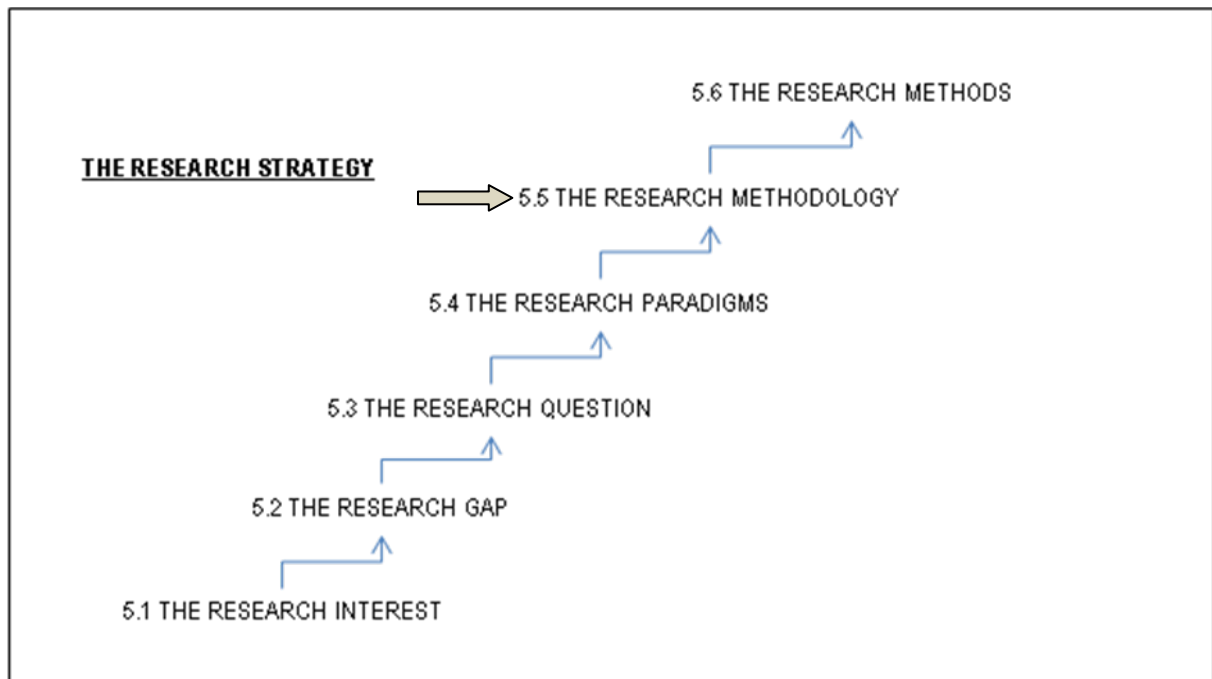


Figure 5.5: Steps in the research strategy: The Research Methodology
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

According to Collis and Hussey (2009, p.73) the research methodology should reflect the assumptions contained within a research paradigm. The previous section on research philosophy has shown that there are a range of paradigms within which researchers work. There are two debates about how critical paradigms are when establishing a research methodology – epistemological and technical (Bryman and Bell 2007).

The epistemological debate, based on the paradigm argument, sees quantitative (positivist) and qualitative (interpretive) approaches as incompatible. A researcher works within the values, mindset and rules of one paradigm and cannot, by definition, venture into the values, mindset and rules of another. This argument was highlighted by Kuhn (1962) and has historically been the one favoured by traditional researchers.

The technical debate argues that research strategy should be addressed from the perspective of the data collection and data analysis methods used by both quantitative and qualitative approaches. Such methods should be considered in the context of the research question and selected accordingly. The choice of methods need not be restricted by paradigm assumptions although there is an acknowledgement that both approaches incorporate distinct ontological and epistemological assumptions. They are, in effect capable of overlap with a method from one approach being 'pressed into the service of another' (Bryman and Bell, 2007, p.644). Collis and Hussey (2009) and Saunders et al (2016) describe this second approach as 'pragmatic' with the 'weaknesses of one paradigm being offset by the strengths of another' (Collis and Hussey 2009, p. 66).

Despite the increasing use of pragmatic mixed methods, the Researcher concludes that the commonly depicted 'camps' - espousing more exclusive descriptions of research paradigms - are still considered an acceptable way, and in many eyes, the best way, of signposting a research strategy. Consequently, the current study will be carried out using primarily quantitative research and the following sections describe why this is the most appropriate approach. They cover the reason for carrying out the research; and considerations of ontology; epistemology; human nature; axiology and knowledge required.

5.5.1 THE REASON FOR CARRYING OUT THE RESEARCH

As outlined in Section 1.4, the reason for carrying out the current research is to establish the relationships between the Human Capital, associated intangibles within an SME, and the value that investors place on those intangibles.

Currently investors use discussions with Board members before investing in an enterprise. They may also use a more systematic due diligence checklist (requiring documentation) before a business combination (P. Jourdan, Fund Manager, Amati Global Investors. Personal communication 27th April, 2016; N. Horlick, Chief Executive Officer, Money and Co., Personal communication 2nd November, 2016,). In the case of large enterprises the discussions or demands for due diligence information can be backed up by sophisticated Human Resource Information Systems and Intellectual Capital assessment instruments. The Researcher has found no valid and reliable assessment instrument which enables an investor to assess and compare HC information in different SMEs quickly and at low cost.

The Researcher argues that quantitative methods will generate data-based information that an investor can use to compare different SMEs both within the same industry or across different industries. However, the Researcher also argues that, if required, such data can be supported by additional qualitative information generated by, for example, semi structured interviews and documentation.

5.5.2 ONTOLOGICAL CONSIDERATIONS

Ontologically the Researcher takes an objectivist / realist viewpoint. Enterprises exist and compete in their chosen markets; people are recruited into, retained and separated from an enterprise; they are organized into enterprise units (departments, teams) and / or business processes; they carry out specified roles and adapt to changing circumstances; they experience formal and informal ways of interacting.

The literature review has cited numerous studies which demonstrate that such issues have been successfully researched using positivist methodology (e.g. Shrader and Siegel, 2007).

The literature review has, however, also identified studies which have covered similar issues using interpretive methodology (e.g. Guthrie et al, 2014). It is feasible to argue that no individual employee will experience recruitment, retention, organisation and interactions in exactly the same way. Their views on an enterprise will be socially constructed.

Thirdly, the literature review has identified studies that have used both quantitative and qualitative methods, the latter being used to establish a 'more holistic and comprehensive understanding' of Human Capital Management (Bontis and Fitz-Enz, 2002, p. 239).

It can be seen that both quantitative and qualitative methods have been used when researching Human Capital. It would therefore be defensible to concentrate on using quantitative data to make an HC assessment, but support it with qualitative data.

5.5.3 EPISTEMOLOGICAL CONSIDERATIONS

The Researcher argues that an overview can include a reductionist approach to describing Human Capital and associated intangibles. It is feasible to separate out conceptually separate components which, taken together, make up the constructs Human Capital / Organisational Capital / Relationship Capital). It is feasible to

observe and describe the factors. The descriptions can be assessed quantifiably and analysed statistically.

It is also feasible to describe an enterprise, its Human, Organisational and Relationship Capital more holistically. It is this approach, plus the use of financial data that is used by investors currently. A holistic representation is, however, less likely to enable systematic and defensible comparison between differing SMEs.

5.5.4 CONSIDERATIONS OF HUMAN NATURE

If the two extreme views of human nature – determinism and voluntarism – are opposite ends of a continuum, it is argued that Human Capital in UK SMEs is likely to be in the centre. Operating in challenging and changing markets requires a ‘voluntaristic’ approach in the form of flexible business strategy in order to survive. But the very nature of a challenging and changing market is such that it strongly influences the strategic behaviour of an SME.

It is feasible to use positivistic methods to assess the level of voluntary judgements relating to strategy. For example it would be possible to establish the number of potential strategies discussed by an SME Board and the number used in the context of changing circumstances.

Nevertheless, a Board’s behaviour is influenced deterministically by the market in which it operates. The examples of IBM reacting to developments in the personal computer market and Nokia reacting to developments in the mobile phone markets have already been cited.

It is feasible, therefore to envisage the use of positivistic methods in the development of the proposed instrument but be equally aware that the quality of Human Capital may vary, depending on circumstances beyond the control of Board members.

5.5.5 AXIOLOGICAL CONSIDERATIONS

In the case of the current study the values of the Researcher may well be of relevance because of his experience studying scientific 'A' levels, scientific Undergraduate degree and a scientific Masters degree. It is acknowledged that a positivist approach should seek to avoid bias when formulating the research question; choosing the appropriate methodology and methods and choosing the appropriate techniques for data analysis.

5.5.6 CONSIDERATIONS OF KNOWLEDGE REQUIRED

As a reminder, the research question was defined as: how much can a valid and reliable assessment of Human Capital within a medium sized enterprise influence an investor's intended level of investment in that enterprise?

The characteristics of the knowledge required to answer the question, and associated research methods, are listed below and based on the likely components of human capital and associated intangibles generated during literature review and outlined in Section 2.7.5. The knowledge required is judged to be as follows:

5.5.6.1 SME Agility

SMEs typically exist to compete within their chosen markets. Their competitiveness is influenced by the quality of human capital attracted and retained (Hayton, 2003).

Their survival is influenced by their ability to react to change in their market(s) (Eisenhardt, 1989; Eisenhardt and Martin, 2000; McCarthy et al., 2010). It is relevant, therefore, to assess the strategic agility of an SME in its chosen market(s). Using positivist methods it should be feasible to go some way to doing this using appropriately worded items and rating scales within a survey instrument. However, an investor may also wish to review documentary evidence such as a strategic plan or minutes of management discussions on strategy. This latter approach is archival and qualitative in nature.

5.5.6.2 External relationships

It is proposed to assess four aspects of External Relationships: regulatory; controlling; dependent; partners and passive (Mainardes et al., 2012). These too are likely to be capable of being assessed using positivist methods in the form of survey items. Additionally they can be supported by associated documents where feasible, for example customer audits and reports from regulatory authorities.

5.5.6.3 Organisation makeup

This factor would assess how work is carried out (business processes, information systems, operating procedures), reporting structures (roles and responsibilities) and stakeholder engagement (Stanford, 2015). This factor can be investigated using ratings of descriptive items. As such it is likely that this factor can be assessed using positivist methods.

Nevertheless, existing approaches to carrying out due diligence typically require documentary evidence such as organisation charts and payroll data showing headcounts.

5.5.6.4 Workforce investments

The level of investment in a workforce could be assessed numerically in terms of spend on pay and benefits and spend on workforce training and development. (Janouskova, 2015). Both could be expressed as a ratio of annual turnover or profitability. Information on both elements could be enhanced by policy statements.

5.5.6.5 Workforce Composition

Workforce composition could be expressed in numerical terms, for example overall headcount and how that overall number could be sub-divided to identify levels of diversity. (Mohr and Shoobridge, 2011). This data too could be put in context by policy statements.

5.5.6.6 Workforce competence

Competence components (Ulrich, 1998; Scarborough and Elias, 2002; Saratoga, 2004) are also described as 'knowledge acquired' (Miller, 1996) and 'collective sum of life experience, knowledge, inventiveness and energy' (Weatherly, 2003). It would be feasible to collect enough data to enable an assessment of competence using descriptive items based on the classification of educational achievement (United Nations Educational, Scientific and Cultural Organisation, 2011) which includes work-based education. This could be supported by training records and appraisal documents where available.

5.5.6.7 Internal relationships

It is proposed to assess internal relationships by requiring those completing the instrument to rate a number of descriptive items relating to this factor. Based on the

number of instruments focussed on surveying organisation culture, it is feasible to create items which provide an assessment of the nature of internal relationships (Scott et al., 2003; Denison et al., 2014). In the case of the proposed instrument the difference would be that responses to the items would be based on a consensus reached by a management team completing the instrument, not the employees themselves.

As the cost and speed of implementation would be a key feature of the proposed instrument, use of an employee survey would not be feasible. However, when such surveys have already been carried out, the survey results could be reviewed by those completing the proposed instrument. Surveys constitute a method in the positivist armoury. The results are typically statistical in nature but can also include employee comments which would be analysed interpretively.

5.5.6.8 Workforce commitment / stability

In the context of this study, and taking into account the need to use colloquial language, the definitions 'willingness to use competence' (Saratoga, 2003/2004) and 'choosing to invest in work' (Weatherly, 2003) are relevant. With this in mind, and the likelihood that commitment may be evidenced by levels of employee turnover (Stanley et al., 2013) and objective data on employee unrest (e.g. grievances or working to rule) it is possible to assess this aspect of commitment using positivist data.

Turnover rates need to be taken in context though. Apart from being different in differing industries, the same turnover rate in different SMEs in the same industry

can have different implications. For example, taking the rate of 15%, one SME may be concerned because it is above average for SMEs competing in the same market. Another SME may be relaxed about the same rate because it enables a reduction in headcount without resorting to redundancies (Siebert and Zubanov, 2009).

Consequently, commitment / stability would benefit from being assessed in context, something which both semi-structured interviews and documentary evidence can enable.

5.5.6.9 Workforce adaptability

Adaptability components (Scarborough and Elias, 2002) are described as solving problems creatively or dealing with uncertain and unpredictable work situations (Pulakos et al, 2000) and focussing on innovation' (Saratoga, 2003/2004). It is possible to assess adaptability through ratings of items which cover issues such as small – step improvements; role flexibility and levels of change experienced.

Any ratings relating to such items could be supported by documentary evidence such as policies of continuous improvement.

5.5.6.10 Workforce Impetus

Workforce impetus – the level of willingness to work towards meeting organisational goals – could be assessed by the approach given to financial and non financial reward / recognition. Reward and recognition could be assessed by the levels of fixed and variable pay and how they compare with external benchmarks. (Pryce et. al., 2011). Such data would also be enhanced by policy statements.

5.5.6.11 Workforce risks

The literature review has shown that teams involved with due diligence are required to assess workforce risks before a merger or acquisition can take place (Dutta, 2015). Consequently it would make sense to include this factor as a component of the assessment instrument. Not to do so would reduce its acceptability in the eyes of due diligence teams.

Assessing workforce risks includes checking any ongoing, pending or potential claims by current or former employees; making sure pension schemes are fully funded; liability for termination payments to employees.

This can be done primarily using positivist research methods in the form of a checklist requiring yes / no answers. However, this aspect is so important (financially) that it would be worth supporting the answers with semi-structured interviews and / or documentary evidence.

5.5.6.12 Business specific issues

It is possible that the wide range of SMEs in the UK (Steedman, 2014) would generate workforce issues that may be unique to a given business, or at least very rare. As such an assessment instrument could incorporate space for 'one off' issues. This could be in the form of blank for compiling new items with accompanying rating scales (positivist approach) or a blank for questions to be answered using narrative (interpretive approach).

5.5.7 CONCLUSION

From the analysis above it is possible to determine the required methodology. Answering the research question requires a methodology enabling a reliable and valid approach to assessing HC which can be used to compare the quality of HC in differing SMEs.

Ontologically, the Researcher judges that HC and associated intangibles exist, can be seen as independent of, and are unlikely to be influenced by the research methodology. Epistemologically, the Researcher judges that HC is an observable phenomenon, subject of a reductionist approach where quantifiable observations and statistical analysis are feasible. In terms of human nature, the Researcher believes that appropriate leadership within an SME enables a more voluntaristic range of behaviours to occur within an unpredictable and changing environment. Axiologically, the Researcher's background is scientific in nature and, as such his skill set is consistent with positivist methods. The Researcher believes that knowledge required to establish an instrument enabling the comparison of HC in SMEs can be obtained by the use of positivist methods.

However, the Researcher argues that, in the context of supporting positivist generated information, additional access to documents and records (e.g. strategic plans, Board level minutes and / or management team minutes) would help increase investor confidence in the data generated (Bryman and Bell, 2015; Bloomfield et al. 2016). This type of archival research is qualitative in nature (Creswell, 2014; Willig and Stainton-Rogers, 2017).

In summary the Researcher will work within a positivist paradigm and methodology but judges that investors would welcome the opportunity to support ratings of instrument items with interpretivist methods (primarily archival research). The next section outlines the associated research methods.

5.6 THE RESEARCH METHODS

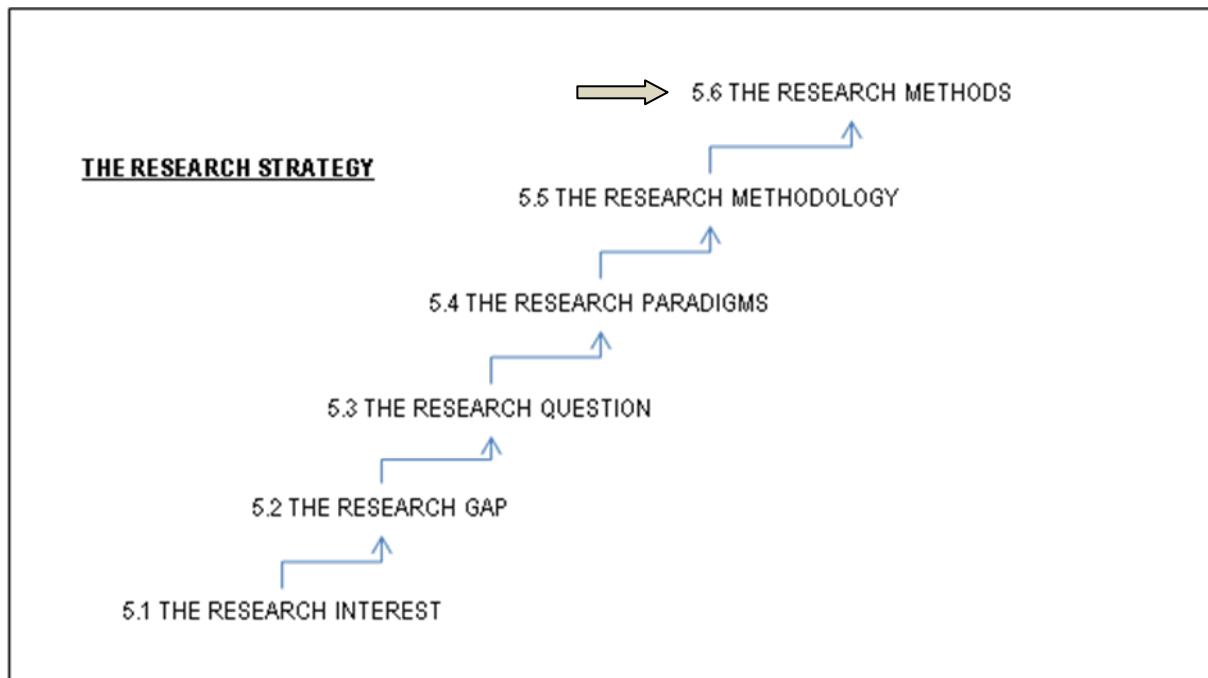


Figure 5.6: Steps in the research strategy: The Research Methods
Based on Collis and Hussey (2009); Field and Hole (2011) and Bryman and Bell (2015).

Based on the positivist methodology chosen, some possible associated research methods are experimental studies; surveys; structured interviewing; cross sectional studies and longitudinal studies (Collis and Hussey, 2009; Bryman and Bell, 2015). A qualitative method, documentary analysis, will be included as an option.

5.6.1 EXPERIMENTAL STUDIES

The use of experimental studies involves the deliberate manipulation of a predictor variable in order to influence changes in an outcome variable thereby identifying a cause and effect relationship. (Bryman and Bell, 2015). A major advantage of using this method is that confounding variables (e.g. other organizational initiatives) or extraneous variables (e.g. changes in customer requirements) can be eliminated or controlled. The main criticisms of this approach are the difficulty in identifying a

situation where this can be carried out ethically, and, where it is feasible to do so, the artificiality of the situation. In the context of the current study, the Researcher judged this option to be inappropriate for the reasons outlined above.

5.6.2 LONGITUDINAL STUDIES

These studies can be classified under both positivist and interpretivist paradigms (Collis and Hussey, 2009). The option would involve studying an enterprise or enterprises for a significant period of time in order to investigate how a change in people management practices could influence the value of human capital within the enterprise(s).

The Researcher considered this as a possibility but it would run the risk that such situations may not arise in the timescale anticipated. Also it would run the risk that the enterprises(s) may decide to withdraw from the study, for example as a result of a change in the senior management team.

5.6.3 CROSS SECTIONAL STUDIES

Cross – sectional studies generate data over a similar period of time but in different contexts / enterprises. Data are collected over a short period of time, then analysed and reported (Collis and Hussey, 2009). Typical difficulties found using this approach are ensuring sampling is large enough in order to represent adequately the population of enterprises / respondents; not being able to control for confounding or extraneous variables other than by randomness of the sampling and not being able to identify cause and effect.

The Researcher intends to use this approach, in conjunction with structured interviewing and surveys, because it is a well established approach (e.g. Ogden et

al., 2006; El-Ghalayini, 2017) and it can be done within the timescale anticipated for this study.

5.6.4 STRUCTURED INTERVIEWING

This category of interview standardizes the format and content of questions in order to minimize differences between interviews (Bryman and Bell, 2015). By doing this each respondent, or group of respondents, receive the same instructions, question wording and question sequencing.

The Researcher will use this approach during the piloting stage of instrument development when a draft of the instrument is trialled by groups of SME executives and MBA students. Sources of error will be minimised by ensuring all instructions and question wording are in written form, all respondents have copies of the document and clarifications of meaning discussed before a response is made. Responses will be in the form of ratings shown on cards, consensus established and conclusions recorded on a screen which is seen by all.

5.6.5 SURVEYS

Surveys are designed to generate primary data from a sample of a given population. (Bryman and Bell, 2015). In conjunction with the concept of a cross sectional study, this option makes sense to the Researcher because it is a feasible approach within the likely timescale and potentially enables contact with a wide range of respondents. The main issue will be to ensure a large enough sample to resolve the problem of confounding and extraneous variables and generate enough data for correlation and factor analysis.

In using surveys, the Researcher has the choice of 'postal' or 'electronic' distribution. The Researcher concluded that the postal survey option would be too costly and involve too much time generating a representative sample of SMEs in the UK. (Sapleton and Lourenço, 2016). The electronic survey potentially offers the advantages of being quicker to distribute, easier to follow up and provide greater speed and accuracy of processing (Row et al., 2006; Boyle et al., 2016; Sebo et al., 2017). The use of one particular version of the electronic survey - Panel surveys - offers a way of resolving any problem of poor response rates. This is because any given Panel specified is already identified and has indicated a willingness to participate. However, a disadvantage of this approach is the potential lack of representativeness of responses to such surveys (Svensson and Sweden, 2013).

5.6.6 DOCUMENTARY ANALYSIS

One of the potential weaknesses of the proposed instrument is how much the data generated could be trusted. For example it could be of interest to know an enterprise has a high expectation of continuous improvement from its workforce (workforce adaptability) but this would be a more believable rating if backed up by a written policy and / or customer audits. Consequently, although typically classified as an interpretivist method, the Researcher judges that this approach would add a significant level of authenticity to the proposed instrument.

5.6.7 CONCLUSION

Based on the chosen paradigm and options for research methods, the Researcher has chosen a combination of structured interviews, surveys and documentary analysis as the methods to be used in this study.

6. **INSTRUMENT DEVELOPMENT**

This section describes the definition of the construct; the approach used to assess item relevance and levels of investor interest; how the instrument was designed and how the instrument was used to assess the state of HC in SMEs.

The sequencing is shown in figure 6 below. This figure is also reproduced throughout the Section in order to enable Readers to keep track of the stages.

6.1 **DEFINING THE CONSTRUCT**

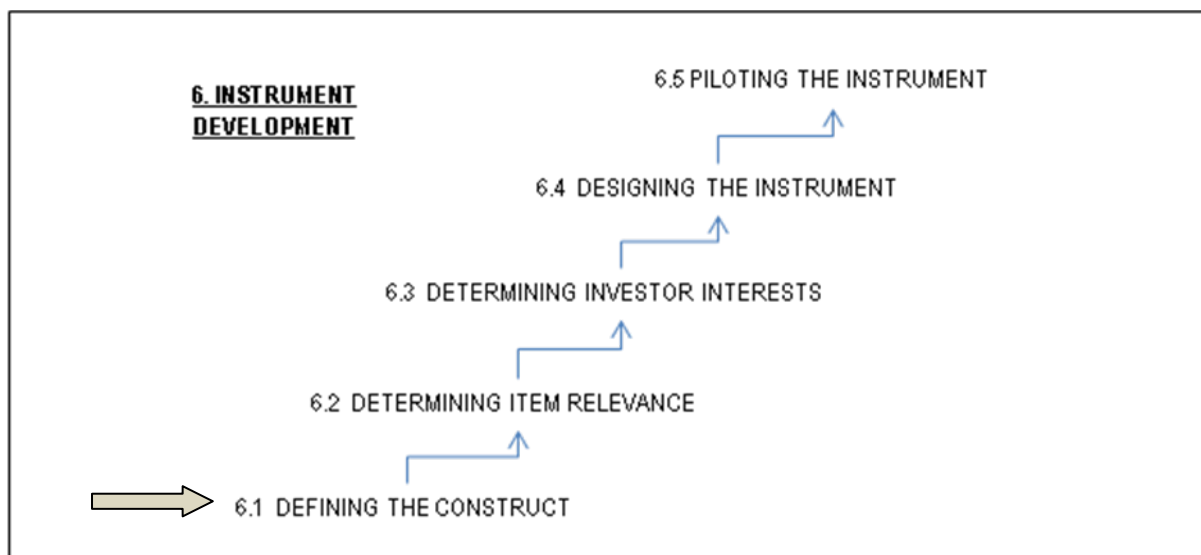


Figure 6.1: Instrument Development – Defining the Construct

In the context of this study, based on the results of the literature review, the Researcher has identified three layers of definition as demonstrated in the nomological network, figure 6.1.

6.1.1 **THE OUTER COMPONENTS OF THE CONSTRUCT**

The outer components of the construct are those without which the influence of Human Capital would be diminished but which are not included in the instrument. These are: The

UK Commission for Employment and Skills; institutions for teaching and learning; national Human Capital; formal Human Resource Management (as opposed to less formal people management practices which are included as part of the Human Capital factors); the external market (which influences strategic agility) and intellectual capital (which is already comprehensively assessed by investors).

6.1.2 KEY INFLUENCERS OF THE CONSTRUCT

Key influencers are those factors that may not be a component of Human Capital, but which have definite impact on its level of influence. They are the other intangibles, described earlier as Organisational and Relationship Capital, which interact with Human Capital to maximise its influence on enterprise outcomes. These are: (1) strategic agility without which many SMEs would not be able to survive changes to their market(s); (2) the effectiveness of external relationships, or external Relationship Capital; (3) workforce integration practices or Organisational Capital and (4) workforce investments.

6.1.3 THE HUMAN CAPITAL CONSTRUCT

Human Capital is defined as a combination of components comprising (5) workforce composition; (6) workforce know how; (7) workforce relationships; (8) workforce commitment (which subsequent factor analysis divides into (8) workforce experience and (9) workforce stability); (10) workforce adaptability; (11) workforce impetus and (12) workforce risks.

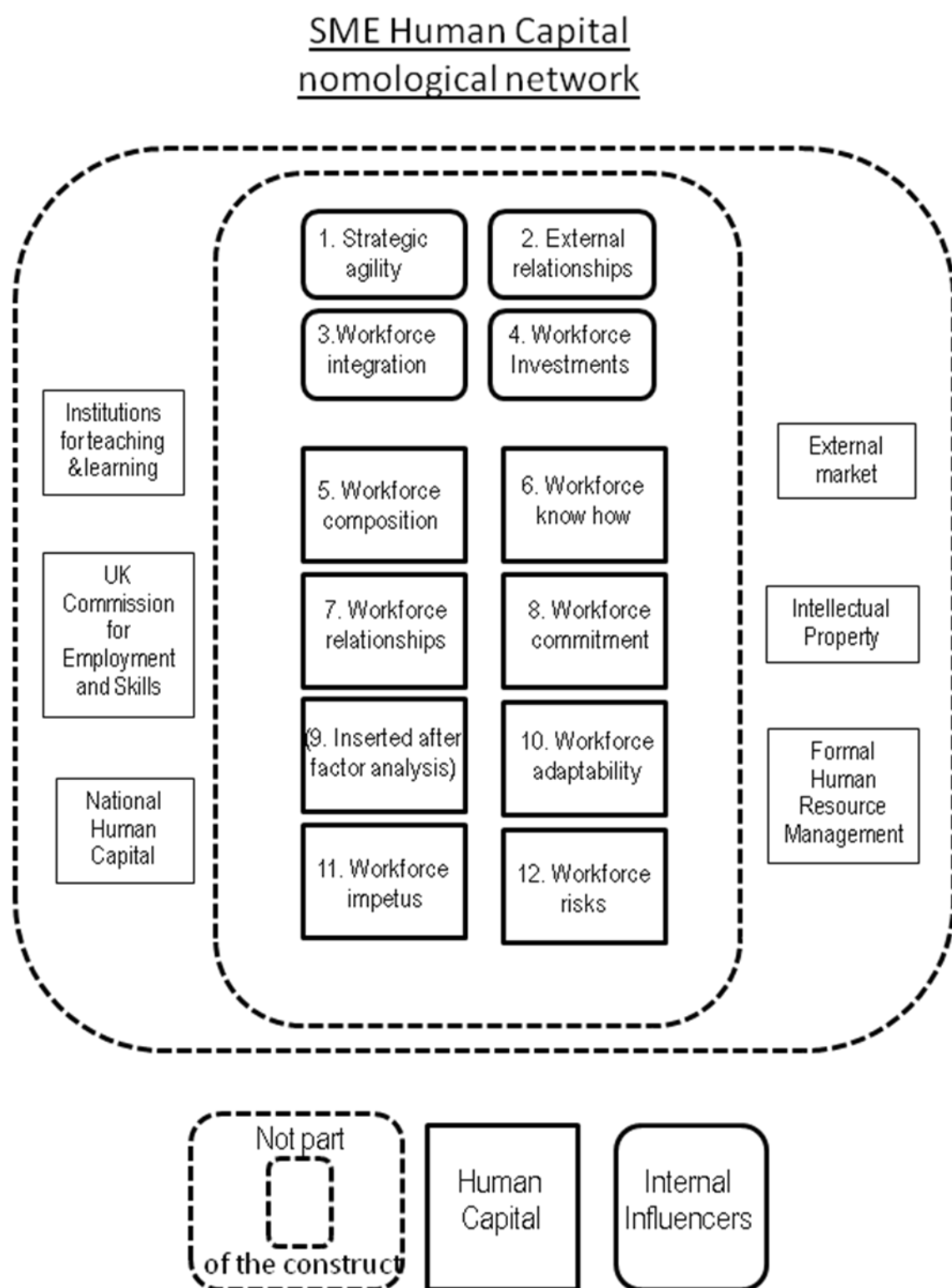


Figure 6.1.3 Nomological Network defining Human Capital

6.2 DETERMINING ITEM RELEVANCE

The initial range of items was generated during the literature review (see Section 2.7.5). Subject Matter Experts were involved in the early stages of instrument development in order to confirm that items / issues identified during the literature review could legitimately be included as aspects of Human / Organisational / Relationship Capital.

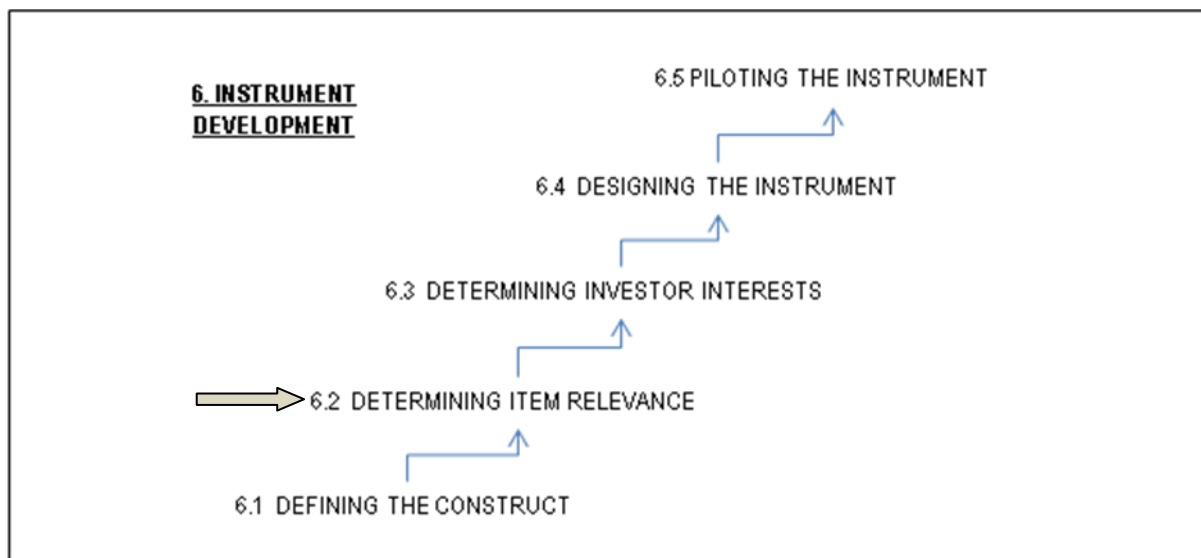


Figure 6.2: Instrument Development: Determining Item Relevance

The use of such experts, in order to establish face validity, has been used since the 1940s (Mosier, 1947) and reviewed in the context of content validity in the 1990s (Sireci and Geisinger, 1995; Sireci, 1998). It is still used today to assess content validity (Parshall and Brunner, 2017; Thompson and Senk, 2017).

6.2.1 SUBJECT MATTER EXPERT PARTICIPANTS

The participants were chosen based on their personal relationship to the Researcher and their specialised knowledge of Human Resource Management and / or Occupational Psychology.

12 subject matter experts were approached and 10 agreed to contribute to the initial identification of items and, subsequently, scale development. The ten experts were (1) the head of human resources and organisation behaviour at a university department; (2) an occupational psychologist and head of psychology of a university department; (3) a head of human resources at an international professional services organisation; (4) a general manager, human resources at a financial institution; (5) a human resources advisor with a DBA in quality management; (6) a retired airline human resources manager; (7, 8 and 9) three self employed business psychologists with previous experience of working for international consultancies and (10) a self employed industrial relations advisor with previous experience as a human resources manager.

Their qualifications and experience are listed as table 6.2.1.below:

1. PhD Industrial Relations. Experience of working in Industry and Head of University HR Department;
2. Occupational Psychologist and Head of Psychology Department;
3. MSc Occupational Psychology. Experience as Human Resources Consultant and V-P Human Resources;
4. MSc Engineering, General Manager Administration (including HR) and Coach;
5. PhD Chemistry plus MBA plus DBA, an HR Consultant and V-P HR, Strategy and Performance;
6. MA Industrial Relations and Organisational Psychology. Experience as a Personnel Manager;
7. MSc. Occupational Psychology. Experience of working as a Personnel Manager and HR Consultant;
8. MSc. Occupational Psychology. Experience of working as a Personnel Manager and HR Consultant;
9. Chartered Occupational Psychologist. Experience of Human Resource Consulting;
10. MA Industrial Relations. Experience as a Human Resources Manager and Consultant.

Table.6.2.1: Characteristics of the Subject Matter Experts

6.2.2 SUBJECT MATTER EXPERT SURVEY CONTENT

In order to establish a more defensible range of items those in the initial long-list were screened by the 10 subject matter experts. In order to do this, a survey based on the output from the Literature Review (sub-section 2.7.5) was created in Excel. This may be found as Appendix 1a.

An initial list of 65 items was generated as part of the literature review. The sources of these items may be found in the literature review sub-section 2.7.5. Examples are shown in the table 6.2.2. below.

	External Relationships Capital	Human Capital	Organisational Capital	Internal Relationships Capital
Key employees liaising with controlling stakeholders (e.g. some customers) at each level of the organisation				
Qualification levels of the workforce - number of employees who have achieved NVQ 1 ; GCSE ; A level; Degrees etc.				
We believe that workforce diversity should reflect local demographics.				
We have a way of ensuring everyone knows what they have to do, when and how well				
We document our processes and practices to make sure everyone understands our way of doing things				
We have a way of ensuring effective communication between different organisational units.				
We value decentralised decision making - we delegate decisions as much as possible				

Table 6.2.2: Example items used in the Subject Matter Expert survey

6.2.3 SUBJECT MATTER EXPERT SURVEY PROCEDURE

The 10 subject Matter Experts who agreed to participate in the survey were sent the survey and phoned to check that they had understood the instructions. They subsequently identified those items that they judged represented Human Capital, Organisation Capital or Internal / External Relationship Capital. Their responses were returned electronically and consolidated into one Excel file.

6.2.4 THE RESULTS OF THE SUBJECT MATTER EXPERT SURVEY

A sample of items which were classified by the subject matter experts to confirm they represented the HC construct and associated intangibles are shown in table 6.2.4. The full list of items and analysis of responses can be found as Appendix 1b

The number of responses (out of 10) which indicate level of agreement is also included.

	External Relationships Capital	Human Capital	Organisational Capital	Internal Relationships Capital
We encourage debate and critique throughout our organisation				10
We have a (formal or informal) business strategy which deliberately includes issues of people and organisation			5	5
We document our processes and practices to make sure everyone understands our way of doing things			10	
Overall organisation demographics including gender, age, and ethnicity.		10		
Key employees liaising with controlling stakeholders (e.g. some customers)	9			

Table 6.2.4: A sample of items classified by subject matter experts

The Experts did not agree on all items, other than to confirm they did represent some aspect of Intangible Assets / Intellectual Capital. For example in the above table it is clear

that the Experts did not agree on the classification of the item 'business strategy which includes issues of people and organisation'. Some viewed the item as part of organisational capital; some viewed it as part of internal relationships. This was subsequently discussed during the pilot sessions and was also subject to exploratory and confirmatory factor analysis. Additionally, not all Experts rated every item. For example only 9/10 rated the 'controlling stakeholders' item in the above table.

However, all the items listed generated a majority of at least 6 responses in favour of them representing HC or associated intangibles. Despite the critique of simple majority voting (Emerson, 2017), the Researcher consequently judged this simple majority, based on Condorcet's majority voting (1785), to render the items appropriate for inclusion in the subsequent Investor survey.

6.3 DETERMINING INVESTOR INTERESTS

As the proposed instrument aims to enable the assessment HC within SMEs by Investors, the Researcher's next step was to assess the relative interest of Investors in the items relating to HC confirmed by the Subject Matter Experts.

Investor interests were determined by means of an opinion survey, carried out in order to identify and prioritise those aspects of Human / Organisational / Relationship Capital which would influence those investing in SMEs.

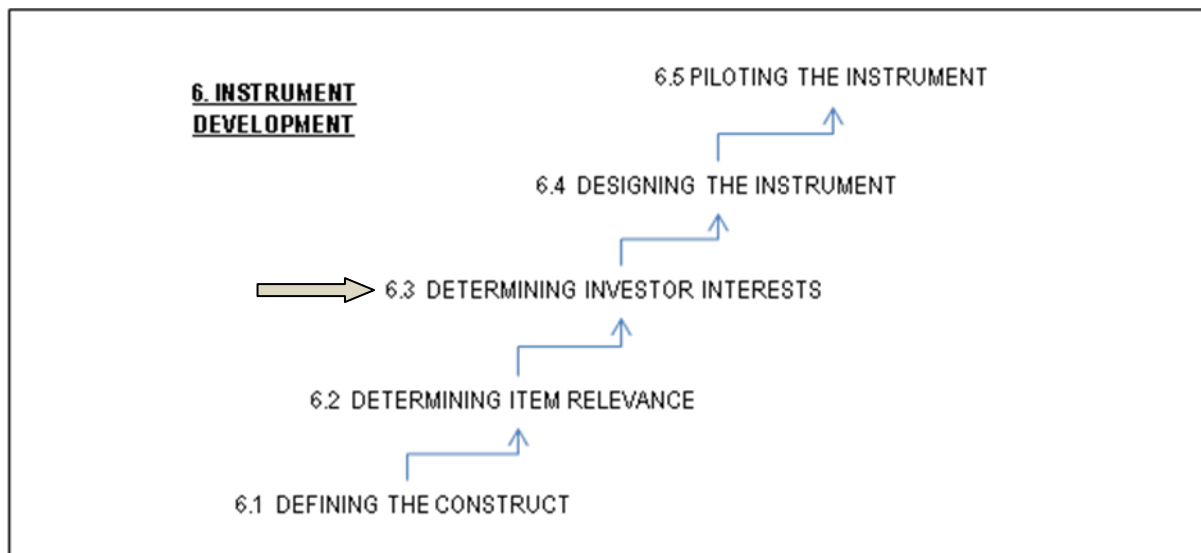


Figure 6.3: Instrument Development – Determining Investor Interests

6.3.1 INVESTOR SURVEY PARTICIPANTS

There are two main categories of investor, these being Individual / private investors and institutional investors. They are commonly distinguished due to apparent differences in buying behaviour. Private investors are more likely to restrict their investments to 'attention – grabbing' stocks (Barber and Odean, 2007) and / or socially responsible criteria (Jansson and Biel, 2011). Institutional investors are more likely to survey the full spectrum of investment options and focus on long term returns on investment (ibid).

6.3.1.1 Private Investors

In the case of private investors, two sub-categories were found. The first was in the form of an individual whose shares in a business are privately held and not traded on a stock market (Financial Times, 2017). A popular term for this type of investor is 'business angel', that is someone who invests in small start-ups. The second was an individual who make his / her own personal decisions about where and how much to invest, typically in shares or bonds of companies publicly listed and which are traded on the stock exchange.

6.3.1.2 Institutional Investors

Institutional investors are legal entities that manage portfolios on behalf of a range of investors (Basile and Ferrari, 2016). They use three main types of investment strategy – high turnover / short term; low turnover / relationship building and passive / buy and hold (Chan et al., 2013).

One way of categorising institutional investors is by their investment vehicles (Investors UK, 2017). They may be divided into 'hedge funds' (investing in shares, debt and commodities, and trading activities); mutual funds / investment trusts / index funds (collective investments that invest in bonds, stocks, money market instruments and other securities); pension funds (legal entities formed by pension money); investment banks (financial institutions that raise capital, trade in securities, and manage corporate mergers and acquisitions).

One strategy, in addition to the three mentioned above, is based on ethical investment. When making their recommendations or decisions on potential investments, investors

take into consideration environmental / social / governance issues. Currently this is a relatively small section of the investor community, maybe up to 10% (Humphrey et al, 2016) but is increasing in popularity (Simon, 2016). The relevance of this particular category of investor is that they filter out or highlight investments which do or do not meet their criteria. To date they have been interested in human rights records, workforce diversity, employee relations and health and safety (Waring and Lewer, 2004), but the Researcher proposes that their criteria could be extended to additional HC components if they judge them to be relevant, reliable and valid.

If not investigating the characteristics of an enterprise personally, institutional investors rely on the research carried out by investment analysts. Analysts are, in turn, classified into 'sell-side' and 'buy-side' (Groysberg et al., 2008; 2013). Buy – side analysts are employed by the same companies as the institutional investors. They carry out their own research into a wide range of potential investments but can also use the reports generated by sell-side analysts. Their conclusions are restricted to the investors in companies in which they both work. Sell-side analysts can be found in investment banks and brokerage houses. They focus on a smaller range of companies compared to buy-side analysts. This means they have more time to carry out their investigations and are more likely to obtain data directly from the companies in which they are interested. Their reports are more widely distributed and customers include the institutional investors, buy-side analysts and private investors.

6.3.1.3 Investor Sampling

Based on the above, a representative sample of all UK investors was found to be impractical in the context of this study for two reasons. Firstly in the case of private investors as many as 20% of UK households hold shares (Department of Work and

Pensions, 2006). This would equate to 10 million people with a representative sample being 385, assuming a confidence level of 95% and 5% margin of error (SurveyMonkey, 2017). To obtain a sample of 385, and assuming a 'click through' rate* of 2.75% (MailChimp, 2017), surveys would need to be despatched to 14,000 potential respondents

Secondly, as can be seen from the range of different institutional investors and analysts, it is difficult to make an assessment of how many there are. For example a review of institutional investors in the UK, written for the Chancellor of the Exchequer (Myners, 2001) did not provide an estimate of numbers. The internet based 'InvestorsUK' also lists a wide range of investor categories, but omits to include numbers. It is feasible to establish a count of legal entities, but this would not include the number of decision makers employed within such an entity.

One way of making a more manageable estimate of institutional investors would be to restrict potential sampling to membership of the Chartered Institute of Securities and Investment (CISI). Their latest annual report indicates a membership of 42,000 (CISI, 2016, p.26). A representative sample, assuming a confidence level of 95% and 5% margin of error, would be 381 (SurveyMonkey, 2017). In order to obtain a sample of 381, and assuming a 'click through' rate of 2.75% (MailChimp, 2017), surveys would need to be despatched to 13,855 potential respondents.

***A 'click through' rate is the rate of response after a respondent has opened an email and clicked on a link to a survey.**

In consequence, although it would be feasible to contact 27,855 investors (14,000 +13,855), the Researcher judged the size of the required sample, and associated cost, to be too high in the context of this study.

This sampling difficulty was resolved by the use of opportunity sampling. The organisers of the London Investor Show were approached and they agreed to provide access to their exhibitors (institutional investors and executives of SMEs) and customers (private investors). This was in exchange for a presentation on why investors should take HC into account when using a 'buy and hold' or 'relationship' investment strategy (London Investor Show, 2016). The access obtained was both face to face using structured interviews during the show and, subsequently, a survey delivered by email.

In total 110 investors participated. The characteristics of the respondents are depicted in Table 6.3.1. 87% classified themselves as private investors; 26% as institutional investors (some of whom were also investing privately); 9% as investment advisors; 39% directors or senior managers; 59% with professional qualifications and 59% with degree level qualifications.

	%
Private Investors	87
Institutional Investor (some also private investors)	26
Advisors of Investors	9
Directors / Senior Managers	39
Professional qualifications (accountancy, banking, insurance, actuarial)	59
Academic qualifications (degree level)	59

**Table 6.3.1. Characteristics of investors who answered the investment survey.
Some investors characterised themselves in more than one category.**

6.3.2 INVESTOR SURVEY CONTENT

The investor survey content comprised demographic data; a range of HC / OC / RC items and a final question asking about how the information, if available, would change their intended investment.

6.3.2.1 Demographic data

Information was requested on the role of the respondent (e.g. private investor or institutional investor); professional qualifications; age group and gender.

6.3.2.2 Range of Items

The range of investor survey items was based on the output from the Subject Matter Experts' survey. Survey Monkey (2016) was chosen as the means of delivering the survey because the organisers of the London Investor Show already had a licence to use it. However, the items from the Subject Matter Experts were too detailed, with too many items for insertion into a Survey Monkey instrument. Consequently some of the items used in the Subject Matter expert survey were amalgamated into 'issues'. An example is shown in table 6.3.2. below. All amalgamations are shown as part of Appendix 2, item development.

Items used in the Subject Matter Experts' survey	Items consolidated into an 'issue'
Our employees own shares in our business	Evidence of defensible pay and benefits policies
Our pay ranges and benefits are competitive when compared to other organisations our people could work for.	
We have a reward system that recognises achievement of business objectives	

Table 6.3.2. Examples of how items were transformed into issues.

There were 50 items / issues (the maximum allowed by Survey Monkey) covering the components identified during the literature review and confirmed by the Subject Matter Experts. These can be found as Appendix 3, investor survey.

6.3.2.3 Scales

The main scale used was 5 point Likert – style with point anchors: no interest; nice to have; moderate interest; high interest; absolute must.

6.3.2.4 The 50th issue – changes in investor intentions

The 50th issue focussed on the impact the items / issues would have on investor intentions. It was worded:

Q50: Assuming most of the data I have rated as 'a must' or 'of high interest' were to be available, I estimate it could vary my assessment of organisational value (higher or lower) as follows: 0%; Up to 10%; Up to 20%; Up to 30%; Up to 40%; Up to 50%; Do not know.

6.3.3 THE INVESTOR SURVEY PROCEDURES

The Investor Survey was carried out face to face at the London Investor Show and, subsequently, as an electronic survey.

6.3.3.1 Procedure at The London Investor Show

Those attending the London Investor Show were incentivised by being placed in a lottery, the winner of which won a bottle of champagne. Volunteers were handed a hard copy of the survey and given a seat and clip board. They were asked to read the instructions and comment on anything they could not understand or that could be misinterpreted. Once any queries had been answered they were requested to complete the survey in their own

time. The Researcher was available to answer any questions but the survey items were clear enough to be completed without queries. 44 surveys were completed by this method. They were subsequently input manually into SPSS version 24.

6.3.3.2 The Electronic Survey procedure

The survey was subsequently distributed electronically to the database of investors owned by the London Investor Show. 66 responses were obtained. The size of the database was commercially confidential and not revealed to the Researcher. Nevertheless, it can be calculated that response rate was disappointing. For example if there were 2000 investors on the database, then the response rate would be 3%. 3000 investors would make the response rate 2%. Typically an internet survey response rate in the late 1990s would be in the region of 35% – 40 % (Cook et al., 2000). However, response to emails in later years may be lower because of the increase in the number of messages that individuals receive per day. This has led to ‘email overload’ (Dabbish & Kraut, 2006; Sappleton and Lourenço, 2016). Indeed, current email systems can be programmed to screen out survey requests. Nevertheless the research carried out by Sappleton and Lourenço (op. cit.) suggested that an expectation of a response rate of 36% to 39% would still be reasonable.

6.3.3.3 Combining the responses

The two sets of responses, totalling 110 responses, were combined in SPSS version 24 and tested for consistency using an intraclass correlation. The results are described in the next Section.

6.3.4 THE INVESTOR SURVEY RESULTS

The Investor survey was used to identify those aspects of HC which would influence investment decisions. The results would contribute to establishing the content of the instrument.

6.3.4.1 Checking for missing values

Missing values were identified using the 'pairwise' option in SPSS analyze / explore. Missing values were identified for 6 of the potential 4968 ratings (108 investors x 46 issues). Based on the recommendations by Downey and King (1998), these were substituted with the average score for each issue (mean substitution approach).

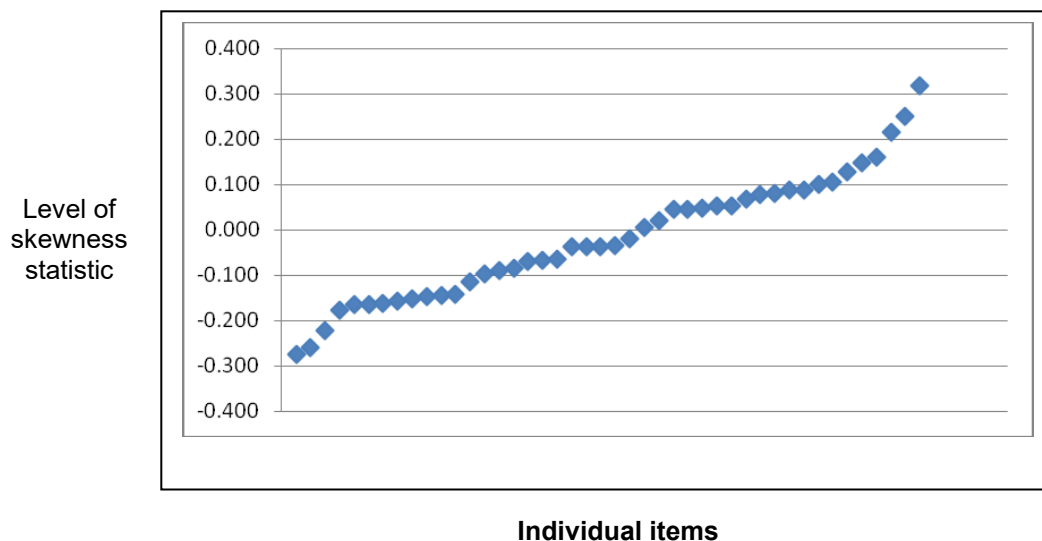
6.3.4.2 Checking for consistency of responses

As the 110 responses came from two different samples of the same population (the London Investor Show and subsequent internet survey), they were checked for consistency of response using to an intraclass correlation (ICC). A high degree of consistency was found. The average measure ICC was .977 with a 95% confidence level from .970 to .983 ($F = 42.702$, $p < .001$). This result demonstrates that respondents from both samples were like-minded in their interest in HC.

6.3.4.3 Checking for normal distributions

In order to use the power of parametric statistics the data collected needs to be normally distributed or be close to a normal distribution. If the data is skewed then there is a risk that the statistical analysis would be rendered inaccurate.

The distribution of ratings for the investor survey were found to be skewed ranging from -.275 to +.317. These levels of skewness are acceptable for the purposes of parametric statistics where levels of -1 to +1 have been found not to distort the results (Muthén and Kaplan, 1985). The range of skewness is demonstrated in Figure 6.3.4 (a) below.



Figures 6.3.4 (a): The range of skewness for Investor ratings

6.3.4.4 Checking for outliers

The presence of outliers can significantly influence the results of statistical analyses, for example by biasing the size of a mean and standard deviation (Field, 2011).

Because of this researchers search their data for outliers and determine whether or not to amend or delete them. It is not always correct to delete outliers because they may actually be a true representation of the population characteristics (Orr et al. 1991). However research by Osborne and Overbay (2004) indicates that, in most of the cases they investigated, removal of outliers improved the accuracy of results and reduced errors.

Outliers were identified using box plot output from SPSS. They were defined as values which extended more than 1.5 box lengths from the edge of a box (Pallant, 2010). In this sample, one respondent was found to generate an outlier for three different items. On inspection, the respondent had regularly used the 'of minimal interest' rating and this respondent was omitted from subsequent analyses leaving a total of 109 responses.

6.3.4.5 Investor survey results - levels of interest

The Researcher has represented in this Section the relative level of interest in the eyes of investors of a sample of issues. Level of interest was described in the survey as representing investors' opinion on the importance they would attach to obtaining this sort of information when making investment decisions.

In order to take into account all ratings from each Investor, based on Likert's requirement that a numerical value should be assigned to each point of a scale (Likert, 1974), their ratings were allocated values as follows: Of minimal interest x 1; Of some interest x 2; Of moderate interest x 3; Of high interest x 4; A must x 5.

The resulting scores were summed and then divided by the number of respondents so establishing a representative score. An example calculation is shown in table 6.3.4. (b) below.

Minimal interest	Some interest	Moderate interest	High interest	A must	N	Score
2	8	26	49	23		
X1	X2	X3	X4	X5		
= 2	+ 16	+ 78	+ 196	+ 115	/109	= 3.77

Table 6.3.4 (b): Example calculation of a representative score for level of Investor interest

The items were ranked based on these representative scores.

The scores (out of 5) for the top five financial (cost based) items are shown in table 6.3.4 (c) below.

Establishing the cost of pension liabilities.	4.22
Establishing the cost of equity based reward (e.g. phantom equity; share schemes).	4.01
Establishing the cost of variable pay (e.g. bonuses).	3.99
Establishing the cost of fixed pay.	3.92
Establishing the cost of maintaining / improving knowledge & skills	3.80

Table 6.3.4 (c): The top 5 items rated by Investors which directly reflect costs

The scores for the top 5 non-financial items are shown in table 6.3.4(d) below

Evidence that management has an approach for spotting changes in the market place which could influence business objectives.	4.13
Information on levels of employee turnover (percentage voluntary leavers per year).	3.88
Establishing how effectively knowledge within the organisation is created, shared and captured.	3.80
Information relating to relationships with controlling stakeholders (e.g. key customers)	3.79
The loss of output due to disputes (e.g. working - to - rule or strikes).	3.77

**Table 6.3.4 (d): The top 5 items rated by Investors
which did not directly reflect cost issues.**

The implications of these results are that there are some issues which may well influence the intended level of investment if the information available could be trusted. These implications are also reflected in the level of variability in investor intentions which is discussed in the next sub-section.

6.3.4.6 Investor survey results - variations in investor intentions

The last issue of the investor survey to be answered (issue 50) was: Assuming most of the data I have rated as 'a must' or 'of high interest' were to be available, it would vary my assessment of organisational value (higher or lower) as follows:

0% Up to 10% Up to 20% Up to 30% Up to 40% Up to 50%

The answers from the 96 Investors (out of the total of 110 who responded) who answered the question were:

0%	= 15
Up to 10%	= 8
Up to 20%	= 18
Up to 30%	= 13
Up to 40%	= 10
Up to 50%	= 32

In choosing a statistical test, to assess if the distribution is significantly different to that expected, the following information / assumptions were made: the sampling was opportunistic resulting in a sample size of 96; the data was in the form of grouped interval data; the assumption of normality was not made (see figure 6.3.4.) and it was difficult to establish an expected frequency.

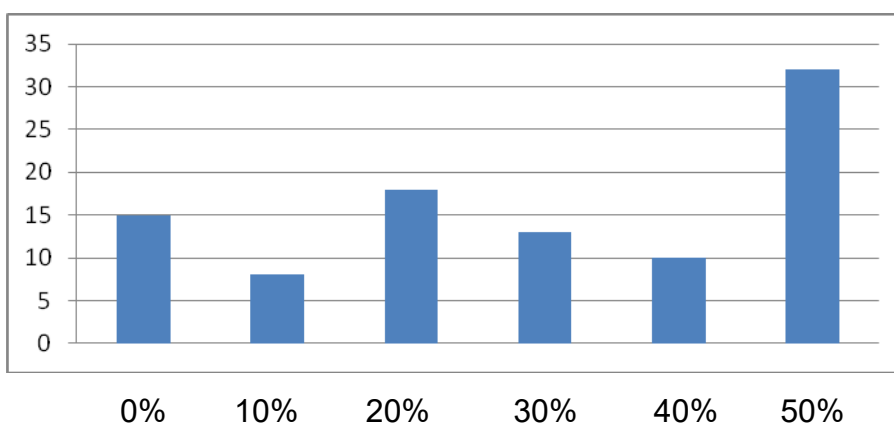


Figure 6.3.4 (e): Distribution of Investor responses for question 50.

Based on the above, the non parametric Kolmogorov Smirnov one sample test was chosen. This compares the sample distribution with four other theoretical

distributions: normal; uniform; poisson and exponential. The alternate hypothesis was specified as the cumulative frequency distribution of Investor data differing from the theoretical frequencies relating to a normal distribution; a uniform distribution; a poisson distribution and an exponential distribution.

The results were as follows:

The Investor data of $n = 96$, $D = 0.20$, $p < .001$ does significantly deviate from a normal distribution.

The Investor data of $n = 96$, $D = 3.27$, $p < .001$ does significantly deviate from a uniform distribution.

The Investor data of $n = 96$, $D = 3.92$, $p < .001$ does significantly deviate from a poisson distribution.

The Investor data of $n = 96$, $D = 3.82$, $p < .001$ does significantly deviate from an exponential distribution.

The observed frequencies of the investor data are significantly different from four theoretical distributions. It is concluded therefore that available Human Capital data identified by Investors as 'a must' and 'of high interest' would significantly influence Investor intentions by as much as 50%

6.3.5 INVESTOR SURVEY SUMMARY

In summary, the investor survey identified that three categories of investor, specifically those who use socially responsible criteria; those focusing on low turnover / relationship building and those using passive / buy and hold strategy, are interested in HC and associated intangibles. The survey identified those issues relating to HC and associated intangibles that are of particular interest to the population sampled. Lastly, the survey also demonstrated that trusted information on HC could influence investor intentions.

6.4 DESIGNING THE INSTRUMENT

Once the initial range of items to be used had been established by Subject Matter Experts and Investors the instrument itself was drafted.

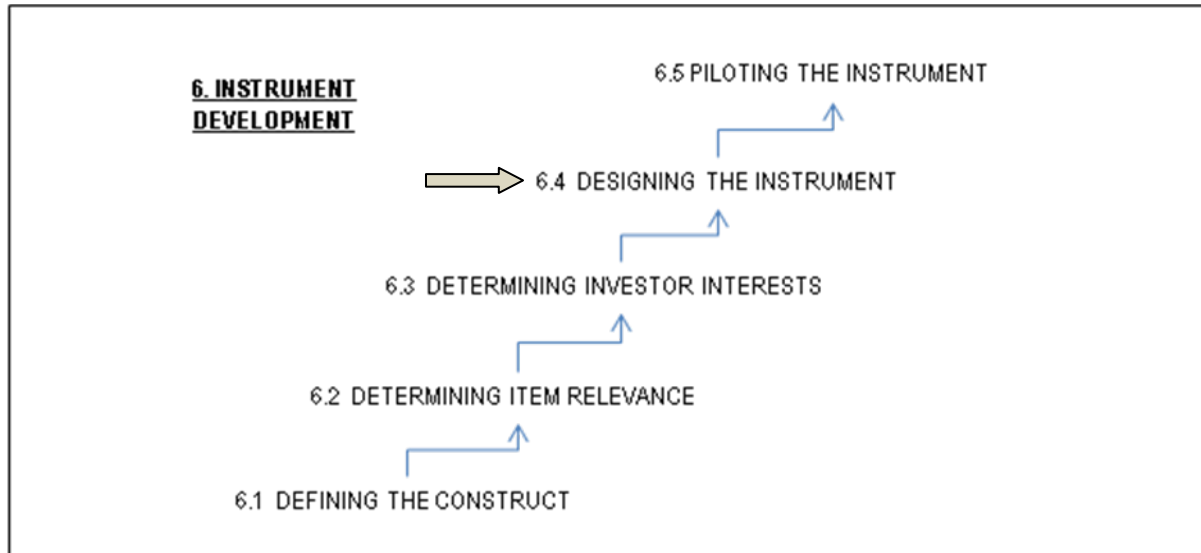


Figure 6.4 (a): Instrument Development – Designing the Instrument

This section describes the design of the draft instrument before piloting it. An outline of the design stage is shown as figure 6.4 (b) below. The figure is repeated throughout this Section as each element of the design is completed. The stage included choosing a name for the instrument; drafting the introduction; including demographic data; introducing the theoretical components; determining the scales to be used; establishing the range of response formats; specifying the return procedure and establishing the scoring mechanism.

The instrument was in the form of an Excel spreadsheet for piloting and an electronic survey for general distribution to SME executives.

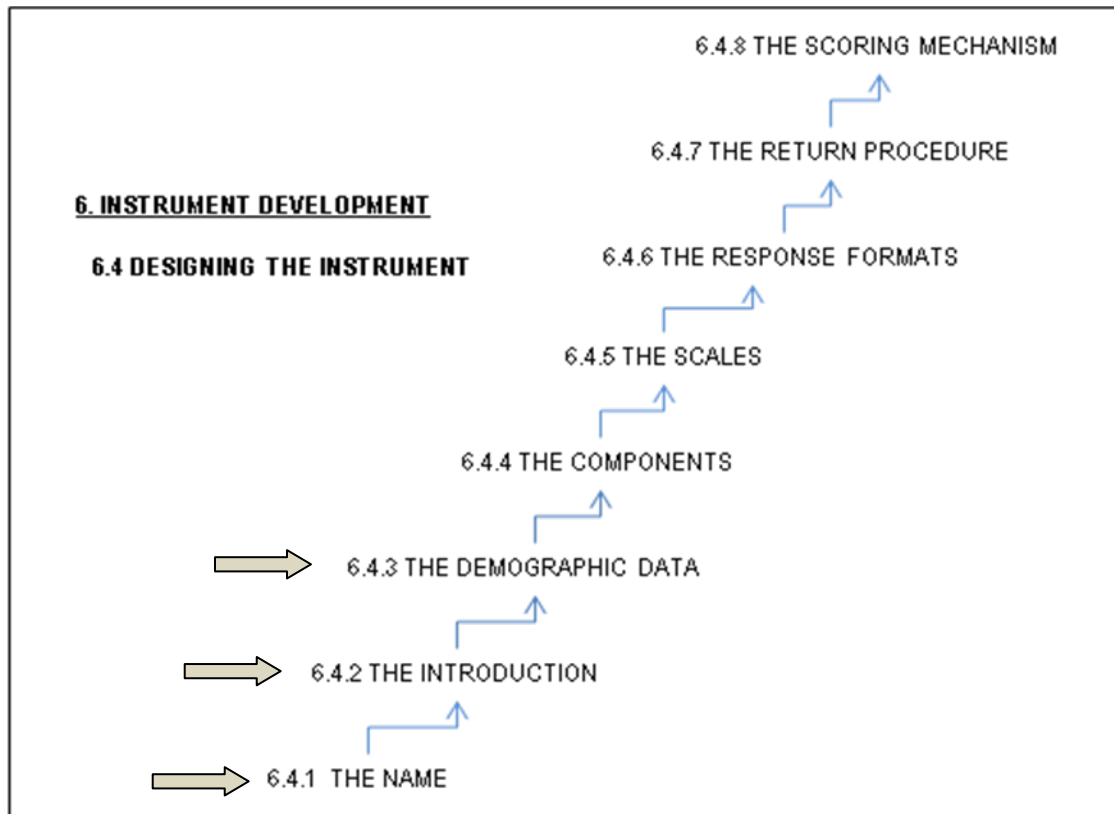


Figure 6.4 (b): Designing the Instrument – Name, Introduction and Demographic data

6.4.1 THE NAME

The instrument's name is 'The SME Human Capital Report'. This reflects the Investors' interest in an SME providing a systematic account of the quality of its workforce in the context of investment, merger or acquisition.

6.4.2 THE INTRODUCTION

The Introduction to the proposed Instrument was drafted to include an outline of the reason(s) for completing it; promise of commercial confidentiality, how to complete it; the need to list associated documentation and guidance on how to return the completed instrument. The introduction read as follows:

This Review aims to generate discussion about the quality your workforce and the influence it has on reaching your business objectives. The Review should be carried out by your Board and / or Senior Management Team. A Facilitator may be requested.

Definitions of the wording used are available as a separate document.

The judgements you will make are commercially confidential and will not be divulged to any other party other than the Researcher and doctoral supervisors.

Although it is feasible for a Board or Senior Management Team to progress through the Review without any previous research into your business practices and their outcomes, the discussion takes less time if, as individuals, you have previously considered the following:

- The characteristics of the market(s) in which your business competes;
- Your business's goals;
- Your important external relationships with stakeholders;
- The way in which your organisation is structured and operated;
- The composition of your workforce (gender balance; age profile etc);
- How members of your workforce are expected to relate to each other (commonly called 'culture');
- Your views on workforce know-how and on what they are based;
- Your views on workforce experience (years service with you) and stability (turnover; grievances etc) and on what they are based;
- Your policies on reward (pay and benefits)
- Your views on workforce adaptability and on what they are based;
- Any workforce risks relating to employment issues;

It would speed up your discussion if you had reviewed any documentation associated with the topics. You will have been sent details of relevant documentation separately.

Now, please progress to the next page...

6.4.3 THE DEMOGRAPHIC DATA

The demographic data requested was for the industry in which the respondents worked; their role and the number of people in their business.

Industry specifications were those recommended by Survey Monkey (op. cit.):
Administration / Office support; Construction; Consultancy including computer

programming; Engineering, testing and analysis; Financial services; Legal / Accounting Services; Manufacturing and Other (to be specified).

Roles specified were Owner / Board Member; Senior Manager; Human Resource Professional and Other (to be specified).

The number of people in the respondents' business was divided into: below 49; 50 – 250; 251 – 500; 501 – 3000 and 3000 plus. Those respondents clicking on any option outside of the medium sized headcount specification of 50 – 250 were asked not to complete the instrument.

6.4.4 THE COMPONENTS

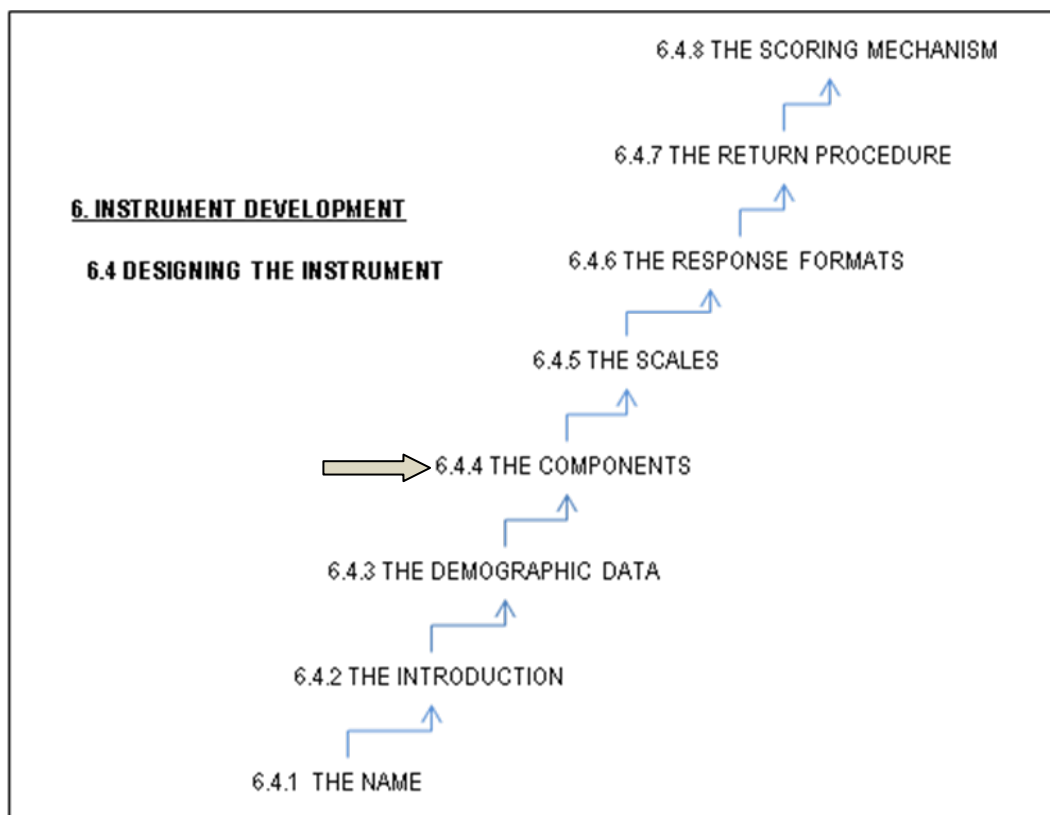


Figure 6.4.4: Designing the Instrument - The Components

This sub-section lists the theoretical components used (based on the literature review sub section 2.7.5) together with items that were listed under each component heading. Two components listed under sub-section 2.7.5 were omitted from the list. Human Resource Management was omitted because it would be included as people management practices within the retained factors (after factor analysis). Leadership too was omitted because the style of leadership would be evident from items contained within remaining components. It was expected that the components and item sequencing would be amended as a result of subsequent factor analysis.

6.4.4.1 Theoretical component (Influencer): Strategic Intent

Before asking specifically about Human Capital, I would like your views on the way your business operates in your market(s). This is because the human capital in an organisation can be strongly influenced by this.

- Concentrating on a specific market, group of customers, product or service - a well defined niche.
- Emphasizing cost efficiency throughout our business - a low cost producer.
Achieving cost advantage by a combination of experience and economy of scale.
- Offering a unique product / service which enable us to charge a high price.
Differentiating ourselves through product design and / or better service and / or customer relationships
- Being continuously on the lookout for new markets, products or services.
Emphasizing research and development, decentralisation and flexibility, less formalisation, using flexible technology.
- Establishing a narrow product / market domain and protecting it though centralised control and / or high degrees of formalisation and / or cost efficiency.

6.4.4.2 Theoretical component (Influencer): External Relationships

These items help establish the external connections which are key to the survival and competitiveness of your business.

- Initiating / maintaining effective relationships with investors / funders
- Initiating / maintaining effective relationships with key customers
- Initiating / maintaining effective relationships with suppliers
- Initiating / maintaining effective relationships with business partners
- Initiating / maintaining effective relationships with knowledge rich agencies
- Initiating / maintaining effective relationships with regulatory authorities

6.4.4.3 Theoretical component (Influencer): Workforce Integration

The way a business is organised and operates can impact on the effectiveness of its human capital. These items investigate some of the issues which can influence the nature of human capital in a business.

- Including issues of organisation and people as part of a (formal / informal) business strategy
- Documenting processes and practices to meet standards / improve consistency of operations
- Ensuring business processes run smoothly between different organisational units
- Ensuring your organisation structure facilitates the effective use of people
- Agreeing formally who should do what, how well, and when
- Using up to date technology to its maximum potential
- Regularly reviewing operations to identify opportunities for improvement

6.4.4.4 Theoretical component (Influencer): Workforce Investment

The following data is usually foremost in the minds of Investors.

The data supplied will remain anonymous and commercially confidential.

- Your revenue 2014 - 15
- Your revenue 2013 – 14
- Your revenue 2012 – 13
- Your profit 2014 – 15 (earnings before Interest and Taxation or EBIT)
- Your profit 2013 – 14 (earnings before Interest and Taxation or EBIT)
- Your profit 2012 – 13 (earnings before Interest and Taxation or EBIT)
- Cost of fixed pay 2014 - 15 (pay that does not vary according to performance or results).
- Cost of variable pay 2014 – 15 (include payments to contingency workforce; consultants; agency staff)
- Cost of benefits 2014 – 15 (e.g. Insurances; pensions; day-care; child care; company cars).
- Cost of maintaining / updating knowledge and skills (training courses; apprenticeships; coaching; attendance at conferences)

6.4.4.5 Theoretical component : Workforce Composition

The composition of a workforce can be important because of, for example, an aging population with associated 'retirement bubble' or an excessive use of contingent staff (e.g. Agency / Consultancy) or an aim to balance gender or racial mix.

- Ensuring the correct headcount to enable the achievement of business goals at optimum cost
- Regulating the workforce age profile in order to avoid a 'vacancy bubble' occurring
- Using outsourcing (consultants / agency / actors) to complement a permanent workforce
- Ensuring equal opportunity and associated workforce diversity

- Indicate the percentage of your workforce who possess degree level qualifications
 - a) Board level
 - b) Management and Supervisory level
 - c) Technical Specialists
 - d) Other members of the workforce
- Indicate the percentage of your workforce with qualifications less than High School Graduation (USA) or 5 GCSEs grades A – C (UK)

6.4.4.6 Theoretical component: Workforce Know-How

Know-how is defined as the knowledge, skill and experience needed to perform effectively at work.

- Recruiting the right people for the right roles at the right time
- Maintaining the right levels of technical expertise to enable attainment of goals
- Ensuring managers and supervisors are competent to carry out their role
- Ensuring people have opportunities to keep their knowledge and skills up to date
- Identifying people to take over key roles in the event of resignation, retirement or ill health.
- Specify the average number of years service there are at each of the levels below:
 - a) Board level
 - b) Managerial level
 - c) Technical Specialists
 - d) Other members of the workforce

6.4.4.7 Theoretical component: Workforce Relationships

The nature of internal relationships varies between different organisations. These relationships help determine the 'culture' experienced by individuals within a workforce.

- Capturing and using knowledge (e.g. learning from mistakes; enabling access to information)
- Empowering the workforce to monitor and control the quantity / quality of output
- Ensuring regular (at least quarterly) communication from the SMT to members of the workforce
- Ensuring ease of communication from members of the workforce to the SMT
- Managing conflict in order to encourage mutually beneficial results (win - win)
- Enabling people to use web technology to communicate and collaborate internally
- Specify the number of formally submitted grievances over the last year

6.4.4.8 Theoretical component : Workforce Commitment

Commitment is 'extent of willingness to work towards meeting organisational goals'.

- Appointing someone in the SMT who is responsible for initiating discussion on people and organisation
- Ensuring pay / benefits are competitive when compared to other organisations
- Enabling Managers to benefit from the financial success of your business
- Enabling non - Managers to benefit from the financial success of your business
- Paying managers who achieve results more than those who do not
- Paying non-managers who achieve results more than those who do not
- Ensuring enough funds to honour pension promises
- Offering flexible working opportunities to retain talent where operationally feasible.
- Specify your percentage level of employee turnover over the past year (those who have left voluntarily, including retirements)

- a) Board level
 - b) Managerial level
 - c) Technical Specialists
 - d) Other members of the workforce
- Specify the number of working days lost per employee through illness, accidents and unauthorized absence over the last year.
 - Specify the impact on your operations due to disputes over the last year (e.g. Strikes; lockouts; overtime bans; boycotts; working to rule)

6.4.4.9 Theoretical component : Workforce Adaptability

Workforce adaptability is defined as: 'willingness and ability to learn new competencies in order to perform under first time, difficult or different conditions'.

- Members of your workforce working under a policy and expectation of continuous improvement
- Members of your workforce adapting to new procedures as a result of changed circumstances
- Ensuring people can carry out more than one role to maximise flexibility (job / task rotation)
- Members of your workforce regularly changing ways of working due to adoption of opportunities
- Capturing and implementing new ideas generated by the workforce
- Using a range of employment contracts in addition to 'permanent full-time'
- Outsourcing – transferring work to external suppliers instead of doing it in house
- List those issues that have significantly influenced the way you do business over the last 3 years.

The following items were used in the pilot sessions but omitted from the executive survey because of the restrictions in item numbers imposed by CINT.

6.4.4.10 Theoretical component : Workforce Risks

Investors / Analysts will investigate any financial or legal risks to your business.

Identify any risks you know of by rating the issues below. These issues are those commonly found in due diligence checklists.

- Screening employees for 'right to work' in the EU / UK
- Contracts of employment being up to date and agreed
- Service agreements for directors / senior employees being up to date and agreed
- Individual employment contracts being agreed which contain material financial obligations
- Retention / severance agreements which contain material financial obligations
- 'Collectively bargained' agreements which include scheduled pay increases
- Ensuring enough funds to honour pension promises
- Defined benefit plans which guarantee specified payments on retirement.

6.4.5 THE SCALES

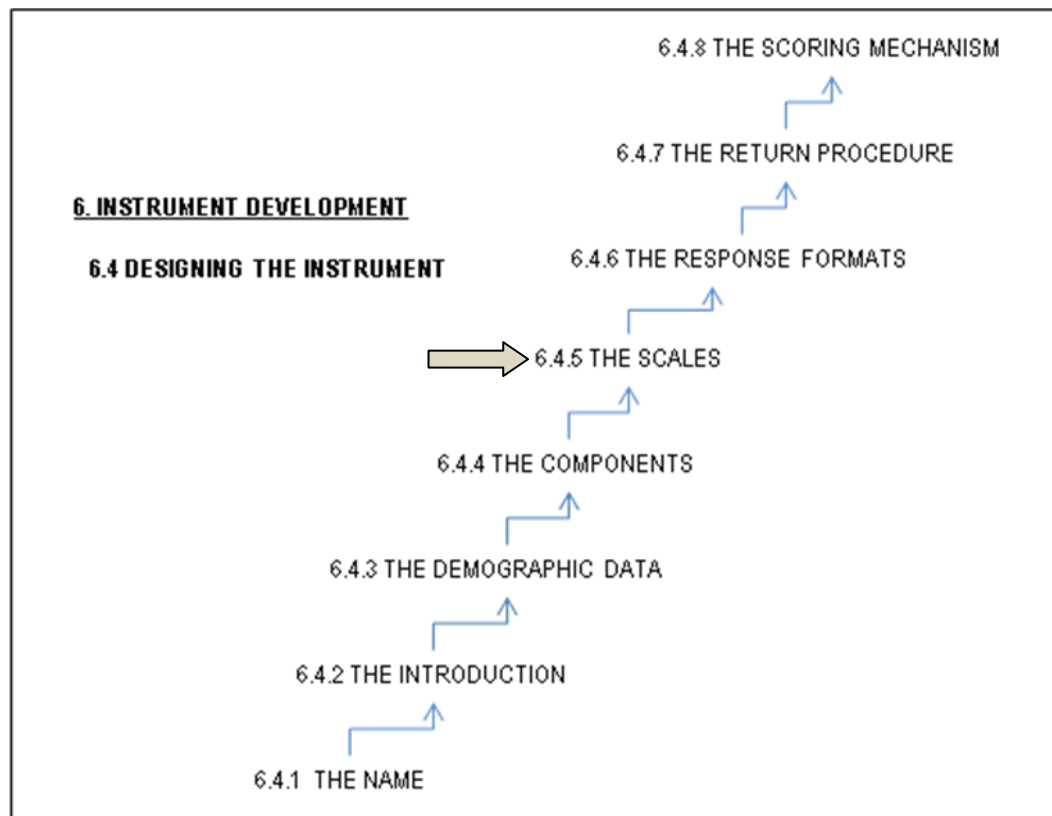


Figure 6.4.5: Designing the Instrument - The Scales

The determination of the most appropriate scale to be used was based on these considerations: the purpose of the scale; the probability of a positive response; scale reliability and validity; the number of judges required in the early stages of the study; determining item dimensionality; the required level of measurement; deciding on the number and definition of points and determining scale symmetry.

6.4.5.1 Determining the purpose of the scale

Torgerson (1958) proposed three possible purposes to scaling, these being (1) to focus on subjects; (2) to focus on both subjects and stimuli and (3) to focus on stimuli alone. Of the three, focussing on stimuli and focus on subjects and stimuli were not considered

appropriate because the overall purpose of the study is to focus on a subject, this being an organisation. Consequently, in the context of the current study, it is the subject centred approach was considered to be the most relevant option.

6.4.5.2 Determining the probability of a positive response

According to McIver and Carmines (1981), scaling can offer deterministic (decisions with certainty) or probabilistic (decisions with uncertainty) responses. There are three common approaches to scaling: Thurstone's equal appearing intervals; Likert's summative scaling and Guttman's cumulative scaling (Hubley and Zumbo, 2013). Thurstone and Likert offer probabilistic scaling models, Guttman a deterministic scaling model.

With the Guttman scale the probability of a positive response fails to increase until a specific value is reached. After this the probability of a positive response jumps. This situation was considered unlikely in the case of the draft HC items where the probability of a positive response is expected to increase with an increase in the perceived state of HC maturity. So the Guttman option was discarded.

In the case of Thurstone and Likert, the probability of a positive response increases with increase of value. Consequently it is these two options from which a choice has been made.

6.4.5.3 Scale reliability and validity

There has been wide ranging commentary in the academic literature concerning which approach (Thurstone or Likert) was most likely to generate a measure that is reliable and

valid (Edwards and Kenney, 1946; Barclay and Weaver, 1962; Roberts et al., 1999). In the context of the current study a view was taken that, as long as it had been demonstrated that both had been shown to generate valid and reliable results, this need not be used as a deciding factor.

6.4.5.4 The number and positioning of statements required per topic

A most compelling deciding factor was that the Thurstone approach includes a requirement to generate large numbers of statements which represented the full range of circumstances for each topic. This would have been relatively easy in the context of academic qualifications which, in the UK, are defined as ranging from level 1 to level 8 (Quality Assurance Agency, 2017). However, it would have been significantly more difficult to generate descriptors representing the full range of contingencies relating to, for example, employee training, levels of diversity or role flexibility.

In addition to the number of statements there is a requirement that each statement selected should potentially be uniquely placed in one position on a Thurstone scale. Nunally (1978) suggested that it is rare to find a statement that everyone agrees should be placed in any given position on a scale. The Likert approach is not subject to these requirements.

6.4.5.5 The number of judges required in the early stages of the study

The statements generated using the Thurstone approach need to be rated by judges in order to create enough data to enable statements to be selected and placed on a continuum. It has been argued that 100 judges would be needed in order to create a reliable scale. Also those judges should be representative of the enterprises to be

assessed (Edwards, 1957). As such this would be a significant administrative hurdle to overcome early in the study. The Likert approach is not subject to these requirements.

6.4.5.6 Determining item dimensionality

Uni-dimensional scaling applies to those items where there exists one single dimension underlying a set of data. In contrast, multi-dimensional scaling applies to those situations where more than one dimension may apply to a set of data. The end result of multi-dimensional scaling is to classify a dimension according to two or more criteria typically presented in the form of a two or three dimensional figure. The Researcher judged each draft item in the current study to be uni-dimensional in nature.

6.4.5.7 Determining the level of measurement

The choice of scale determines those mathematical calculations that are possible. The most appropriate scale offers an interval level of measurement enabling parametric statistics to be used when determining reliability and validity. Since Likert's original article in 1932, Likert or Likert – style scales have been subject to years of debate about whether their level of measurement is ordinal (Jamieson, 2004) or interval (Carifio and Perla 2007; Joshi et al. 2015; Norman, 2010, Sullivan and Artino, 2013). The debate can be resolved by stating that a Likert item is theoretically ordinal in nature, although empirically may successfully be analysed using parametric statistics. A Likert scale (the sum of a range of Likert items) is interval in nature and has been successfully analysed using parametric statistics.

6.4.5.8 Deciding on the number and definition of points

The number of points on a scale can influence both validity and reliability (Krosnick and Fabrigar, 1997; Weijters et al., 2010; Contractor and Fox, 2011). The relevance of number of points has been discussed regularly in the literature (Miller, 1956; Jacoby and Matell, 1971; Cicchetti et al., 2006; Garland, 1991; Weng, 2004; Weijters et al., 2010; Cowan, 2010). Apart from Cicchetti et al. (op cit), who concluded that the number of points did not affect internal consistency, the most recent studies (op. cit.) have recommended that 5 or 7 points offer the best compromise between differentiation and consistency. These recommendations echo those of Williams et al. who came to the same conclusion in 1952.

In order to improve the reliability of the scales, a decision was taken to define each point, or 'anchor' them. There are two approaches to anchoring. The first approach, commonly called the END form, involves defining the two extremes of a scale. For example the extremes of a 5 or 7 point scale could be defined as 'extremely unlikely' and 'extremely likely'. The second approach, commonly called the ALL form, involves defining all points along a scale. For example 5 points on a scale could be defined as 'extremely unlikely'; 'unlikely'; 'neither likely nor unlikely'; 'likely' and 'extremely likely'. The use of anchoring has been shown to improve the consistency of ratings (Menold et al., 2013) but may also put into question the likelihood of the 'equal interval' nature of points along a scale (Cummins and Gullone, 2000).

The establishment of the definitions of points along a scale may be found in the studies as early as the 1950s (e.g. Barrett et al. 1958). Since then anchoring has been used extensively in the form of 'Behaviourally Anchored Rating Scales' (BARS) for the purpose

of assessing performance reliably (Atkin and Conlon, 1978; Kingstrom and Bass, 1981; Grussing et al., 1994; Ohland et al., 2012; Debnath, et al., 2015).

Accordingly, in order to improve the consistency of ratings, the Researcher decided to adapt the concept of BARS and develop definitions for each point along the scale continuum. This decision was made in the knowledge that it may affect the assumption of 'equal intervals' throughout a scale.

Trial definitions were made for potential 5 and 7 point scales. In the case of 7 points, it was difficult to establish definitions which offered meaningful distinctions between all 7 levels. Consequently a 5 point scale was used during the piloting of the instrument.

The anchor definitions of the proposed 5 point scales were piloted with the subject matter experts. All confirmed the rankings as per the proposed sequencing. The rankings and anchor points are listed under the Results Section.

6.4.5.9 Determining scale symmetry

The choice of a 5 point anchored scale as described above is theoretically symmetrical in the sense that there is a mid point. If the five points were defined using the END approach (see 5.6.4.6 above) then it would be feasible to assume symmetry together with associated assumptions of equal intervals along the scale and a normal distribution of ratings. However, the use of the ALL form with definitions for each point along the scale may reduce the symmetry and may also disrupt the assumptions of equal intervals.

6.4.5.10 Choosing the appropriate scale

Based on the criteria outlined, Likert - like scaling was chosen. This is because the initial demand on Researcher time was judged to be acceptable; the subject (an enterprise) would be placed on a continuum based on responses to a number of items relating to each factor; the probability of a positive response was judged to increase with increase in HC maturity; each item was likely to be uni-dimensional; a Likert scale (as opposed to an item) generates an interval level of measurement which enables the use of parametric statistics when assessing reliability and validity.

The scale used consists of 5 points with an additional option to indicate an item is not relevant in the context of any given organisation. The points are defined as: Not relevant in this context = 0; Unacceptable = 1; Poor = 2; Satisfactory = 3; Definitely capable = 4; Leading Edge = 5. Each point reflects a rating that participants need to make in relation to each item which describes an element of HC / OC / RC.

6.4.6 THE RESPONSE FORMATS

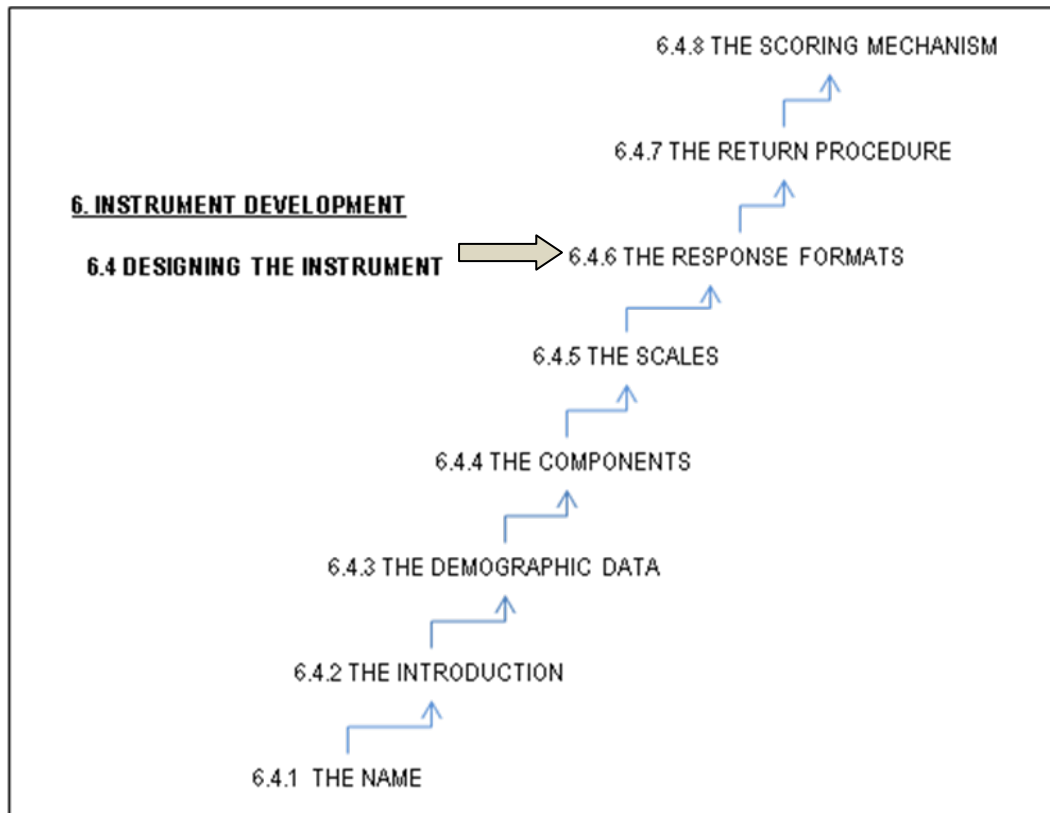


Figure 6.4.6: Designing the Instrument – The Response Formats.

There are three types of response format within the instrument: ratings; narrative and numerical.

6.4.6.1 Ratings

The use of a Likert – type scale enables the use of ratings ranging from 0 (= not relevant in this context) to 5 (= leading edge). The ratings, together with the multipliers derived from the investor survey (see Section 6.3.4) enable a quantitative measure depicting the overall quality of HC within an SME. The scoring is described in sub – section 6.4.8 below.

6.4.6.2 Narrative

Respondents have the option of providing narrative based on information contained in documents within an SME, or stating that no documentary evidence exists. The narrative aims underwrite the reasoning behind the ratings given under any given component of HC. For example a rating on levels of workforce diversity may be underwritten by personnel files (electronic or hard copy) which provide confirmation of personnel mix. As such some of the narrative may well include numerical data.

6.4.6.3 Numerical

As explained above, respondents are encouraged to back up their ratings with numerical data wherever feasible. Another example would be specifying levels of employee turnover linked to ratings on the component workforce commitment.

In addition respondents are asked to provide financial data relating to, for example, annual revenue, annual investment in pay and benefits and annual investment in training and development.

6.4.7 THE RETURN PROCEDURE

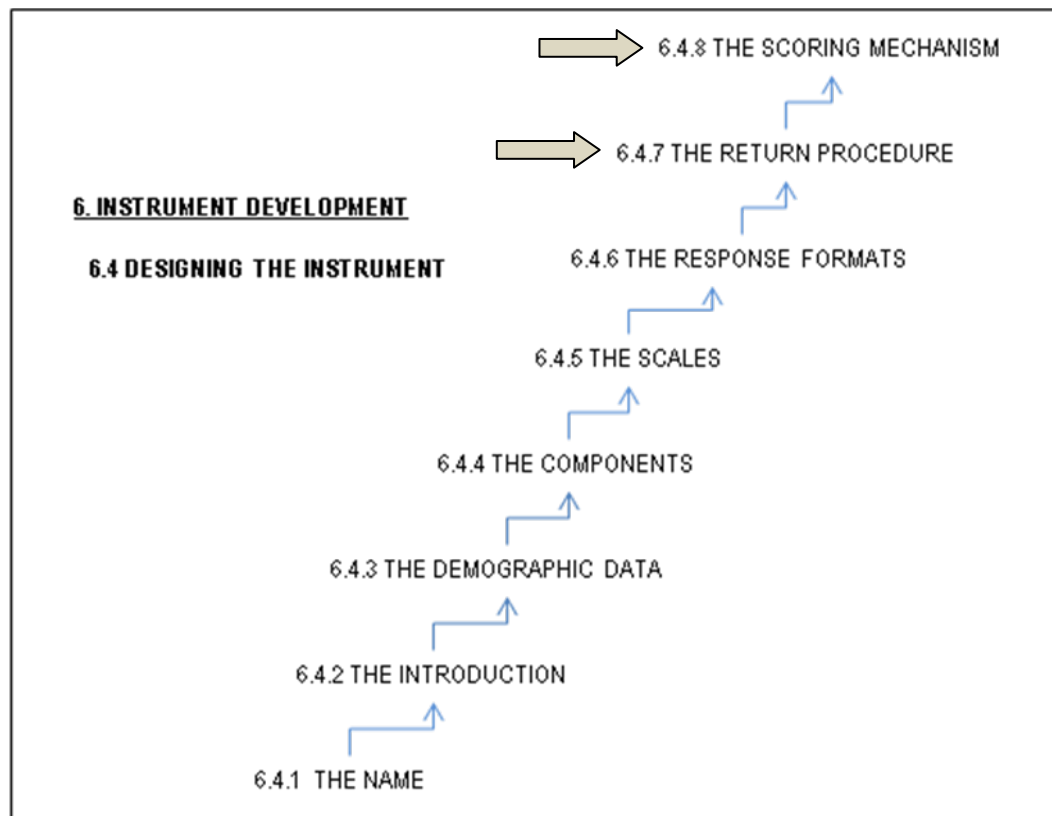


Figure 6.4.7 Designing the Instrument –The Return Procedure and the Scoring Mechanism.

The return procedure required respondents to click on a link to confirm they had completed the survey. The responses were then automatically despatched to a server which, in this case, is that of the survey administrator (See section 7.1). The responses were then forwarded electronically to the Researcher's software, The Survey Analysis Package (Wills and Jenkins, 2017). Subsequently the data were transferred electronically to the IBM Statistical Package for Social Science, version 24, for analysis.

6.4.8 THE SCORING MECHANISM

The scoring mechanism provides a numerically based assessment of the quality of an SME's HC and enables it to be compared with other SMEs. The value of each

item is calculated by multiplying its rating established by executives in an SME (0 – 5) and investor interest level (2.85 to 4.12) developed as a result of the investor survey. An example is shown in table 6.4.8. (a) below.

Item wording	Item rating from one SME	Investor multiplier from the survey	Item score
Initiating / maintaining good relationships with key customers	4	3.79	15.16

Table 6.4.8 (a): Calculating the value of an item

Next, all item values for a component are summed and an average score for that component calculated. If an item has been rated as zero (i.e. not relevant in this context) the score is not included in the calculation. An example is shown in table 6.4.8. (b) below.

Item wording	Item rating from one SME	Investor multiplier from the survey	Item score
Initiating / maintaining good relationships with key customers	4	3.79	15.16
Initiating / maintaining good relationships with suppliers	3	3.79	11.37
Initiating / maintaining good relationships with business partners	0	Not included in the calculation	
Component average score			13.27

Table 6.4.8 (b): Calculating the value of a component (average score)

Lastly the item scores are compared with benchmark scores obtained as a result of the SME HC Assessment described in Section 7 below. An example is shown as table 6.4.8. (c) below.

How You Compete in Your Markets					
	Your ratings	Investor interest scores	Your score (rating x interest)	Comparison score	Difference
Concentrating on a specific market, group of customers, product or service - a well defined niche.	5	4.08	20.4	13.19	7.21

Table 6.8.4 (c): Item Score, Comparison Score and Difference.

An example of a full enterprise report may be found as appendix 8

6.5 PILOTING THE INSTRUMENT

Structured interviewing was used to pilot the instrument. This took place in two stages, the first was piloting with executives in 4 SMEs, the second piloting it with 28 executives from a Business School.

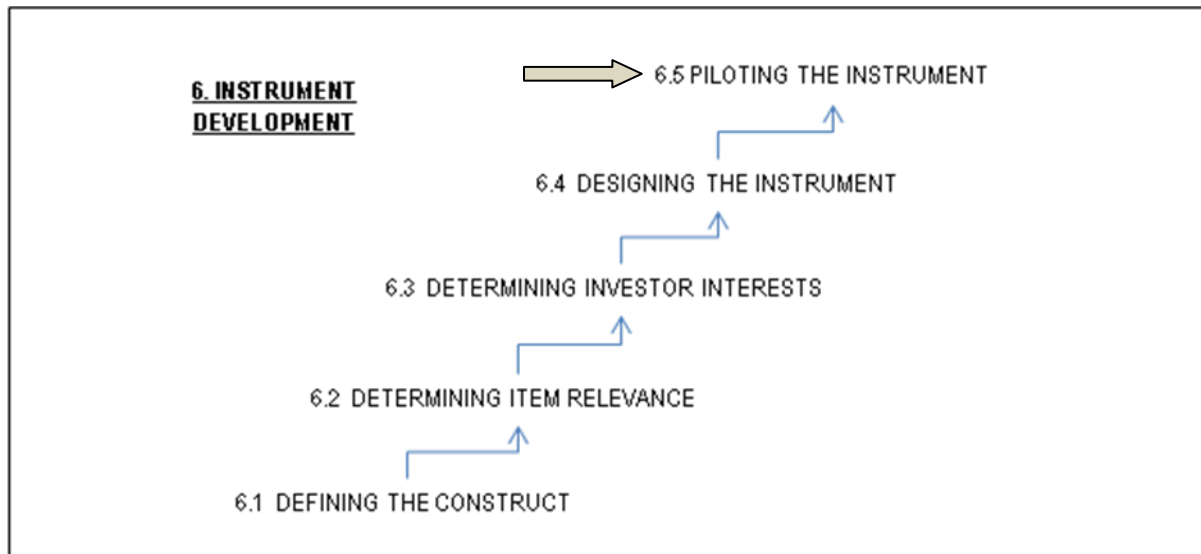


Figure 6.5: Outline of Instrument Development – Piloting the Instrument

6.5.1 PILOTING IN SMEs: STRUCTURED INTERVIEWS

6.5.1.1 Participants from the SME pilots

Piloting the draft instrument in SMEs was carried out with executives from a manufacturing company; a construction company; a theatre and a school. The executives from the manufacturing company consisted of 4 'owner – Directors'; the construction company provided 1 Operations Manager; the 3 participants from the school were the Principal, the Head of Health and Wellbeing and the Director of Finance and Operations; the 2 participants from the theatre were the Head of Human Resources and Head of Finance.

6.5.1.2 Procedure in the SME pilots

The pilot procedure was carried out face to face in the four SMEs. Executives interviewed within their organisations were initially briefed on the purpose and content of the instrument by phone and sent a research agreement. A copy of the agreement may be found as Appendix 5. Two enterprises were found to be willing to carry out the full assessment. Two enterprises were willing to discuss the content of the instrument, but could not find the time to carry out the full assessment.

The Researcher met the participants in their own offices, checked that they had read and accepted the Research Agreement and were still able to devote the time required. The Researcher next read through the draft instrument's instructions. Participants were encouraged to ask any questions about the instructions, but none were forthcoming because of the original telephone briefing.

The Researcher next guided the participants through each section of the instrument. The draft items were discussed component by component. Any items which could be misinterpreted or which could be better worded were identified with suggested edits. Examples of the edits may be found in the next sub – section. All resulting items may be found in Appendix 2 column F.

The ratings for each item were made after in depth discussion between the participants and in all cases a consensus decision was made for each rating. In practice it was found that a 5 point scale was well received but, in order to achieve consensus, participants were allowed to make a rating in between two points. For example 3.5 was an allowed rating between 3 and 4. As explained in Section 6.4.5.8, it was not found to be feasible to

define anchor points for a scale greater than 5 points. Consequently the ratings made between two points did not have anchor definitions and were used as a way of resolving debates about the differing states of HC in the enterprise. The Researcher judged this to be an acceptable compromise because different parts of the SMEs appeared to have different approaches to growing and maintaining HC. In one example the Production Department consisted of highly experienced employees with limited educational achievements. The Research and Development Department and Sales and Marketing Department contained recently recruited employees with technical qualifications and a requirement to practice continuous professional development.

A report on the assessments was subsequently sent to the two enterprises.

6.5.1.3 Results from the SME pilots

The 4 pilot sessions were found to be a valuable way of ensuring the wording of items was understandable and could not be interpreted in more than one way. The sessions also enabled the draft Likert – type scale to be tested.

Examples of suggested edits are outlined in table 5.9 below and the resulting wording of all items may be found as column F of Appendix 2. The final instrument may be found as Appendix 6

Original item	Suggested edits
We have a formal way of agreeing who should do what and how well	Few SMEs would have a <u>formal</u> approach (e.g. performance management), but most would have established an informal approach.
Capturing and implementing new (valuable) ideas from key -employees	Not only key employees have good ideas Delete key.
Our relationship with controlling stakeholders (e.g. large shareholders; some customers)	Not - for - profit enterprises have 'funders' who stakeholders, not shareholders, for example The Council or City Council
Levels of profit	Not a good indicator of performance. Too easily 'gerrymandered'. Better to use Revenue.
We believe that conflict is best resolved confidentially and quietly	Better to specify conflict between departments resolved using a win – win philosophy
Technical / technician	Need to better define this term, because not clear in some SMEs. An example definition could be 'well qualified people who are not in managerial positions'.

Table 6.5.1. Suggested edits to original wording

The draft scales, confirmed by Subject Matter Experts, were found to be understood and capable of distinguishing between different levels of HC / OC / RC. As explained in the previous section, in order to facilitate the discussions during the pilot, 'half way' points were permitted (e.g. 3.5) and this dispensation was found to be generally welcomed by pilot participants.

6.5.2 PILOTING IN A UK BUSINESS SCHOOL: STRUCTURED INTERVIEW

Executives were recruited from Leeds University Business School in return for a talk on the impact of HC on investor intentions.

6.5.2.1 Participants from the UK Business School

This particular cadre was chosen because they were required to have at least 3 years postgraduate experience in business, including management experience and evidence of career progression, before being accepted. They were also undertaking an accountancy module at the time they were involved.

There were 28 participants with characteristics depicted in Table 5.6.2 (a) below:

Job title	Years Experience	Industry	Pre – MBA qualifications
Business Manager	30	Technology	MA & PhD
Commercial Director	25	FMCG	BSc
Engineering Manager	20	Automotive	HNC
Surgery Consultant	18	Healthcare	MBBS
Management Consultant	18	Healthcare / Justice	BA
Regional Manager	15	Automotive	
Project Manager	15	Oil and Gas	M.Eng
Director	14	Technology	BSc
Enterprise Architect	12	Education	BSc
Contract	10	Information Security	BSc
Project Manager	10	Technology	BSc
Director	10	Construction	BEng
Sales Manager	10	FMCG	BSc
Senior Manager	10	Not stated	M.Eng
Executive Director	10	Higher Education	BSc
Operations Manager	9	Amazon	BSc
Sales Director	8	Pharmaceutical	BSc
General Manager	8	Communications	A' levels
General Manager	8	Aviation	BEng
Sales and Marketing Director	8	Manufacturing	BA
Investment Manager	7	Finance	BSc
Operations Director	6	Technology	BSc
Project Manager	6	Print	MSc
Programme Manager	5	Aerospace	BA
Production Manager	5	Plastics	BEng
Manager	5	Construction	BSc
Sales Manager	5	Financial Services	BSc
Technical Lead	1	Technology	PhD

Table 6.5.2.(a) Characteristics of MBA participants.

6.5.2.2 Procedure in the UK Business School

Participants from the Business School were briefed on the content of the instrument and the background to a case study. Hard copies of the combined case study and pilot instrument were handed out and participants requested to complete an assessment of HC / OC / RC within the enterprise as described. The case study pages (see below) were shown on a screen, one by one, with questions asked if necessary. However, as the instrument had been edited as a result of the pilots within SMEs, few were asked apart from clarifying timings and confidentiality.

Assessments were made on an individual basis after discussions in groups. As 'real life' assessments by Directors are intended to be carried out after discussion and consensus, participants in this procedure were allowed to debate the meaning of each item before making an assessment. Completed documents were handed back to the Researcher for manual input to The Statistical Package for Social Science, version 24.

6.5.2.3 Materials used – the case study

The case study was based on the manufacturing company results obtained during the pilot. The case study and instrument were combined into the example format shown as figure 5.6.1.3 below. All references to the manufacturing company were deleted to ensure confidentiality. The narrative served to mirror the discussion carried out at Board level within the SME.

The development of an instrument for enabling investors to assess the quality of human capital in medium sized enterprises

WORKFORCE INTEGRATION	
<p>Do we have a people strategy? Not really. We have an unwritten business strategy based on meeting customer requirements and making a profit. We would focus on people if we had a problem needing to be addressed. Everybody knows what they should be doing. How? Well they have all been with us for many years - most of them anyway - and they have learned on the job, supervised closely to start with. We do not have many complex jobs so formal training is minimal. We do not use a 'performance management system' Ugh.</p> <p>Our organisational structure has been the same for as long as we can remember. Board - Departmental Managers - Supervisors and the rest. Five departments: Goods Inwards & Warehouse; Production; the Laboratory; Sales & Distribution; Admin which includes IT.</p> <p>Yes we do document what we do - our key customers (e.g. Pratt and Whitney) insist on this. Our documentation is up to international standard ISO9000 and is regularly reviewed by customers. Business processes? Hum, well we do have one - or some - we suppose, and the documentation would reflect that. But we rely on departmental expertise plus good relationships between Supervisors.</p> <p>We have a purchasing system (Procurify) ; a production system (Fishbowl) and a sales system (Capsule CRM). They should link, but we implemented them separately and so currently they do not. It would be costly to integrate them. We are thinking of purchasing an HR system, probably MyHRtoolkit.</p> <p>We quickly get to hear if something is going wrong because we are all on the same site. Our approach is probably known as 'firefighting'. We are good at that, but perhaps should be more proactive. Having said that, although we may be seen as complacent, we get regularly the product out on time and to customer requirements. Virtually no customer whingeing.</p>	<p>Likely rating Not relevant = 0 Unacceptable = 1 Improvements needed = 2 Satisfactory = 3 Definitely capable = 4 Leading edge = 5</p>
Documents: Organizational structure; ISO9000; Software installation.	
Agreeing formally who should do what, how well, and when	
Documenting processes and practices to meet standards / improve consistency of operations	
Reviewing organisation structure / processes to ensure they help (rather than hinder) people get their jobs done	
Using up to date technology to its maximum potential	
Monitoring how well individuals and/or teams are doing	
Formally reviewing operations to identify opportunities for improvement	

Figure 6.5.2.(b): Example format of case study

A copy of the complete case study may be found as Appendix 4.

6.5.2.4 Results of the Business School pilot

The Researcher used the results of this pilot to enable an assessment of inter-rater reliability. The data generated demonstrated a high reliability. The average measure Intraclass Correlation was .806 with a 95% confidence interval from .701 to .890. $n = 28$, $F(162,972) = 5.775$, $p < .001$. This suggests that, when ratings are established by consensus, the agreement between raters is very high. This finding reflects the Researcher's subjective finding during the SME pilots.

7. HUMAN CAPITAL ASSESSMENT

Once the piloting of the instrument was complete, the next step was to use it to assess HC within a larger sample of SMEs. This was carried out by means of an electronic (Internet) survey.

7.1 HUMAN CAPITAL ASSESSMENT SURVEY PARTICIPANTS

There are in the region of 39,890 medium sized enterprises in the UK private sector (Office for National Statistics, 2016). A representative sample would be 380 assuming a confidence level of 95% and 5% margin of error (Survey Monkey, op cit). With the 2.75% assumed click through rate, this would also mean despatching a survey to 13,818 potential respondents. In the context of this study, the Researcher judged this to be too large a number to contact.

This problem was resolved by using a panel of respondents supplied by CINT (2016). CINT is a member of the World Association for Social, Opinion and Market Research and has access to 30 million potential survey respondents worldwide. It operates according to the International Standard ISO 20252 which requires it to offer quality data sourced ethically.

The quality of data obtained through use of panels has been researched by the Online Quality Research Council, part of the Advertising Research Foundation. Their focus has been on consumer surveys, but their conclusion that 'online-survey panels can be used to measure precisely a wide range of consumer attitudes and sentiments' (Fulgoni, 2014 p. 6.) suggests that the use of such panels can generate an acceptable quality of data. Indeed data generated from panels is used in the 21st

Century by the American National Longitudinal Surveys of Labour Market Experience; the University of Michigan's Panel Study of Income Dynamics; The German Socio-Economic Panel Study; the British Household Panel Survey and the Swiss Household Panel (Andress, 2017).

However the use of panels is likely to generate sampling error (Cooper, 2000) because not all members of the population of SMEs in the UK and US are included in the panel. As such there is no chance of obtaining a truly random selection from the full population of SMES.

In order to participate in a CINT panel each respondent provides details of their personal characteristics (e.g. age, gender, role), size of enterprise in which they work and country of residence together with an agreement to complete surveys. Despite this reach, it was found that there were too few senior executives in SMEs (headcount 50 – 250) in the UK to provide a large enough sample for the required statistical analysis. Consequently the survey was extended to SMEs in the UK and the USA. The extension specifically to the USA was chosen on the advice of CINT because it was in this country where the most English – speaking potential respondents could be found.

There were 209 responses from SMEs.

The range of industries is depicted in Table 7.1 (a) below:

Other	30
Manufacturing	28
Consultancy	25
Construction	24
Administration	20
Financial	20
Engineering	18
Education	10
Information Technology	10
Legal	10
Healthcare	5
Retail	5
Hospitality	4
Total	209

Table 7.1 (a) Range of industries in the Executive survey

The range of industries represents 14 of the 21 classifications of the UK standard industrial classification (Prosser, 2007). Those not included are: Agriculture, Forestry and Fishing; Electricity Gas and Steam; Water Supply; Other Service Activities; Activities of Households and Activities of Extraterrestrial Organisations.

The roles of respondents are shown in Table 7.1 (b) below

Departmental/Team Manager	70
Senior Manager	53
Owner	52
Manager	26
Other	8
Total	209

Table 7.1 (b) Range of roles in the Executive survey

7.2 HUMAN CAPITAL ASSESSMENT SURVEY MATERIALS

The content of the survey sent to SMEs was as described in Section 6.4 above. Items in the survey may be found as Appendix 6

7.3 HUMAN CAPITAL ASSESSMENT SURVEY PROCEDURE

An electronic copy of the draft instrument was sent to Executives comprising the CINT panel. Surveys were despatched by CINT until the required number of respondents had been obtained. The number of responses requested was 200 in order to generate enough data to carry out exploratory and confirmatory factor analysis (Arrindell and Van der Ende, 1985; de Winter et al., 2009; MacCallum et al., 1999; Wolf et al., 2013). The number received was 211.

All respondents were asked to complete the same survey a second time on the same day. This was in order to enable a test – retest correlation to be carried out. 152 respondents carried out the second completion.

Responses were sent (electronically) directly to the Researcher's software, the Survey Analysis Package (Wills and Jenkins, 2017), and subsequently downloaded electronically to IBM SPSS Statistics (SPSS) for analysis.

7.4 HUMAN CAPITAL ASSESSMENT SURVEY RESULTS

This section presents the results from SMEs in the UK and USA. As the data came from two different samples, firstly, it was necessary to check that they contained consistent responses before examining the results. This was done by checking all the data to ensure they met the assumptions for parametric analysis. Then US – UK samples were compared using independent t- tests and an intraclass correlation.

7.4.1 CHECKING FOR INTER – COUNTRY CONSISTENCY

As explained in section 7.1, there were not enough executive respondents from medium sized enterprises in the CINT UK database. Consequently the responses from the executive survey came from two different countries, the USA (n = 118) and UK (n = 93) with an overall sample size of N = 211

To check for inter-country consistency, the first stage was to investigate the required assumptions about the data to assess whether or not it would be feasible to use parametric statistics. The assumptions made were that (1) the sample size was large enough (2) there were no missing data; (3) there were no outliers; (4) there was a continuous level of measurement; (5) the observations were independent from one another; (6) the data relating to each component approximated normality; (7) the variances were the same for all components.

As will be seen, the data met the assumptions required and consequently the two samples were compared using a series of independent t - tests and an intraclass correlation (ICC). The independent t – tests compared the mean scores of each of 10 components for the two different samples. (Workforce risks and financials were excluded because, based on an examination of US and UK due diligence and accounting procedures, both were judged to assess similar issues in both countries).

The ICC assessed the degree of correlation and agreement between the ratings of the two separate samples (Field, 2009).

7.4.1.1. Adequate sample size

The first requirement is that the sample obtained should be large enough. In the case of the t-test, taking an alpha level of .05 and power of .8 the recommended sample size was found to be 85 (Cohen, 1992 as cited in Field, 2009, p.58). The sample size N = 211 met this requirement.

In the case of the ICC, studies carried out to determine an appropriate sample size to ensure results are judged to be reliable are varied in their recommendations. (Walter et al., 1998; Bonnett, 2002; Zou, 2012). The Researcher decided to use Zou's recommendation as this built on previous studies. With an alpha level of .05 and power of .8 (Cohen, op. cit.) the recommended sample size was 162. The sample size N = 211 met this requirement.

7.4.1.2 Identification of missing values

Missing values are common to survey responses and can affect the resulting analysis (Acock, 2005; Pallant 2010). Consequently they cannot be ignored.

The 63 variables (that is the items making up the 10 components, excluding demographic data workforce risks and financial data) were checked using SPSS 24 / analyze / descriptive statistics / explore. Missing values were identified using stem and leaf plots in SPSS 24 / analyze / descriptive statistics / explore. 101 missing values were identified out of the total of 13,293 potential responses (63 items x 211 responses).

According to Schafer and Graham (2002) and Acock (2005) there are three common ways of resolving the missing values problem. The first is to delete those respondents who submitted missing data. The second is to insert the average of each variable's scores (the mean substitution approach). The third is to calculate plausible values. There is a fourth option which is to enable SPSS to ignore the cell when carrying out the analysis. This option is termed 'no recorded value' (Field, 2009; Brace et al, 2009). The Researcher was reluctant to delete respondents or use the 'no recorded value option' because it would reduce the available data. The plausible values option or the mean substitution were then considered. As there were relatively few missing values (less than 1%), and based on the recommendations by Downey and King (1998), the Researcher decided to use the mean substitution option.

In the case of the annual revenues claimed by respondents, 63 % were not divulged, presumably because they were not to hand or because they were unwilling to provide the information. (For example one response was 'mind your own business'). 79 responses were available for subsequent correlation with HC / OC / RC data.

7.4.1. 3 Identification of outliers

Next the 63 variables were checked for outliers. The results are highly sensitive to the presence of outliers and so they cannot be ignored (Pallant 2010). The data from each of the components was examined using SPSS 24 / analyse / descriptive statistics / explore. Using this approach, 4 participants were identified as generating outliers. On closer examination it was found that the item ratings from these 4 were continually 0 or 1 indicating they judged the issues described as irrelevant or unacceptable. As these respondents'

scores were likely to affect the statistical analysis the Researcher decided to exclude them from subsequent analyses. This resulted in 207 responses.

7.4.1. 4 A continuous level of measurement

The level of measurement was based on the Likert scale of 1-5. As outlined previously in sub section 6.4.5.7 (Determining the level of measurement), there has been much debate concerning the nature of a Likert scale. Some argue that the scale is ordinal in nature (e.g. Jamieson, 2004). Others maintain it can exhibit interval characteristics (e.g. Lubke and Muthen, 2004). The 10 components comprised between 4 and 7 items all of which were rated using the 1-5 Likert – type scale. The combination of the individual item scores created true Likert scales which theoretically ranged from 4 (4 items with a rating of 1) to 35 (7 items with a rating of 5). As such the Likert scales were judged to have a continuous level of measurement.

7.4.1.5 Independence of observations

The responses to the survey were made by either a UK based executive or a US based executive. As such they were not made by an executive based in both countries and were judged, therefore, to be independent.

7.4.1. 6 Data normality

As with the investor survey, the data was checked for normality. The data for each of the 10 components should approximate a normal distribution. In the case of the executive survey, skewness ranged from -0.962 to +0.269. These levels of skewness are acceptable for the purposes of parametric statistics where levels of +1 to -1 have not been found to significantly distort results (Muthén and Kaplan, 1985). However, based on the shape of the

distribution, the Researcher decided to transform the data using reversal and \log^{10} (Tabachnick and Fidell, pp. 87 - 88) and the skewness resulting after the transformation was improved, ranging from -.712 to .118.

The range of skewness before and after is demonstrated in Tables 7.4.4 (a) and (b).

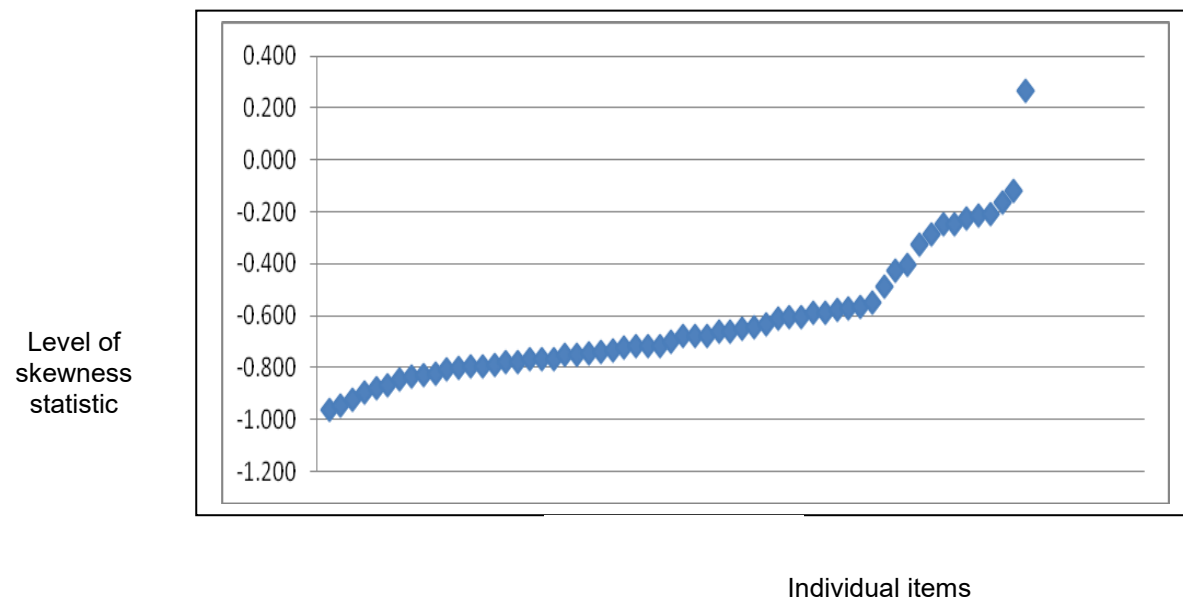


Figure 7.4.4 (a): The range of skewness before \log^{10} transformation

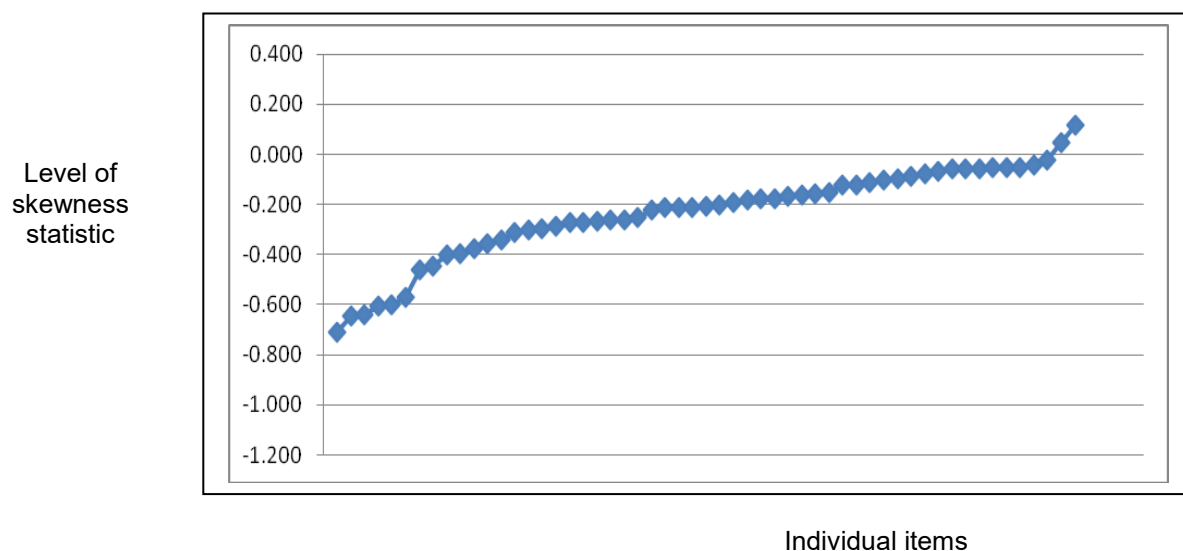


Figure 7.4.4 (b): The range of skewness after \log^{10} transformation

This transformed range was judged by the Researcher to be acceptable for subsequent parametric statistical analysis.

7.4.1.7 Variances should be equal / homogeneous

The data were assessed for equality of variance as part of the t-test using SPSS 24 / analyse / compare means / independent samples t – test. One of the outputs of this test is Levene's test for equality of variances. In all cases Levene's test rejected the null hypothesis that there was no equality of variance (Levene's $p > 0.05$). The alternate hypothesis that all variances were similar was accepted.

After it was found that the data had met the required assumptions, the Researcher carried out the independent t-tests and correlational analysis as reported below.

7.4.1.8 Independent samples t - tests

Independent samples t – tests were carried out for each of the 10 pairs of components. The results of the tests are summarised in table 7.4.1.8 and reported over page

In summary there were no pairs of components with statistically different means.

7.4.1.8.1 Strategic intent

There was no significant difference in scores for the US (M = 15.5, SD = 3.1) and the UK (M = 14.7, SD = 3.2); $t(200) = 1.85, p = .065$.

7.4.1.8.2 External relationships

There was no significant difference in scores for the US (M = 22.6, SD = 5.1) and the UK (M = 22.1, SD = 4.9); $t(200) = 0.69, p = 0.49$.

7.4.1.8.3 Workforce integration

There was no significant difference in scores for the US (M = 27.5, SD = 5.2) and the UK (M = 26.9, SD = 5.4); $t(200) = 0.88, p = 0.38$.

7.4.1.8.4 Workforce composition

There was no significant difference in scores for the US (M = 15.3, SD = 3.1) and the UK (M = 14.9, SD = 3.1); $t(200) = 0.93, p = 0.35$.

7.4.1.8.5 Workforce know how

There was no significant difference in scores for the US (M = 19.8, SD = 3.4) and the UK (M = 19.1, SD = 4.1); $t(200) = 1.4, p = 0.18$.

7.4.1.8.6 Workforce experience

There was no significant difference in scores for the US (M = 13.5, SD = 3.5) and the UK (M = 13.0, SD = 3.7); $t(200) = 1.0, p = 0.30$.

7.4.1.8.7 Workforce relationships

There was no significant difference in scores for the US (M = 23.7, SD = 4.1) and the UK (M = 23.6, SD = 4.3); $t(200) = 2.2, p = 0.29$.

7.4.1.8.8 Workforce stability

There was no significant difference in scores for the US (M = 30.6, SD = 6.0) and the UK (M = 29.8, SD = 6.6); $t(200) = 2.5, p = 0.16$.

7.4.1.8.9 Workforce impetus

There was no significant difference in scores for the US (M = 18.4, SD = 7.1) and the UK (M = 17.9, SD = 6.5); $t(200) = .49, p = 0.61$.

7.4.1.8.10 Workforce adaptability

There was no significant difference in scores for the US (M = 26.1, SD = 5.5) and the UK (M = 25.5, SD = 5.3); $t(200) = 1.4, p = 0.15$.

Country	Mean	Standard deviation
1. Strategic intent		
US	15.5	3.1
UK	14.7	3.2
2. External relationships		
US	22.6	5.1
UK	22.1	4.9
3. Workforce integration		
US	27.5	5.2
UK	26.9	5.4
4. Workforce composition		
US	15.3	3.1
UK	14.9	3.1
5. Workforce know-how		
US	19.8	3.4
UK	19.1	4.1
6. Workforce experience		
US	13.5	3.5
UK	13.0	3.7
7. Workforce relationships		
US	23.7	4.1
UK	23.6	4.3
8. Workforce stability		
US	30.6	6.0
UK	29.8	6.6
9. Workforce impetus		
US	18.4	7.1
UK	17.9	6.5
10. Workforce adaptability		
US	26.1	5.5
UK	25.5	5.3

**Table 7.4.1.8 Summary of
US and UK statistics**

Based on the results of the independent t-tests, the Researcher judged that the data from the US and the UK were similar enough to be combined. This was further tested with an intraclass correlation.

7.4.1.9 Intraclass correlation

The data were subjected to an intraclass correlation (ICC) to assess the level of consistency of ratings. A high degree of consistency was found. The average measure ICC was .970 with a 95% confidence level from .964 to .974 ($n=207$, $F=33.774$, $p < .001$). This result demonstrates that respondents from both countries were like-minded in their understanding of, and views on, the items used to rate the quality of their HC / OC / RC.

Based on the independent t-test results, and intraclass correlation, the Researcher judged the data from the two samples were similar enough to be combined.

7.4.2 CHECKING FOR MEDIUM SIZED ENTERPRISES

The CINT system was unable specifically to recruit SMEs with headcounts of between 50 and 250. This was because it is an international organisation using differing definitions of enterprise categories. Consequently invitations were despatched to SMEs with an introduction specifying a preference for enterprises with the 50 – 250 headcount. Before combining the US and UK data, a check was made to identify any respondents that were outside of the preferred headcount range. There were 5 found and these were omitted, resulting in 202 responses.

7.4.3 HUMAN CAPITAL ASSESSMENT SURVEY ITEM SCORES

The full range of scores from this survey may be found as appendix 6b. In this sub-section the top five scores which represent those aspects of HC or associate intangibles judged by SME executives to be well developed are listed as table 7.4.6.

A reminder of the ratings used by executives and associated scoring is

5 = leading edge; 4 = definitely capable; 3 = satisfactory; 2 = definitely poor

1 = unacceptable; 0 = of no relevance in this context

The mean executive ratings were multiplied by the investor interest weightings for each item in order to calculate an overall score for each item / component.

	n	Minimum	Maximum	Mean	Investor interest weighting	Mean x weighting
20d. Documenting business processes and practices to improve consistency of operations between units.	202	1.00	5.00	3.97	3.76	14.93
20e. Ensuring main business processes run smoothly between different organisational units	202	1.00	5.00	3.96	3.76	14.89
27a. Effectively capturing and sharing knowledge	202	2.00	5.00	3.87	3.80	14.70
27d. Ensuring ease of communication to the senior management team from members of your workforce	202	1.00	5.00	3.92	3.74	14.67
20c. Agreeing formally who should do what, how well and when.	202	1.00	5.00	3.93	3.72	14.63

Table 7.4.3: The top 5 items representing well developed HC / OC/ RC in 202 SMEs

The full Executive survey results were used as comparison data and to evaluate the attributes of the instrument: reliability, validity; interpretability and generalisability. This evaluation is described in the next Section 8.

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8. EVALUATING INSTRUMENT ATTRIBUTES

In this Section the instrument's attributes (reliability, validity, interpretability and generalisability) are defined and evaluated.

According to research carried out by Mokkink et al. (2010, a; b and c) there has been little or no agreement among researchers concerning the taxonomy, terminology, and definitions of concepts used to establish the attributes of assessment instruments. Their study had the objective of achieving a consistent approach to measuring health-related and patient-reported outcomes.

Although different in focus, the design and development of the current instrument has similar objectives, these being to establish a meaningful, consistent and comprehensive approach to ensuring a valid and reliable instrument. Consequently the approach developed by Mokkink et al. (ibid) has been followed.

Mokkink et al. established an international Delphi study comprising 43 experts from the fields of clinical medicine, epidemiology, psychology and statistics. As a result of the 4 rounds and associated debates, their conclusions on the terms and definitions of measurement properties are outlined below. Their definitions (ibid. p. 743) have been edited to reflect the difference in focus.

8.1 ATTRIBUTE DEFINITIONS

8.1.1 RELIABILITY

Reliability is defined as the proportion of total variance which is due to 'true' differences.

8.1.1.1 Instrument reliability

This is defined as the extent to which scores for enterprises (that have not changed), are the same for repeated measurement. Such measurements include test - retest; and inter – rater reliability.

8.1.1.2 Internal consistency

This was defined as the degree of interrelatedness among items.

8.1.1.3 Measurement error

This was defined as the systematic and random error of a score which cannot be attributed to true changes in the construct being measured.

8.1.2 VALIDITY

Validity was defined as the degree to which the instrument measures the constructs (Human Capital with Organisational Capital and Relationship Capital) it intends to measure.

8.1.2.1 Content validity

Content validity is defined as the degree to which the items chosen are an adequate reflection of the construct(s) to be assessed.

8.1.2.2 Face validity

Face validity is similar to content validity, but reflects whether the items look to be an adequate reflection of the constructs being assessed.

8.1.2.3 Structural validity

Structural validity is the degree to which the scores of the instrument are an adequate reflection of the dimensionality of the construct(s) being assessed.

8.1.2.4 Criterion validity

Criterion validity is the degree to which the scores of the instrument are an adequate reflection of a 'gold standard'.

8.1.2.5 Hypothesis testing

Hypothesis testing covers issues such as differences between groups or correlations between the scores on the instrument and other instruments.

8.1.2.6 Cross cultural validity

Cross cultural validity was seen as relevant if items were to be translated or adapted for use in different cultures. The instrument being developed is for use within the UK alone and, as such this criterion is not relevant.

8.1.3 INTERPRETABILITY

Interpretability is the degree to which a meaning can be assigned to the instrument's scores. This aspect is of relevance to the current study. If an investor is unable to

interpret the results in order to inform an investment decision, then the instrument would be of little use.

8.1.4 RESPONSIVENESS

(Mokkink et al, op cit.) saw responsiveness - the ability to detect change over time - as an important element of instrument quality. In the context of human health this would indeed be definitely relevant. In the context of the current study, where a single snapshot is envisaged in order to provide an assessment of an enterprise's HC before investment, the criterion is not relevant. However, if used by a management team on an annual basis to measure changes in the quality of their HC, this criterion would be an important one. As the methodology is cross sectional, levels of responsiveness have not been determined as part of the current study.

8.1.5 GENERALISABILITY

Generalisability is defined as the range of populations in which the instrument can be used. In the context of the current study, a population may be seen as the SMEs operating in a given industry sector. An instrument with high generalisability would be capable of being used in a wide range of industrial sectors.

The following sections evaluate the attributes of the instrument, based on the above definitions

8.2 EVALUATION OF RELIABILITY

In this sub-section, an evaluation of instrument reliability is reported.

8.2.1 INTER – RATER RELIABILITY

The data generated during the Business School case study demonstrated a high level of reliability. The average measure Intraclass Correlation was .806 with a 95% confidence interval from .701 to .890. ($n = 28$, $F(162,972) = 5.775$, $p < .001$).

8.2.2 TEST – RETEST RELIABILITY

Using a Pearson correlation, a high level of reliability was found between the first assessment and second assessment carried out on the same day during the Executive survey ($n=152$, $r = .879$, $p < .01$).

8.2.3 INTERNAL CONSISTENCY

An assessment of internal consistency was carried out using Cronbach's alpha (Cronbach, 1951; Peterson, 1994). The factors identified during factor analysis (reported later in sections 8.4 and 8.5) are reported below.

- (1) Strategic agility component consisted of 6 items ($\alpha = .796$);
- (2) External Relations component consisted of 6 items ($\alpha = .864$);
- (3) Workforce Integration component consisted of 6 items ($\alpha = .879$);
- (4) Workforce Investments component was not included because respondents supplied exclusively numerical data.
- (5) Workforce Composition component consisted of 3 items ($\alpha = .742$);
- (6) Workforce Know-How component consisted of 5 items ($\alpha = .868$);

- (7) The Workforce Relationships component consisted of 6 items ($\alpha = .871$);
- (8) Workforce Experience component consisted of 4 items ($\alpha = .875$);
- (9) The Workforce Stability component consisted of 6 items ($\alpha = .906$)
- (10) The Workforce Adaptability component consisted of 6 items ($\alpha = .874$)
- (11) The Workforce Impetus component consisted of 6 items ($\alpha = .878$);
- (12) The Workforce Risks component was not included in the executive survey due to a restriction on number of items allowed. The items covering workforce risks are those already used by investors during the execution of due diligence.

In order to help determine the correct procedure for carrying out the exploratory factor analysis an alpha score for all items was calculated. Cronbach's alpha for all 54 items: ($\alpha = .933$) which indicates that individual factors were likely to be correlated. This is to be expected because individual people management practices and associated outcomes are likely to be co-ordinated to meet the overall objective of attraction, retention and motivation of employees (Fabi et al, 2009).

8.2.4 MEASUREMENT ERROR

According to Mokkink et al. (op cit) there are four reasons that measurement error would occur. These are the subjectivity of the assessor; the lack of comprehensiveness of the factors; situational error and statistical error. These are discussed in this sub – section.

8.2.4.1 The subjectivity of the assessor

In the case of the instrument despatched to SMEs electronically, the subjectivity of the respondent was not taken into account. This was because demanding a response based

on consensus from a management team was likely to be rejected by CINT and, if carried out, would result in very few responses.

In the case of the finalised instrument, this potential error will be minimised in two ways. Assessments should be made by a full Board of Directors or Senior Management Team by consensus. Secondly the assessments made should be supported by documentation (e.g. minutes of meetings; formal policy documents) and / or formally collected statistics (e.g. employee turnover figures; average number of years' service).

Despite these requirements, assessor subjectivity is likely to be influenced by psychological bias (Gilovich et al., 2002; Rosenzweig, 2007; Milkman et al. 2009)

8.2.4.2 Fully comprehensive range of factors

If the factors do not reflect a fully comprehensive account of HC then the assessment would be flawed. The theoretical factors are based on an extensive literature search, confirmation by subject matter experts and confirmation by executives from SMEs.

8.2.4.3 Situational error

Situational error would occur if the data provided by Boards of Directors or Senior Management Teams are judged to be misleading. This error would be minimised because all 'material' data (i.e. data which would significantly affect a decision) would be based on the content of documents within a business (policies, standards, management meeting minutes). During due diligence, there is legal requirement to divulge material issues.

8.2.4.4 Statistical error

Statistical error was minimised by using a scale that generated data which could be analysed using parametric statistics; identifying and substituting missing data; identifying and deleting outliers; identifying and transforming any data that was not normally distributed.

8.3 ASSESSMENT OF CONTENT, FACE AND CRITERION VALIDITY

This section reviews the assessment of content, face and criterion validity. Other aspects of validity are assessed in later sections.

8.3.1 CONTENT AND FACE VALIDITY

Content and face validity was established during the development of the instrument, firstly by identifying components of relevance during the literature review; then testing associated items / issues on subject matter experts and investors; next discussing them with executives during the pilot sessions; lastly exposing them to 211 executives in the form of an electronic survey.

8.3.2 CRITERION VALIDITY

The Researcher judged it to be impractical to establish criterion validity by asking those completing the instrument also to complete a 'gold standard' instrument aimed at assessing similar criteria. This was because the platform used to generate responses to the questionnaire (CINT, 2016) restricted the number of items making up the questionnaire. Secondly it was unlikely that SME executives would have been willing to invest time in completing two similar, but different, instruments sequentially in addition to repeating the completion of the instrument under development.

In order to demonstrate criterion validity, therefore, the proposed components have been compared with those contained within three instruments the Researcher judged to be of 'gold standard'. Two of the instruments focus on assessing HC and other intangibles primarily in large enterprises (but are also used in SMEs). The third has been used in large, medium and small organisations. All three are described below.

The first choice was the European Foundation for Quality Management self-assessment instrument (EFQM, 2017) which is marketed in the UK by the British Quality Foundation (BQF, 2017). It was chosen based on the original research into business excellence carried out by 14 large European organizations with academic input (1988); its regular reviews and updates and the fact that it has been used by UK SMEs.

The second choice was the Human Capital Monitor (Mayo, 2001). This was chosen because it is influenced by well known writers on HC / IC such as Fitz-Enz; Sveiby; Flamholtz; Edvinsson; Stewart and the Roos brothers (ops cit.) and it was developed in the context of support by Mayo's colleagues at the London Business School (Mayo, 2001, acknowledgements). Lastly it was recognised by Ulrich (op cit) as 'synthesizing HC theory, research and practices' and described by Gratton (op cit) as 'bringing analysis and debate into the debate about the measurement and reporting of HC'.

The third choice was the Investors in People (IiP) framework (2015). This was chosen because of its updated design which was influenced by both client organisations and academics; its longevity within the UK - it has been in existence for 25 years and used by 14,000 organisations of which 8629 are SMEs (Asif, 2017); its international recognition; its application in large, medium and small organizations and its assertion that it reflects the latest workplace trends, essential skills and structures (Investors in People, 2017).

When comparing the components contained within the instrument under development, both the content of the three comparator instruments plus associated documentation was taken into consideration. For example the IiP instrument does not specifically include the number of years experience in relevant roles as an element but the IiP website (2017)

makes it clear that the factors used within the liP instrument aim to increase employee retention (Investor in People, 2014).

Also the Researcher found that specific content within the comparator instruments was not necessarily subsumed under the same component. For example Mayo (op cit) includes 'retention' as a separate component. The instrument under development includes 'retention' under the component 'stability'.

An example of one component comparison may be seen as figure 8.3.2 and the complete comparison may be found as appendix 7, criterion validity. In summary, the analysis confirms that all of the factors used in the current instrument may be found in at least two of these three 'gold standard' instruments.

	EFQM Self Assessment	Human Capital Monitor	Investor in People
Factor 10, Adaptability. Willingness and ability to learn new competences in order to perform under first time or difficult conditions	<ul style="list-style-type: none"> * The organisation identifies incremental and breakthrough improvements * The organisation stimulates creativity and innovation * Leaders participate in improvement activities * People are enabled to participate in improvement activities * Leaders use innovative methods to improve the way of working 	<ul style="list-style-type: none"> * New approaches to markets * New approaches to organization * Acceptance of and readiness for change * Dedication to continuous improvement * Willingness to experiment * Potential to grow * Eagerness to learn 	<ul style="list-style-type: none"> * There is a focus on continuous improvement * The culture encourages innovation * People use internal and external resources to come up with new ideas. * Change is viewed as 'business as usual'

Table 8.3.2 Example Comparison of instrument factors with those in three other 'gold standard' instruments.

8.4 EVALUATION OF STRUCTURAL VALIDITY USING EXPLORATORY FACTOR ANALYSIS

In this analysis Workforce Risks and Workforce Costs were excluded for reasons outlined in the previous Section. In the first case, the number of items allowed by the CINT system was restricted. In the second case the Researcher judged it would not be necessary to explore / confirm a factor entitled costs as this is a criterion used by all investors (Mason and Stark, 2004).

Exploratory factor analysis (Tabachnick and Fidell, 2007; Thompson, 2004) was carried out using IBM SPSS version 24 in order to see how accurately the data collected during the Executive Survey reflected the theoretical components identified during the literature review. This sub-section discusses the required sample size; the criteria used to determine factor extraction; the selection of the rotational method and the interpretation of the results.

8.4.1 THE SAMPLE SIZE

The academic literature reflects a wide range of opinion as to the necessary sample size required to perform a defensible factor analysis (Hogarty et al., 2005). The smallest recommendation found by the Researcher is that of Sapnas and Zeller (2002) who suggest that a sample as low as 50 may be adequate. The most up to date recommendations range from 100 = poor; 200 = fair; 300 = good (Comrey and Lee, 2016). The recommendation of 300 supports that of Tabachnick and Fidell, (op cit).

However, a decision on the most appropriate sample size should take into account the size of communalities, the number of items per factor (MacCallum et al., 1999);

the sample to variable ratio (Hogarty et al, op. cit.) and the associated correlation matrix (Henson and Roberts, 2006). Taking these into account, together with the cost of sourcing willing participants, it was decided to start the analysis with a sample size of 200. The initial analysis based on $n = 202$; generated initial communalities of 1.00 and, after extraction, between .521 and .821; a range of 4 to 7 items per factor and 3.3 to 1 sample to variable ratio.

The Kaiser – Meyer – Olkin measure for sampling adequacy = .929 and the Barlett Test of Sphericity $p < .01$.

These results indicated that the sample of 202 was suitable for factor analysis.

8.4.2 CRITERIA USED TO DETERMINE FACTOR EXTRACTION

The criteria used to determine factor extraction was based on the assumption that the results would be used only to carry out a confirmatory factor analysis and, as such, need not be extrapolated beyond the existing sample (Field, 2013). Based on this criterion, Principal Component Analysis (PCA) was chosen. PCA was the preferred choice in half of the 1700 studies reviewed by Osborne and Costello (2009).

The selection of factors generated by PCA was refined by use of eigenvalues and a scree plot (Cattell, 1966). Any factor with an eigenvalues greater than 1 was retained (Kaiser, 1960). Based on these results, the option of a parallel analysis was judged not to be necessary.

8.4.3 SELECTION OF ROTATIONAL METHOD

There was a choice of two types of rotation (Field, op cit). Orthogonal rotation would be used when the theoretical factors are judged to be uncorrelated. Oblique rotation would be used when the factors are likely to be correlated. Based on previous results of Cronbach's alpha analysis (see section 8.2.3) it was judged that the factors were likely to be correlated and consequently the oblique rotation was used. There are two methods of oblique rotation: direct oblimin and promax. Based on Field's recommendation (ibid. p.644) direct oblimin was selected.

8.4.4 INTERPRETATION OF THE RESULTS

The output based on the above decisions consisted of eigenvalues; a scree plot and a component correlation matrix. The screen plot is shown as figure 8.4.4. The arrow superimposed identifies where the scree begins to change shape and also indicates the likelihood of up to 9 factors.

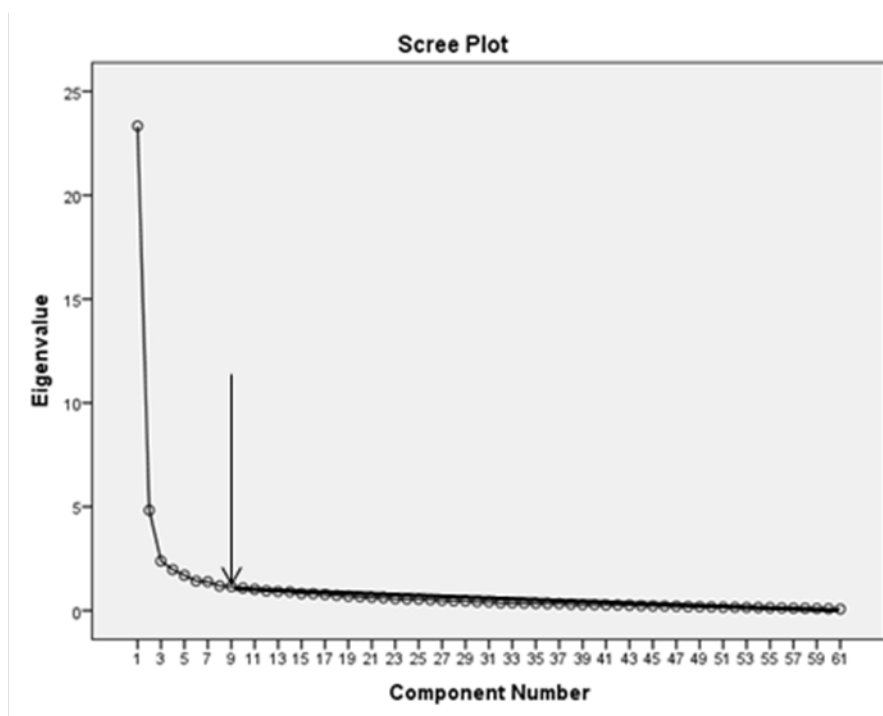


Figure 8.4.4 Exploratory Factor Analysis Scree plot

This range of 9 likely factors was consistent with most of the theoretical factors, but the original 'commitment' factor was divided into two, comprising 'experience' (years in any given role) and 'stability' (lack of disruption such as grievances and work to rule).

The associated Structure Matrix demonstrating the likelihood of 9 factors may be seen as Appendix 9. The Pattern Matrix indicated a similar range of factors.

8.4.5 FACTOR CORRELATION MATRIX

The factor correlation matrix is shown as table 8.4.5 below

Factor Correlation Matrix

Component	1	2	3	4	5	6	7	8	9
1	1.000	-.113	.276	.315	.358	.451	.416	.034	-.230
2	-.113	1.000	-.272	-.338	-.326	-.203	-.210	-.122	.116
3	.276	-.272	1.000	.223	.276	.337	.241	.022	-.170
4	.315	-.338	.223	1.000	.306	.256	.287	.057	-.191
5	.358	-.326	.276	.306	1.000	.296	.334	.112	-.197
6	.451	-.203	.337	.256	.296	1.000	.351	.062	-.196
7	.416	-.210	.241	.287	.334	.351	1.000	.067	-.183
8	.034	-.122	.022	.057	.112	.062	.067	1.000	-.023
9	-.230	.116	-.170	-.191	-.197	-.196	-.183	-.023	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Table 8.4.5 Factor Correlation Matrix.

It can be seen that the component correlations range from -.272 to +.451. The correlations were to be expected and reflect the interrelationships of people management practices identified in people management strategies described by Delery and Doty (op. cit.); Fabi et al (op cit); Guest (op. cit.); Richardson and Thompson (op. cit.)

The 9 factors and correlations were next tested using Confirmatory Factor Analysis.

8.5 EVALUATION OF STRUCTURAL VALIDITY USING CONFIRMATORY FACTOR ANALYSIS

Confirmatory Factor Analysis (CFA) was carried out using AMOS version 24. In order to fit the output from the EFA into the AMOS work area, the Researcher decided to restrict the number of items per factor to no more than 5. Where there were more than 5 items from the EFA output, those with the 5 highest loadings were selected. These are outlined below.

8.5.1 ITEMS PER FACTOR

The resulting factors and number of items were:

1. Strategic Agility was not included because this component is based on the original work of Miles and Snow (op cit) which had already been subjected to factor analysis.
2. External Relationships comprising 5 items
3. Workforce Integration comprising 5 items
4. Workforce Investment was not included because the items were all numerical in nature and based on an existing widely used construct
5. Workforce Composition comprising 4 items
6. Workforce Know How comprising 5 items
7. Workforce Relationships comprising 5 items
8. Workforce Experience comprising 4 items
9. Workforce Stability comprising 5 items
10. Workforce Adaptability comprising 5 items
11. Workforce Impetus comprising 5 items
12. Workforce risks was not included because the items are all currently used during the execution of due diligence.

The 43 items and 9 proposed factors were input into AMOS and model fit estimates were calculated. The results of the analysis are shown in figure 8.5

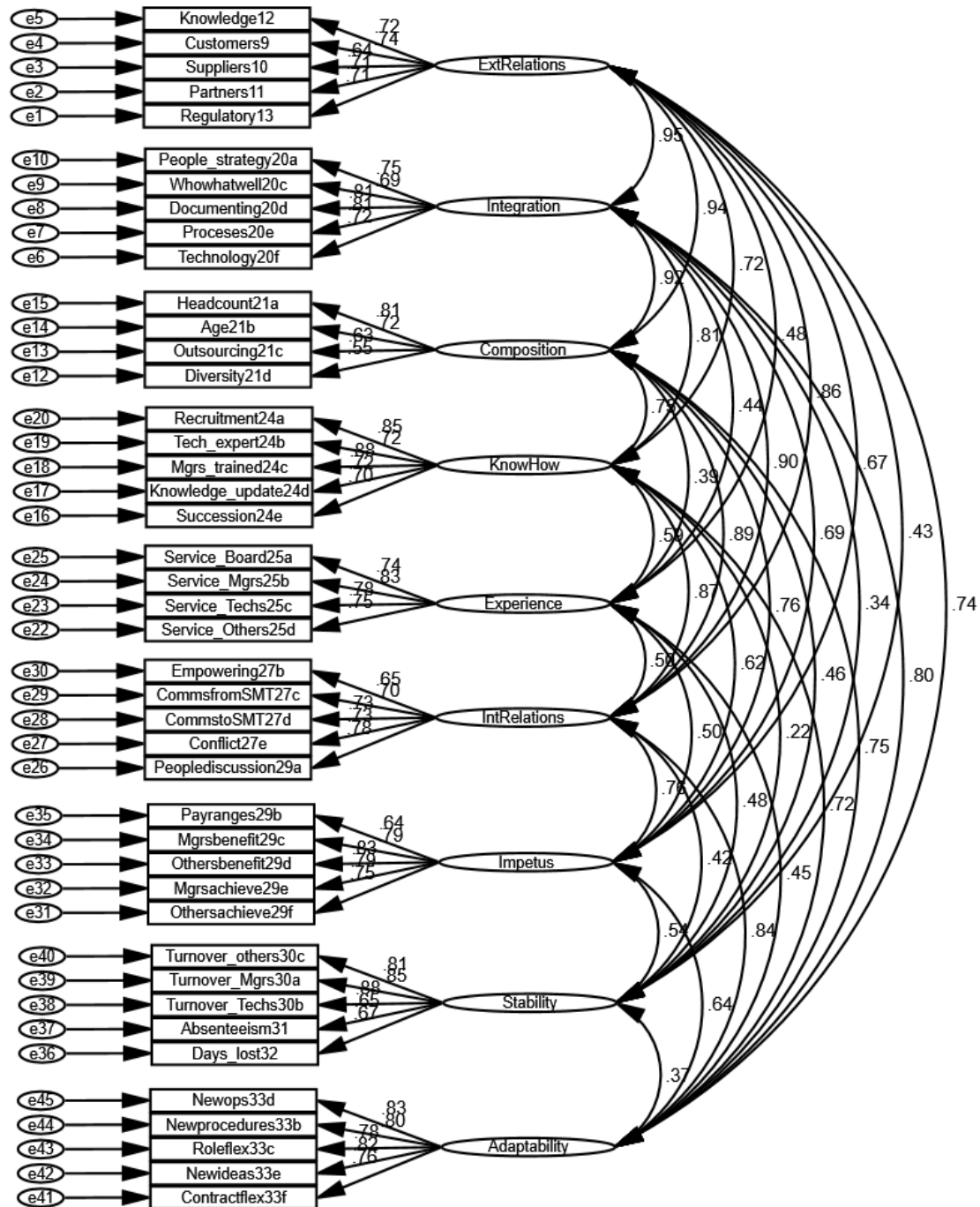


Figure 8.5: Results of the Confirmatory Factor Analysis

8.5.2 MODEL FIT

The output from the CFA was next checked for model fit. In order to identify the correct criteria to assess model fit the work of Jackson et al. (2009) has been used. They reviewed CFA reports retrieved from the PsychINFO database 1998 – 2006, $n = 194$. They found the most common model fit indices were Chi Square (χ^2 used by 82.2%); Degrees of Freedom (df used by 89.2%); the comparative fit index (CFI used by 78.4%) the Root Mean Square Error of Approximation (RMSEA used by 64.9%); and Tucker – Lewis Index (TLI used by 46.4%). The fit indices for this study's data are outlined below and compared with index levels identified by Hooper, Coughlin and Mullen (2008) who reviewed the thinking and research on fit indices.

8.5.2.1 Chi Square and degrees of freedom result with ratio

$$\chi^2 = 1867.30, \quad df = 1044,$$

The ratio of chi square and degrees of freedom is another fit index in addition to those identified by Jackson et al. (op.cit.) and generated by AMOS.

$$\chi^2 / df = 1.79.$$

Although used by only 21.6% of the comparison sample, it is included here for completeness. According to Hooper et al (op cit) here is no consensus on the required ratio but a typical range this index is 2 to 3 (Kine, 2005; Tabachnik and Fidell, 2007). The result for this study falls outside the typical range by .21.

8.5.2.2 Comparative Fit Index

CFI = .90 Results for this Index range from 0.0 to 1.0 with the preferred value being as close as possible to 1.0 and preferably in excess of .90 (Hooper et al., op cit) and so the result for this study is just within the recommended range.

8.5.2.3 Root Mean Square Error of Approximation

RMSEA = .06

A well fitting model has a range of between 0.0 and .08 (Hooper et al., op cit) or between .05 and 1.00 (Steiger, 2007). The result for this study meets this requirement.

8.5.2.4 Tucker Lewis Index

TLI = .89

Results for this Index should be greater than .95 (Sharma et al., 2005). As such the result for this study is .06 outside of the recommended cut off.

8.5.2.5 Summary of results

A summary of the fit indices is shown as figure 8.5.2. below.

	χ^2	df	χ^2/df	CFI	RMSEA	TLI
Standard			2.0 - 3.0	>.90	.05 - 1.0	>.95
Fit	1867.30	1044.00	1.79	.90	.06	.89

Table 8.5.2 (a): Summary of model fit results

8.5.2.6 Factor correlations

The factor correlations were greater than those generated during the Exploratory Factor Analysis, ranging from -.436 to .445 but still reflect the need to integrate people management practices as described by Delery and Dotty (op. cit.); Guest et al. (op cit). The correlations are shown in table 8.5.2 (b).

Factor correlation matrix									
Component	1	2	3	4	5	6	7	8	9
1	1.000	.096	.211	-.321	-.340	-.436	-.172	-.267	-.330
2	.096	1.000	.266	-.256	-.361	-.254	-.276	.040	-.224
3	.211	.266	1.000	-.204	-.239	-.229	-.123	-.106	-.198
4	-.321	-.256	-.204	1.000	.384	.451	.257	.222	.334
5	-.340	-.361	-.239	.384	1.000	.445	.234	.140	.344
6	-.436	-.254	-.229	.451	.445	1.000	.237	.261	.384
7	-.172	-.276	-.123	.257	.234	.237	1.000	.038	.168
8	-.267	.040	-.106	.222	.140	.261	.038	1.000	.216
9	-.330	-.224	-.198	.334	.344	.384	.168	.216	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Table 8.5.2 (b): Factor Correlations

8.5.3 CONCLUSION

The use of such indices is generally considered to be a 'rule of thumb' as opposed to an inflexible requirement (Hooper et al., op cit). A rejection of a model due to inflexible application of the 'rule of thumb' guidelines runs the risk of rejecting the model when it is generally acceptable (a Type 1 error). With this in mind the Researcher judges that the model shown as figure 8.5 above can be accepted as a true reflection of the factor structure underlying the data generated during the executive survey.

8.6 HYPOTHESIS TESTING

As part of the overall research question, as well as hypothesizing that a reliable and valid instrument is achievable, it was hypothesized that higher levels of HC within SMEs would have a low correlation with variations in enterprise revenue; that higher levels of HC within SMEs would correlate with strategic agility and that higher levels of HC, as evidenced by the instrument, would correlate with investor intentions. The outcomes of these latter three hypotheses are reported below.

8.6.1 CORRELATION BETWEEN HUMAN CAPITAL AND VARIATION IN ENTERPRISE REVENUES

The relationship between the 9 factors and variation in enterprise revenues over the three year period 2012-13 to 2014 -15 was investigated using a regression analysis. The results of the regression showed no statistically significant relationships between the 9 factors (predictors) and revenue increases (outcomes): $R^2 = .185$, $F(10,67) = 1.52$, $p > .05$.

External Relationships $n = 79$, $\beta = .21$, $p > .05$;

Workforce Integration $n = 79$, $\beta = -.43$, $p > .05$;

Workforce Composition $n = 79$, $\beta = .178$, $p > .05$;

Workforce Know How $n = 79$, $\beta = .308$, $p > .05$;

Workforce Experience $n = 79$, $\beta = -.215$, $p > .05$;

Workforce Relationships $n = 79$, $\beta = -.096$, $p > .05$;

Workforce Impetus $n = 79$, $\beta = .191$, $p > .05$;

Workforce Stability $n = 79$, $\beta = -.28$, $p > .05$;

Workforce Adaptability $n = 79$, $\beta = -.09$, $p > .05$.

8.6.2 CORRELATION BETWEEN HUMAN CAPITAL AND STRATEGIC AGILITY

The relationship between the overall HC score and strategic agility was investigated. Strategic agility was defined as the number and extent of strategies used by an enterprise as evidenced by the responses to the instrument. Respondents could indicate how many of six different strategies they use and the extent to which they used each strategy. A Pearson product moment correlation indicated a strong correlation between the two, $n = 206$, $r = .686$, $p < .001$.

8.7 ASSESSMENT OF GENERALISABILITY

The respondents from the executive survey and MBA cadre were asked to identify within which industry their enterprise operated. Correctly completed questionnaires, were received from executives with experience in 14 of the 21 industries specified by the UK standard industrial classification (Prosser, 2007). They covered mining and quarrying (oil and gas); manufacturing; construction, retail trade; transportation; accommodation and food services; information and communication; financial and insurance services; real estate activities; professional, scientific and technical activities; administrative and support services; education; human health and social work; arts, entertainment and recreation.

The industries that are missing were agriculture, forestry and fishing; electricity, gas, steam and air conditioning supply; water supply, sewerage etc; public administration; 'other' service activities; activities of households as employers and activities of extraterrestrial organisations.

It was concluded that the instrument was generalisable to 14 industrial sectors and is likely to be usable within the remaining 7 industrial sectors.

8.8 ASSESSMENT OF INTERPRETABILITY

The results from three of the completed pilot exercises were sent in the form of reports to the three sets of participants. Feedback from the participants indicated that, with suggested edits, they could understand the report and identify their respective strengths and opportunities for improvement.

9. DISCUSSION AND CONCLUSIONS

This section takes an overview of the findings and discusses whether or not they answer the research question and hypotheses; how they fit in with previous research; whether or not they can be applied in practice; the delimitations and limitations of the study. Lastly personal reflections are offered and suggestions for follow up studies are proposed.

9.1 A REMINDER OF THE RESEARCH QUESTION

The research question was: how much can a valid and reliable assessment of Human Capital within a medium-sized enterprise influence an investor's intended level of investment in that enterprise? The 4 associated hypotheses which relate to the question were:

H₁ - A valid and reliable assessment of Human Capital within SMEs is achievable;

H₂ - Higher levels of Human Capital within SMEs are weakly correlated with increases in enterprise revenue and so provide information to investors in addition to financial information;

H₃ - Higher levels of Human Capital within SMEs are correlated with higher levels of strategic agility;

H₄ - SMEs with higher levels of Human Capital will attract higher levels of intended investment.

9.2 REMINDER OF THE METHODOLOGY USED

After carrying out the literature review, a methodology based on a positivist paradigm was chosen because of 5 judgements: (1) Human Capital and associated intangibles exist independently and are unlikely to be influenced by the research methodology; (2) a valid and reliable assessment of HC quality can be established and can enable comparison between SMEs; (3) Human Capital was judged to be capable of being subjected to a reductionist approach where quantifiable observations and statistical analysis are feasible; (4) the Researcher's background and skill set enables the use of quantitative methods; (5) The knowledge required to make the assessment could be obtained using quantitative methods which could be underwritten by qualitative methods.

The following methodology was used:

1. Defining the construct Human Capital and associated intangibles in the context of the current study, using a nomological network;
2. Based on the literature review and nomological network, generating and refining a range of components and items aimed at portraying the factors underlying the Human Capital construct. This was carried out by surveying the views of Subject Matter Experts and Investors;
3. Integrating the resulting items into a draft instrument;
4. Piloting the draft instrument in 4 SMEs and 28 Executives studying in a Business School and then capturing data from 200+ SMEs;

5. Demonstrating the instrument's validity and reliability in the context of 4 enabling factors and 8 Human Capital factors. The enabling factors are (1) strategic agility; (2) external relationships; (3) workforce integration; and (4) workforce investments. The Human Capital factors are (5) workforce composition; (6) workforce know-how; (7) workforce relationships; (8) workforce experience; (9) workforce stability; (10) workforce adaptability; (11) workforce impetus and (12) workforce risks.
6. Demonstrating an example assessment and scoring based on one of the 4 pilot SMEs.

9.3 SUMMARY OF THE MAIN FINDINGS

The findings are summarised below in terms of the 4 hypotheses.

9.3.1 A VALID AND RELIABLE INSTRUMENT IS ACHIEVABLE

The first finding is that it is feasible to construct an instrument focused on Human Capital in SMEs which is comprehensive, valid and reliable and which can be implemented quickly and at low cost.

9.3.2 THE INSTRUMENT PROVIDES INFORMATION IN ADDITION TO THE 'FINANCIALS'

The second finding is that, although other studies may have identified correlations between Human Capital and financial enterprise outcomes, the literature review indicates that typically these are low. In the case of the current study, they are low and not statistically significant. Accordingly, it is argued that information provided by the instrument is in addition to that generated by the financial information provided by investment databases. As such it is likely to be seen as valuable, particularly with investors using socially responsible criteria; 'buy and hold' investors and low turnover / relationship building investors.

9.3.3 HUMAN CAPITAL INFORMATION IS ASSOCIATED WITH STRATEGIC AGILITY

One issue contained within the investor survey related to an enterprise's ability to monitor changes in its market(s) and react accordingly. This capability was rated of high interest by respondents. The current study has found a strong and statistically significant relationship between Human Capital and strategic agility. The predictor

variable was overall Human Capital score. The outcome variable was the strategic agility score based on the number and extent of use of six differing strategies. This association is one which will be seen to be of value to investors.

9.3.4 HUMAN CAPITAL INFORMATION VARIES INTENDED LEVELS OF INVESTMENT

Based on the above, once investors had been appraised of the issues relating to Human Capital (and associated intangibles), they indicate a likely variation in their levels of investment of between 10% and 50%. This was a statistically significant result.

9.4 THE RESEARCH QUESTION ANSWERED

The answer to the research question is, therefore, that it is feasible to create a valid and reliable instrument for assessing Human Capital in medium sized enterprises and that the information obtained may vary levels of investment by up to 50%.

It is also possible to specify that there are three categories of investor that would find the information of particular use. These are those using socially responsible criteria; low turnover / relationship building investors and passive / buy and hold investors. The category of investor that would not find such information of interest is the short term / high turnover investor. This type of investor will find all that is needed is the current range of readily available financial information.

9.4.1 HOW THE FINDINGS RELATE TO PREVIOUS STUDIES

The findings add to previous studies on the value of Human Capital on its own; the value of Intangible Assets / Intellectual Capital in general; and the demand for more information from investors. These are discussed in more detail below.

9.4.2 THE VALUE OF HUMAN CAPITAL ON ITS OWN

Human Capital on its own has not been shown in previous studies to correlate highly with the financial outcomes of enterprises and this has been the finding of the current study. The literature review revealed a number of studies generating correlations with operational outcomes (e.g. new product development; employment growth; team performance). It is these that may well be the main attraction to investors because they may be seen as leading indicators of enterprise survival and success. The operational variable used in the current study was strategic agility. A strong

correlation between overall Human Capital Score and strategic agility was demonstrated. (A Pearson product moment correlation indicated a strong correlation between the two, $n = 206$, $r = .686$, $p < .001$)

9.4.3 THE VALUE OF INTANGIBLES IN LISTED ENTERPRISES

Based on the results of previous studies, the overall value of those enterprises listed on stock exchanges (ranging from multi-nationals listed on the FTSE to SMEs listed on the AIM) is increased by the value of intangible assets. This was brought to the attention of investors by the books on Intellectual Capital in the 1970s. Examples include *Realizing your Company's True Value by Finding its Hidden Brainpower* (Edvinsson and Malone in 1997) and *Intellectual Capital: The New Wealth of Organizations* (Stewart, 1997). More recently this has been driven home by the books *Intellectual Property Revolution* (Smith, 2015) and *Knowledge Management: Value Creation Through Organizational Learning* (North and Kumta, 2018).

In this thesis it has been argued that Human Capital is the antecedent of all other intangibles, starting with the personal human capital of an entrepreneur and developing into organisational Human Capital. This in turn, develops and combines with Organisational Capital and Relationship Capital to form the value which the Chartered Institute of Management Accountants indicates can make up as much as 80% of a business (Tilley, 2017).

9.4.4 THE ASSOCIATION BETWEEN INTELLECTUAL CAPITAL AND ENTERPRISE OUTCOMES

It is the combination of Human, Organisational and Relationship capital in the form of intervening variables such as innovation capability and knowledge management that generates the highest correlations with enterprise outcomes. Although there have been some associations found between Organisational Capital and enterprise outcomes and Relationship Capital and enterprise outcomes, it is their combination with Human Capital that creates the greatest influence.

9.4.5 THE DEMAND FOR MORE INFORMATION ON INTANGIBLES

It is because of the above that investors are beginning to demand more information on intangible assets in general and Human Capital in particular. This is evidenced by the paper produced by the Association of Pension Funds 'Where is the Workforce in Corporate Reporting' (op.cit.) and the recent research commissioned by the Chartered Institute of Personnel and Development 'Understanding How Institutional Investors Consider and Utilise Human Capital Data' (2017).

9.5 PRACTICAL APPLICATIONS

The original objective for carrying out this study was to develop an instrument which could be used by investors and analysts to assess the quality of HC within medium sized enterprises. This section reviews the practicality of such an instrument together with its range of applications.

9.5.1 INSTRUMENT PRACTICALITY

The difference between the instrument and others being used is that it reflects the following attributes: it is comprehensive, flexible, quick to implement, and has been shown to be valid, reliable, generalisable and comparable. The associated ratings can be defended.

9.5.1.1 The instrument is comprehensive

The literature search and subsequent surveys of subject matter experts, investors and executives demonstrate that the content of the instrument comprehensive. As such, investors can be sure that, when using it, they would be covering all material issues relating to HC.

9.5.1.2 The instrument has a degree of flexibility

The comprehensiveness relates to the range of factors. In addition there is flexibility in terms of numbers of items within each factor. Any given item can be judged to be irrelevant in the context of an enterprise's industry or strategy. Additional items may be added if appropriate. Where the number of item numbers has been changed, a factor average would be calculated. Where a comparison between enterprises is required, for example in the case of a merger, there are two options.

Either the original items should be used without amendment or the two enterprises would agree on any additions / subtractions before the assessment is made.

9.5.1.3 The instrument is quick to implement

The pilot enterprises had no difficulty generating enough data in order to enable judgements by those rating the items. In the case of one enterprise, it took one day to assemble the data from a range of Excel spreadsheets. The second enterprise had most data available using their intranet. Those that could not find the time to carry out an assessment judged that data would be easily retrievable. Accordingly, the Researcher judges that most SMEs should take no more than one day to assemble relevant data and half a day for subsequent ratings to be made.

9.5.1.4 The instrument is reliable and valid

As shown in section 8 the instrument, both reliability and validity have been demonstrated.

9.5.1.5 The instrument is generalisable and comparable

Also within section 8 it has also been demonstrated that enterprises representing 14 of the 21 UK industrial sectors have been able to rate the range of items currently contained within the instrument. Given the instrument's flexibility, the Researcher judges that it would be able to be used in the remaining 7 sectors.

The data obtained from the 206 respondents also enables a benchmark score to be established which can be updated as more enterprises submit their ratings.

9.5.1.6 The instrument generates ratings that can be defended

The ratings being established can be defended through the use of documentary evidence available within an SME. This can be listed as part of the assessment procedure. The range of documents envisaged includes annual reports; board or management team minutes; formal policy statements; customer audits and employee handbooks.

9.5.2 IMPROVING INVESTOR UNDERSTANDING AND TRUST

In section 2.5.5 the level of interest in HC from investors was outlined. The work by Bernstein and Beeferman (2015) and Seagars et al (2015) suggests there is a demand for such information but that there is concern about whether data available is adequate and could be trusted..

Research into investor interests during this study (see section 6.3) indicate that, once investors know more about the construct(s), they believe that information on HC / RC / OC would influence their decision making. Those that answered the item about how such information could influence their levels of investment indicate a variation of between 10% – 50% (see sub section 6.3.2.4). The Researcher acknowledges that respondents to the survey are likely to be those already interested in intellectual capital. Consequently the survey would not have captured the views of those investors more interested in a high turnover / short term investment strategy. Nevertheless, those using relationship building, passive / buy and hold or socially responsible investment strategies are likely to find the instrument of interest.

Up to date research in the UK relating to investor interest is that carried out by the University of Warwick Business School (Houghton et al., 2017). This research confirms the increasing interest among investors, but also indicates that many do not fully understand the materiality of HC, primarily because the information disclosed by enterprises is 'often poor and inconsistent' (ibid, p3). According to Houghton et al., there are three main barriers to full understanding. These are lack of clarity as to what constitutes HC; low prioritisation of HC measurement and reporting; lack of clarity about the link between HC and enterprise outcomes.

The Researcher anticipates that the instrument developed during this study will go some way to reducing these barriers relating to SMEs. In terms of clarity, the 8 factors which make up HC are well defined and presented in the form of clearly worded descriptives (items); there are 4 additional factors - enablers - which influence the growth and retention of HC; With respect to prioritisation, ratings to be made are relatively straightforward, focusing on the current state of each factor / item. Lastly the study makes it clear that good quality HC is linked to strategic agility and consequently may be viewed as a leading indicator of enterprise outcomes.

With the above in mind, there are three potential practical applications for the instrument: (1) the original purpose of informing investor decisions in the context of investment analysis or due diligence; (2) to facilitate scale – ups and (3) as a board level checklist for improving people management. These are outlined in more detail below.

9.5.3 INFORMING INVESTMENT DECISIONS

9.5.3 1 Decisions by investors themselves

The finalised instrument is aimed primarily at institutional investment in SMEs. The investors who may be interested are those who manage large portfolios of SMEs. In the UK there are approximately 30,000 medium sized enterprises with 19 Investment Trusts and 46 Funds that focus on SMEs (Trustnet, 2017).

Currently these investors either visit potential investments personally or rely on reports from investment analysts. The issues covered during personal visits have been outlined in section 2.9.3.1 and include both financial and non-financial issues. A comparison of the non-financial criteria outlined by the investors, while on stage at the London Investor Show, and the factors comprising the instrument are shown below as table 9.5.3 (a).

Human Capital Report	Criteria used by investors at the London Investment show
Workforce composition	Good corporate governance – board diversity
Workforce know-how	Knowledge of the people involved - young people with good ideas.
Workforce relationships Workforce commitment	Strong team with 'skin in the game' Well managed: track record of the people
Strategic agility Workforce adaptability	Looking beyond the visible horizon
Workforce integration	Getting to know the moving parts of the business
External relationships	A good audience – that is lots of customers
Workforce impetus	
Workforce risks	

**Table 9.5.3 (a) Human Capital factors compared to criteria used informally by investors.
(Source UK Investor Show)**

The investors' informal criteria are mirrored by the instrument factors but the latter are better defined, more systematic and more comprehensive. The website www.humancapital.report has been designed to enable this.

9.5.3.2 Reports from Investment Analysts

The reports made by analysts also include some aspects of HC, for example diversity, human rights and health and safety. Such information is typically obtained through annual reports, enterprise web pages, conference calls and newswires (Striukova et al, 2008 as cited in Houghten et al, 2017) or in the case of ethical investors, responsible investment screens (ibid). As with the investors, the analysts will find the use of the instrument will enable them to be more systematic during their analysis and will be able to offer a more comprehensive report. The website www.humancapital.report has also been designed to enable this.

9.5.3.3 Decisions relating to business combinations

The literature review revealed that a large percentage of investment decisions relating to business combinations fail. Martin (2016) suggests this percentage is between 70% and 90%. A common reason is the difference in organisational culture (Tarba and Cooper, 2016). By comparing the Human Capital profile generated by scores for each factor, it would be feasible during due diligence audits to identify differences between the cultures of two enterprises. An example of two theoretical profiles is shown below as table 9.5.3 (b). The table depicts the similarities and differences between an old established enterprise (1) which is considering a merger with a relatively newly established enterprise (2). A commentary has been included alongside the apparent differences, indicating where there is a need for further investigation pre – merger.

The development of an instrument for enabling investors
to assess the quality of human capital in medium sized enterprises

	Enterprise 1 scores	Enterprise 2 scores	Difference	Comment
SME Agility	65	48	17	The enterprise 1 has a wider range of strategies and may well be more agile in the market place.
External Relationships	61	67	-6	There is little difference between the two.
Workforce integration	61	84	-23	Enterprise 2 has put more effort into ensuring differing units work smoothly together.
Workforce investment	39	70	-31	There is a difference in workforce investment and this would need to be investigated
Workforce composition	23	34	-11	Enterprise 2 looks to have a wider diversity of employees. This may or may not be an issue.
Workforce know how	39	70	-31	There is a big difference in know-how and that could be why the merger is being considered
Workforce experience	60	45	15	Enterprise 1 has more experienced people.Maybe there is an 'age bubble'.
Workforce relationships	58	86	-28	There looks to be a much better set of relationships in enterprise 2. Worth investigating.
Workforce impetus	35	54	-19	Enterprise 2 has a different approach to employee pay and recognition. This could need resolving
Workforce stability	81	54	27	Enterprise 1 is more stable, maybe due to an aging workforce. This would need investigating
Workforce adaptability	39	61	-22	Enterprise 1 has policies which increase workforce adaptability Could cause post-merger friction
Workforce risks	108	96	12	There do not appear to be many employment risks that have been taken by either enterprise.

Table 9.5.3 (b) Comparison of two Human Capital profiles.

9.5.4 OTHER POTENTIAL APPLICATIONS

During the development of this study, two other potential applications became apparent. These are from the perspective of the management teams which attract, grow and retain HC. The first is in the form of 'scale-ups' and the second relates to the improvement of HR strategy in SMEs.

9.5.4.1 Facilitating UK scale-ups

A scale-up is defined as an 'enterprise with average annualised growth in employees or turnover greater than 20 per cent per annum over a 3 year period, and with more than 10 employees at the beginning of the observation period'. The Scale-Up Institute estimates that there are in the region of 6000 enterprises with headcounts of 50+ that meet these criteria. A report by the Scale-Up Institute (Coutu, 2014) identified five issues that enterprises need to tackle in order to grow. In order of importance they are: finding employees to hire who have the skills they need; building their leadership capability; accessing customers in other markets / home market; accessing the right combination of finance; navigating infrastructure. There may, therefore, be opportunities to use the instrument among the 6000 enterprises identified. For example the list of factors / items may be used by boards of directors as a way of identifying ways to improve people management practices in preparation for scale-up. The website www.scaleup-leader.guide has been designed to enable this.

9.5.4.2 Improving HR strategy in SMEs

Although not an objective of the instrument, it can also be seen as a way of systematically identifying opportunities to improve HR strategy in SMEs. Reviews of people management in SMEs (e.g. Bititci et al., 2011; Ates et al, 2013) identify skills associated with developing and implementing HR strategy. These are communicating with customers and suppliers; monitoring competitors;

investing; resource allocation; checking financial performance; coordinating operations; change management; communication; training / developing employees; providing feedback and employee motivation. As shown in the table 9.5.4 below, these are consistent with 8 of the factors assessed by the instrument, and so it follows that an annual review of management practices using the instrument is likely to identify opportunities for improvement.

Instrument Factor	People / performance management practice
Strategic Agility	Developing / implementing strategy
External Relationships	Communicating with customers; suppliers; monitoring competitors
Workforce Investments	Invest; Checking financial performance
Workforce Integration	Co-ordinating operations
Workforce Composition	
Workforce Know-How	Training; Developing employees
Workforce Relationships	Communicating company performance; Providing feedback
Workforce Experience	
Workforce Stability	
Workforce Adaptability	Manage change
Workforce Impetus	Motivate employees; Reward employees
Workforce Risks	

Table 9.5.4 Comparison of Instrument Factors and typical people / performance management practices. (Source: Bitici et al. 2011; Ates et al., 2013)

This section has outlined the practicalities and uses of the instrument, but there are still barriers to its use. The next section reviews the likely challenges associated with reporting on Human Capital and associated intangibles.

9.6 OTHER CHALLENGES IN ACCOUNTING FOR HUMAN CAPITAL

There are a number of other issues which influence the potential success of accounting for HC. Already discussed are the lack of clarity as to what constitutes HC; low prioritisation of HC measurement and reporting; lack of clarity about the link between HC and enterprise outcomes. The remaining barriers are lack of time and skills; commercial confidentiality and current accounting practices.

9.6.1 TIME AND INFORMATION RETRIEVAL

As outlined in sub-section 9.5.1.3, one of the attributes of the instrument is that it is relatively quick to implement. Other approaches typically require the active involvement of senior management teams over significant periods of time (e.g. EFQM, op cit). When opting for an external assessment formal reports take months to prepare and, in addition, there are three to four days of external audit (Porter and Tanner, 2004). An internally managed self-assessment still requires significant investment in time to access the required data and make an assessment (ibid).

The pilot stage identified that retrieving relevant data was not a problem to those participating. Nevertheless, even when commitment is available, relevant data is not necessarily easy to produce unless an organisation has an up to date and integrated information system. One study (albeit one linked to sales and marketing) found that SMEs without an information system were lacking even the most basic data. 35% of respondents did not know the average number of sick days taken by employees. 45% could not put a cost on recruiting new staff. (Snowdrop Systems, 2006). This research was 12 years ago, but the literature review demonstrates that the implementation of integrated information systems in many SMEs is still in its infancy.

9.6.2 CURRENT ACCOUNTING PRACTICES

Viewing employees as an asset has been a challenge to traditional accounting practice. This has depicted HC in terms of costs to the organisation (cost of pay and benefits, cost of training etc) and avoided recognising the contribution employees make to organisational success.

There are barriers to changing the status quo. For example International Accounting Standards (International Accounting Standards Board, 1998) require that an intangible asset be recognised only if there is a probability that future economic benefits attributable to the asset will flow to the organisation and the cost of the asset can be measured reliably. The issue of 'future economic benefits' is a difficult one to overcome because organisations do not 'own' their employees. Retention of key employees – those most likely to contribute significantly to HC – is a recurring theme in annual CIPD surveys. For example the Resourcing and Talent Planning survey (2013) indicates that, in the previous four years, the percentage of organisations (public and private sectors) indicating they were having difficulty retaining employees was 31%; 45%; 42% and 34% respectively. Most retention difficulties were focused on higher-skilled categories of staff (senior managers/directors; other managers; professionals/specialists and technical staff), and resulting vacancies proved difficult to fill. It is these categories of employee that, arguably, generate a significant level of IC / HC value.

Accounting practices acknowledge this weakness by requiring large and medium sized enterprises to include 'material issues', including information on employees, in a business review, part of their annual report (Companies act 2006, section 417).

9.6.3 COMMERCIAL CONFIDENTIALITY

As SME executives become more aware of the potential value of their IC / HC it is likely that information on a successful enterprise's approach to maximising IC / HC will be seen as commercially confidential. They are less likely to want to reveal such information. Indeed, the Kingsmill report (2003) found this to be a potential issue:

'In some cases (organisations) were anxious about revealing data that might help competitors, risk misinterpretation by analysts or lead to unhelpful media reporting'.

In addition there is a view that 'giving away' too much information may reduce management's power base by providing ammunition for use by unions, works councils and pressure groups (Conference Board 2002).

9.7 STUDY DELIMITATIONS AND LIMITATIONS

The study has provided answers to the research question posed, but it is subject to delimitations and limitations. In the context of this study delimitations are defined as definitions established in order to create boundaries to, or narrow the scope of, the study. Limitations are defined as research activities which, if carried out differently, may have improved or changed the instrument's current attributes.

9.7.1 DELIMITATIONS OF THE STUDY

The research question and associated hypotheses limited the study's boundaries by specifying research into human capital in medium sized enterprises. Such enterprises were defined in the executive survey as having a headcount of between 50 and 250. Delimitations were also established though the development of a nomological network. This is reproduced below as figure 9.7.1a

One key delimitation was to distinguish between formal Human Resource Management and Human Capital, the former typically being viewed as a precursor of the latter (Wright, and McMahan, 2011).

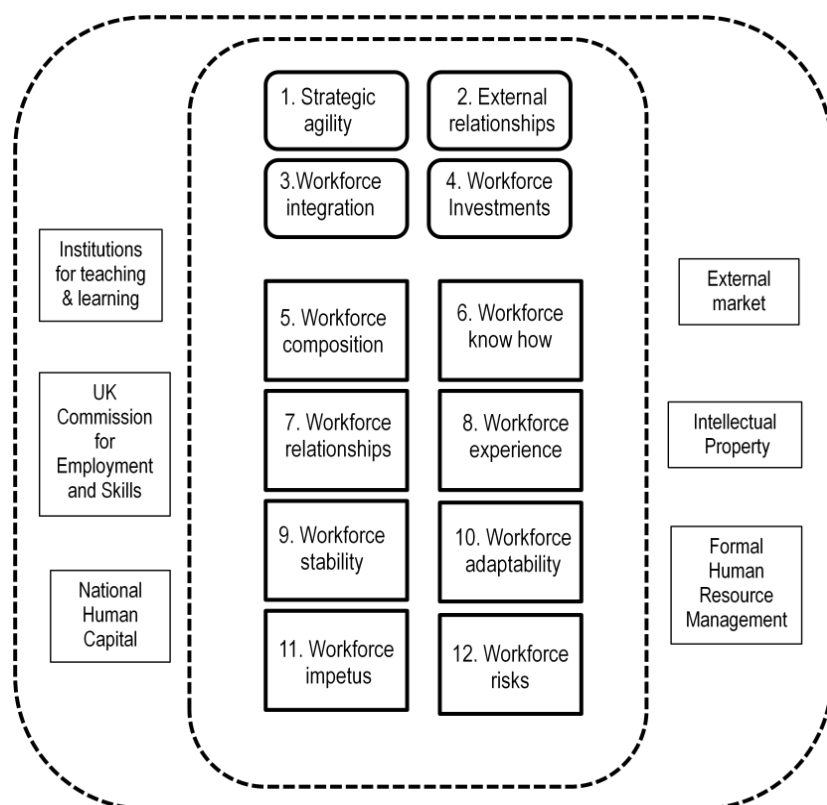


Figure 9.7.1a Nomological network

In the context of due diligence and investment analysis, ‘formal HRM’ is different from that commonly viewed by both academics and HR professionals (e.g. The CIPD profession map, 2018). Traditional HR checklists used by UK solicitors and accountants in the context of due diligence have been discussed in section 2.9. In this sub-section a third US checklist (HR due diligence checklist) has been used to demonstrate the difference between traditional HR due diligence factors and those used in the final version of the instrument. (There is minimal difference between the UK and US checklists, but the latter offers a more comprehensive explanation of issues to be investigated). The comparison is shown as Table 9.7.1b

The US checklist	The instrument's final components
An organizational chart which lists the name and title of each Director. Include the number of direct reports by functional area	Workforce Composition
A list of the executive employees of the Company, and employees of the Company whose total annual compensation is in excess of xxxxxx	Workforce Composition
List of employees including both active and inactive employees employed by the company for the last three years.	Workforce Composition
Tenure of the employees	Workforce Experience
Copies of all bonus, severance, employee option and employee equity participation plans or agreements.	Workforce Investments
Details of all employee benefit plans	Workforce Investments
Details of all other employee plans and arrangements that do not constitute Employee Benefit Plans.	Workforce Investments
All management employment contracts, “golden parachute agreements,” severance agreements, consulting agreements, “stay” agreements, and agreements not to compete	Workforce Risks
All labor contracts, collective bargaining agreements, union agreements, and any consents, waivers or amendments.	Workforce Risks
A description of any order or decree to which any senior executive of the Company is subject that does or could impact the business in the future.	Workforce Risks

**Table 9.7.1b: The comparison of traditional HR due diligence factors
(source: HR due diligence checklist) and those used in the finalised instrument.**

It can be seen that the focus on traditional due diligence 'HR' issues is primarily on workforce composition, costs (investments) and risks.

As HRM delimitation was specified, the finalised instrument need not have incorporated 'Workforce Risks' as these incorporate HR practices. The Researcher decided to include them because accountants and solicitors would expect them to be included in such an instrument. Nevertheless the inclusion is a weakness in the logic of the study.

A construct which was omitted from the delimitation was Leadership. This was for two reasons. Firstly, a combination of items currently found within the instrument can generate an assessment of leadership. For example a combination of existing items portraying aspects of agile leadership is shown in Table 9.7.1. (c). This is based on Meredith and Francis (2000) as outlined in sub-section 2.4.4.5. Second, leadership at the senior level is already comprehensively assessed during due diligence and investment analysis (Harding and Rouse, 2007).

Being continuously on the lookout for new markets, products or services. Emphasizing research and development, decentralisation and flexibility. Initiating / maintaining good relationships with key customers Reviewing organisation processes to ensure they help people get their jobs done Using up to date technology to its maximum potential Ensuring people have opportunities to keep their knowledge and skills up to date Empowering the workforce to monitor and control the quantity / quality of output Implementing a policy of continuous improvement Capturing and implementing new ideas generated by the workforce
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**Table 9.7.1 (c) Aspects of leadership with items currently existing in the finalised instrument.
Based on Meredith and Francis (2000)**

As such, the delimitations could have been differently specified. For example limiting the study to medium sized enterprises in the UK, excluding organisational and relationship capital, excluding workforce risks and limiting the investors to those focusing on a 'buy and hold' strategy.

However, by doing this it would have been more difficult to boost the executive sample size by incorporating medium sized enterprises in the USA. The instrument would have created a less valid assessment of human capital if the 'influencer' components of organisation and relationships and workforce risks were excluded. A stricter limit on investors would also have increased the difficulty of generating a suitable investor sample.

The Researcher judges, therefore, that creating more limits to the study at the outset would have inhibited the research due to sampling problems. Now the instrument has been developed it will be feasible to develop the study by focussing on human capital in specific countries / industries and focussing on specific types of investor.

9.7.2 LIMITATIONS OF THE STUDY

Brutus et al. (2013) carried out an analysis of the main self-reported limitations to be found over the period 1982 to 2007 in the *Academy of Management Journal* (AMJ), *Administrative Science Quarterly* (ASQ), and *Journal of Management* (JOM), *Strategic Management Journal* (SMJ) and *Journal of Applied Psychology* (JAP). Their findings were that the most reported limitations related to internal validity, external validity, construct validity and statistical conclusion validity. These four limitations are also comprehensively covered in textbooks relating to research methods in psychology (e.g. Goodwin, 2010; Coolican, 2014; Morling, 2015). In addition, Brutus et al. added a fifth limitation which they termed 'theory issues'. This

sub-section will take the format used by Brutus et al., including theory issues and address each in turn.

9.7.2.1 Internal validity

Internal validity addresses the issue of whether a relationship established between a predictor variable and outcome variable is a causal one (Drost, 2011). In the context of this study, as outlined in section 1.4, (The Purpose of This Research) the predictor variables are human capital, organisational capital and relationship capital. The outcome variables are strategic agility and changes to investor intentions.

The correlational methodology chosen does not establish a causal relationship, only a strong linkage. Nevertheless there are potential internal validity threats to the validity of the linkages found. These relate to experimenter effect, selection bias, maturation, statistical regression and the presence of confounding variables.

9.7.2.1.1 Experimenter effect.

In the case of both the investor survey and executive survey it was made clear that the Researcher was a student and that, although the results of the survey may subsequently have been used commercially, they were primarily of academic interest. This could potentially have impacted on the perception of the study as being less relevant than a commercially oriented one. The Researcher judges this likely to be of limited impact, based on face to face comments made during the pilot sessions. Nevertheless, in order to reduce any such potential effect, it would be necessary to run surveys, emphasizing commercial application and providing respondents with a synopsis of the results.

9.7.2.1.2 Selection bias

In the case of the pilot sessions of the investor survey and executive survey, access to professional investors and executives in medium sized enterprises was a significant challenge. The resultant sampling was consequently opportunistic and participants were not, therefore, randomly selected. Participants self-selected based on their interest in the study. As such this could potentially have impacted on the validity of the results. In the case of both investors and executives it could have biased the results. Those potential participants who disagree with the reasoning behind the study were less likely to be involved. The results, therefore, may be more positive than would be found in a random sample. In order to reduce this potential bias more effort and funds would need to be allocated to randomising the samples and the demographic data used would need to be augmented. In the case of investors the demographics should pinpoint the type of investor (e.g. focus on ethics; focus on long term buy and hold; focus on short term buy and sell). In the case of executives, the demographics should indicate the respondents' value set relating their workforce and length of time since relevant policies and practices had been in place.

9.7.2.1.3 Maturation

Both investor and executive surveys were based on a wide range of items all of which required concentration and thought in order to respond with 100% accuracy. It is possible that respondents could have been working under time pressure. As such they could have been subject to tiredness and or boredom and offered less accurate responses. This was a possibility not controlled during the study. One way of resolving this in the future would be to divide the surveys into two, with respondents completing much fewer items. The disadvantage of doing such would be the need to increase the number of respondents.

9.7.2.1.4 Statistical regression

Also as a result of tiredness or boredom, respondents could potentially have been inclined to cluster towards the mean, particularly as a 5 - point scale was used. This is unlikely to have been the case as most data was found to be skewed either positively or negatively.

9.7.2.1.5 Confounding variables

Confounding variables may have been present in the sample of medium sized enterprises and these variables were not identified or controlled. Possible organisational development and change management interventions available to a medium sized enterprise both in the UK and USA include survey feedback (Church and Wacławski, 2017); team building (Aga et al., 2016); six sigma (Nadeau, 2017); process re-engineering (Klun and Trkman, 2018). The presence of such initiatives may have influenced the correlations found.

Any future surveys should include an item asking for information on such initiatives, when they started, whether they are still live, and the impact they may have had on human, organisational or relationship capital.

9.7.2.1.6 Other potential threats

Other potential threats to internal validity such as changing circumstances, experimental mortality, and testing effect were not relevant as they are found during longitudinal studies.

9.7.2.2. External validity

A further issue is whether any relationship found between the predictor variable(s) and outcome variable(s) is/are generalisable. In the case of the investor survey, this would mean being generalisable to the full range of UK investor types. In the case of executives it would mean being generalisable to those medium sized enterprises in all 19 of the main UK industrial sectors.

Focusing first on investors, as explained in sub section 6.3.1 (Investor Survey Participants), it was not feasible to access a full range. Private investors were relatively easy to access and professional investors attending the UK investor conference too were accessible. However those professional investors working primarily in investment banks and/or investment trusts / funds were found to be difficult to access. The end result of 100+ responses included only 26% institutional investors. Consequently the results of the investor survey are not likely to represent the full range of investors; particularly those using short the term / high turnover strategy who are unlikely to have responded.

However, this may not be a major difficulty because short term investors rely on financial metrics with which to make decisions (Chan et al., 2013) and so it is unlikely the instrument would be used by them. The impact on 'ethical' and 'buy and hold' investors is potentially more of an issue because a more representative sample may have produced a different set of results. That is, the correlations between the predictor variable and outcome variables may have been different. The issue could be resolved by investing more time and funds in order to attract those hard - to - reach investors. In the context of a different study, this approach is currently being carried out by the Chartered Institute of Personnel and Development (Houghton, E., 2016).

Focussing on executives, the wording survey items is not appropriate to all industries and consequently restricts their use by some potential respondents. Workforce characteristics differ between industry sectors and even within industry sectors (Abel et al. 2016). In particular, it has been known for many years that levels of accidents; absenteeism; industrial unrest and employee turnover are known to vary widely (e.g. Curren, 1981; Ballard, 1992; Sullivan et al., 1991). The current wording of the items relating to these issues in the factor Workforce Stability does not reflect this variability. Another example is that variable pay systems, performance related pay and share ownership schemes in the Workforce Impetus factor are not used in all medium sized enterprises (Kersley et al., 2006). The current way this limitation is addressed is to include an option in the Likert – like scales to indicate ‘of no relevance’.

In the future the Researcher will address this limitation by creating a second 5-point Likert-like scale. This will enable respondents to assess the influence each item has on the achievement of enterprise objectives. Those items which have no influence would be rated zero and excluded from the subsequent report.

9.7.2.3 Construct validity

Construct validity focuses on the measurement procedure itself. It incorporates a range of other forms of validity: content validity, convergent and divergent validity, and criterion validity (Cronbach and Meehl, 1956; Messick, 1980; Bagozzi and Phillips, 1991).

9.7.2.3.1 Content validity

Content validity is the extent to which the items and factors making up the final instrument are relevant and representative of the construct(s) that they measure

(Haynes et al., 1995). The Researcher took care to ensure accurate operational definitions, relevant items and a comprehensive range of theoretical components. This was done by establishing a nomological network and testing the theoretical approach using 10 subject matter experts and 47 executives participating in two pilot studies (29 participated in the business school pilot; 9 in the manufacturing pilot; 4 in the school pilot; 2 in the theatre pilot and 2 in the construction pilot). The Researcher judges, therefore, that this is unlikely to be a limitation.

9.7.2.3.2 Convergent and divergent validity

Convergent validity helps establish construct validity by identifying the strength of the relationship between scores that are obtained from two different measurement procedures designed to measure the same construct (Campbell and Fiske, 1959).

Divergent validity helps to establish construct validity by demonstrating that the human capital construct is different from other constructs such as human resource management. This is done by identifying a low level of relationship between the two when measured using two different measurement procedures.

The current study did not assess convergent or divergent validity because the Researcher already had difficulty finding individuals who would participate once in the investor survey or executive survey. It was judged unlikely that survey participants would be willing to offer their views on human / organisational / relationship capital twice.

9.7.2.3.3 Criterion and concurrent validity

Criterion validity involves comparing a previously established instrument with the instrument under development. (Bagozzi and Phillips, op. cit.). This is different from concurrent validity which involves comparing two newly created instruments (Barrett

et al., 1981). As explained above, the Researcher was reluctant to ask participants to complete two assessments and so no correlations were established. However the content of the new instrument was compared with that of 3 others that claimed to assess human / organisational / relationship capital in larger organisations (see subsection 8.3.2, Criterion Validity). The wording of the new instrument was more colloquial (on purpose) but the content was found to be similar.

As a result of the work carried out to review content validity and criterion validity, the Researcher judged that the construct validity of the instrument was defensible.

9.7.2.4 Statistical conclusion validity.

Statistical conclusion validity is based on the need to use the correct statistical data analysis in order to make defensible inferences (García-Pérez, 2012). The potential limitations relating to this aspect of validity are violated assumptions, inappropriate statistical power, restriction of range and the use of unreliable measures.

9.7.2.4.1 Violated assumptions

The Researcher has been careful to check the available data to ensure the assumptions relating to a statistical test had been met, examples of which can be seen in sections 6.3.4 (Investor Survey Results) and 7.4 (Human Capital Assessment Survey Results). The checks involved ensuring the correct sample size; substituting missing values; minimising the impact of outliers; creating a continuous level of measurement; reviewing the independence of observations; adjusting the shape of data to approximate normality and checking for equality of variances. Based on the checks carried out, the Researcher judges that the required assumptions were met.

9.7.2.4.2 Inappropriate statistical power

The power of a test is based on the likelihood that an effect, in this study a correlation, would be identified if there is one. If the power is too high the concern is that a correlation would be generated when one really does not exist (a type I error, or false positive). If the power is too low then the concern is that no correlation would be identified when there actually is one (a type II error or false negative). Consequently it is important to ensure appropriate statistical power. The Researcher ensured the required power by reviewing the combination of sample size, probability levels and power. If two of these are known or assumed, the third can be calculated. Cohen (1992) as cited in Field, 2011 (p.58) recommended a power of .8 which generates an 80% chance of detecting an effect when there is one. A power of .8 was achieved by using a probability level of 0.05% and calculating the required sample size.

The Researcher judges, therefore, that statistical power was appropriate.

9.7.2.4.3 Restriction of range

Restriction of range occurs when a study limits the diversity of the population(s) being studied (Wiseman, 1967). The restriction can influence the size of a correlation coefficient and it is feasible that this may have happened in the context of this study. The range of investors was limited due to the need to use an opportunity sample. The range of executives was limited due to the need to use the CINT executive database. Typically a limit, as described, is likely to lower the correlations found,

although as early as 1967, Wiseman argued that, in some circumstances, it could also increase the level of correlation.

In order to minimise the impact of range restriction there are approaches to correct the correlations (Stauffer and Mendoza, 2001; Wiberg and Sundstrom, 2009) and these could be used during future studies.

9.7.2.4.4 The use of unreliable measures

A measure has a high level of reliability if it regularly generates similar results under consistent conditions. (Cronbach, 1947; Kline, 2015). The use of self-reporting, as used in the executive survey, is well known potentially to result in unreliable results (Podsakoff and Organ, 1986; Kormos and Gifford, 2014). The self-report could be unreliable due either to deliberate faking (Van de Mortel, 2008) or social desirability bias (Fisher and Katz, 2000; King and Bruner, 2000; Krumpal, 2013). The investor survey is unlikely to have been affected in this way as the items were asking about their levels of interest in human capital. However the executive survey could potentially have been affected. In the case of the resulting instrument, the Researcher has attempted to minimise the impact of self-report unreliability in 3 ways. Firstly, each point on the five point rating scale was anchored. The research into behaviourally anchored rating scales the ratings has demonstrated that this approach improves rating reliability (Debnath et al., 2015; Kell et al., 2017). Secondly it was recommended that the ratings should be carried out by a team of executives, not an individual. This reduces the chances of unreliability due to faking or social desirability (Driskell and Salas, 1992; Salas et al. 2005; DeChurch and Mesmer-Magnus, 2010) but could increase the possibility of 'group think' (Janis, 1971). Third, the Researcher has specified that the self-report ratings should be authenticated with

documentation (e.g. policy statements; internal audits; internal newsletters; management team minutes) (Bryman and Bell, 2015 p. 561)

Consequently, although there is a potential for unreliability, the Researcher judges this to have been minimised.

9.7.2.5 Theory issues

Theory issues arise when the use of a different theoretical lens could establish an alternative or more comprehensive result. One key theory used by the Researcher is that of Miles and Snow (op. cit.) to portray four strategies likely to be used by medium sized enterprises (Parnell et al. 2014). The combination of ratings relating to strategic intent could have been different if another theory had been used and this could have impacted on the correlation found between the human capital score and levels of strategic agility. The Researcher chose the Miles and Snow typology because of its 'innate parsimony, longevity, industry - independent nature, and its correspondence with the actual strategic postures of firms across multiple industries and countries' (Hambick, 2003 as cited in DeSarbo et al. 2005, p. 47). Alternative typologies with similar characteristics, which enabled brief descriptors to be incorporated into the instrument, were difficult to find. One alternative was Porter's typology (2004, p. 35) covering 3 generic strategies: overall cost leadership, differentiation and focus. This option did not include the 'reactor' strategy specified by Miles and Snow and it was the Researcher's view that this could be one to be found among medium sized enterprises. Also the cost leadership strategy has been criticized as being more of a position from which a strategy can be developed (Johnson et al., 2008). Storey (1994) addressed the difficulty of creating a typology by specifying the range of elements (found in 12 different publications) to be considered when establishing an SME strategy. These were 'workforce training; management recruitment and

training; external equity; technology; market positioning; planning; new product introduction; customer concentration; competition; availability of advice and/or state support; export opportunities' (Storey 1994, p144). This approach did not meet the Researcher's preference for parsimony, but the elements were incorporated as items within the overall instrument.

Luecke (2005, p. 30) confirmed the complexity of strategic theory by listing the wide range of strategy frameworks including low-cost leadership; diversification, merger-acquisition; global; customer focus; product leadership; vertical implementation; flexibility; product / service differentiation (Luecke, 2005). He concluded by focussing on Porter's typology.

In summary the Researcher judges that the use of Miles and Snow was appropriate for generating four short descriptors of strategy which could be recognised by the users of the instrument.

9.7.2.6 Conclusions to the issue of limitations

The Researcher views those limitations identified as opportunities to improve subsequent studies into the influence of human capital on investor decisions. In summary these opportunities include: being more specific about delimitations and defining the scope of a study (e.g. restricted to a specific industry); minimising sampling bias by generating enough funding to enable random sampling; providing opportunities to select specific respondents for analysis by increasing demographic data (e.g. different categories of investor); using items to describe other potential initiatives to identify potential confounding variables (e.g. six sigma); manage the possibility of maturation by minimising the number of questionnaire items; create two versions of an instrument to enable convergent, divergent and concurrent validity.

9.8 ORIGINAL CONTRIBUTION TO KNOWLEDGE

PhD originality has been interpreted in different ways by different researchers (Gill and Dolan, 2015). For example originality has been based on differences of approach; method; hypothesis; data findings or theory (Winter et al. 2000; Mullins and Kiley, 2002; Philips and Pugh, 2010; 2015). With this in mind

Philips and Pugh (op. cit.) assembled a range of originality criteria. These are summarised as table 9.8 and used as a basis for this section which is divided into those aspects of the current research that are not original, and those that the Researcher claims to be original.

9.8.1 ASPECTS OF THE RESEARCH THAT ARE NOT ORIGINAL

As discussed in sub-section 1.1.2 (The History of Intellectual Capital), the concept of intellectual capital and the assessment of human, organisational and relationship capital is not new. It was referred to in the early and mid 20th century (Schumpeter, 1912; 1934; Kronfeld and Rock, 1958; Penrose, 1959) and discussed in detail in the 1970s (e.g. Edvinsson and Malone; 1997).

1. Presenting a major piece of new information in writing for the first time
2. Extending, qualifying or elaborating on an existing piece of work
3. Undertaking an original piece of work designed by someone else
4. Developing a new product or improving an existing one
5. Reinterpreting an existing theory, maybe in a different context
6. Demonstrating originality by testing someone else's idea
7. Carrying out empirical work that has not been done before
8. Using a different methodological approach to address a problem
9. Synthesising information in a new or different way
10. Providing a new interpretation using existing / known information
11. Repeating research in other contexts, for example, a different country
12. Applying existing ideas to new areas of study
13. Taking a particular technique and applying it in a new area
14. Developing a new research tool or technique
15. Taking a different approach, e.g. a cross-disciplinary perspective
16. Developing a portfolio of work based on research
17. Adding to knowledge in a way that has not previously been done before
18. Conducting a study on a previously un-researched area or topic
19. Producing a critical analysis of something not previously examined

**Table 9.8 A range of originality criteria.
(Source Phillips and Pugh, 2010; 2015)**

All three components of intellectual capital, as defined in this study, are already assessed using well established techniques in business excellence audits such as the Baldrige Excellence framework and European Foundation for Business Excellence model.

There are also well established approaches to assessing Human Capital exclusively. Examples are discussed in section 2.7.4 (Approaches that Exclusively Assess Human Capital) and include Mayo's Human Capital Monitor and Huselid et al.'s Workforce Scorecard.

9.8.2 ASPECTS OF THE RESEARCH CLAIMED TO BE ORIGINAL

Taking Phillips and Pugh's range of originality criteria, the Researcher claims originality based on items (4) developing a new product; (10) providing a new interpretation using existing / known information (12) applying existing ideas to new areas of study (13) taking a particular technique and applying it in a new area and (14) developing a new research tool. These are outlined in more detail below.

The end result of the study has been to (4) develop a new product which can be used by professionals for the purpose of due diligence or investment analysis. The development of the new product was (10) carried out by interpreting known information in a different way and (13) using an existing technique but (12) applying it to a new area of study: medium sized enterprises.

In defending the claim of originality the Researcher has used publically available search engines (e.g. Google; Bing) and a comprehensive academic search engine (Summon) using the keywords 'human capital'; 'intellectual capital' 'due diligence' 'investment analysis' to investigate the existence of similar approaches. No other approach specifically designed for the purpose of due diligence in medium sized

enterprises was found. This finding complements the comments made by Lippel, Commercial Lawyer of Addleshaw Goddard, LLP and Newton, Head of People, PwC (personal communications, 2017), neither of whom knew of similar approaches.

One approach with the closest content, and focusing on SMEs, is the Intellectual Capital Statement (Mertins and Will, 2008; Mertins et al 2009) which is being developed in Europe. However this has the objective of creating a standard which should be regularly audited. Consequently, unless already in situ, the Researcher believes it is unlikely to be implemented quickly enough for the purpose of due diligence / investment analysis. Also there are indications that the implementation of such an approach may not be as widespread as hoped (Nielsen et al., 2017).

Lastly (14) the product will be used as a research tool. The Researcher has joined the Workplace Behaviour Research Centre at Leeds University Business School. He intends to use the approach to augment the current comparison data for medium sized enterprises to cover the 21 classifications of the UK standard industrial classification (Prosser, 2007). Such comparison data will improve the interpretation of results in the context of due diligence and investment analysis.

9.9 PERSONAL REFLECTIONS ON THE STUDY

This section completes the thesis by offering the Researcher's personal reflections on the study.

The Literature Review was particularly interesting, although there was difficulty encountered in deciding when to stop digging deeper. A particular interest was to find that a lot of previous 'on the job' learning during consultancy assignments was based on academic research. The Researcher had understood the information and its implications, but there was less awareness of the research studies which backed them up.

The philosophical element was difficult to fathom and interpret and the Researcher found the paradigm boundaries that appear to exist in the minds of many researchers hard to accept. Personal experience of working (part-time) in three University Departments, one focussing on Critical Postmodernism, one primarily Positivist and the third using Interpretivist, Positivist and Mixed methods suggests that researchers today are more accepting of the value of other philosophies than in the past. Perhaps the boundaries are more porous today than when they were first envisaged.

The pilot studies in the 4 SMEs were particularly stimulating. The participating Executives were very interested in the study and how it might help generate investment / funding in their respective enterprises. It was surprising to find that 'not - for - profit' enterprises were as interested as 'for-profit' enterprises, This was because the 'non-profit' enterprises are required to report to their funders each year,

and a quality workforce is as important to them as for a 'for profit' enterprise. The exercise definitely generated improvement action: one pilot organisation subsequently commissioned an employee survey in order to enable the board to rate the items more confidently. It would have been interesting to develop a longitudinal study based on this particular organisation, and this may still be feasible.

The investor survey was a revelation, in particular the informal discussions during the two Investor Conferences attended. The discussions revealed two very different attitudes to the study. On the one hand there were those who were highly encouraging and could see the benefit of obtaining Human Capital data. These were presumably those using social responsibility criteria and the 'buy and hold' and 'low turnover / relationship building' investors. On the other hand there were those who believed all they needed to make an investment were the 'financials' which are readily available in online databases. These were presumably the 'high turnover / short term' investors.

It was particularly pleasing to see that most of the respondents to the survey would vary their levels of investment as a result of obtaining the proposed Human Capital Data. However, as outlined in the 'weaknesses' section above, it is unlikely that 'high turnover / short term investors would have completed the survey.

The Executive survey was perhaps the most frustrating. There was a need to source 200 + executive responses to the SME survey. An initial range of 1000 emails produced a highly disappointing .003% return. This came as a surprise because the Researcher had been used to achieving 60% - 90% response rates when surveying

employees within organisations. On reflection, the difference rests on Board level and Union exhortations to respond and the knowledge that action would be taken on the results. This backup was not available in the context of unsolicited emails even though the respondents had opted in to receiving them. The revelation of the existence of panel surveys came as a great relief.

Overall the Researcher has found the study to be both a significant learning opportunity and generally enjoyable. More importantly the Researcher believes that an original approach to assessing the quality of HC in SMEs has been developed, and that it will enable investors to make a range of more informed investment decisions.

-End-