

**REFORMED CURATORSHIP AS A STRATEGIC
APPROACH TO RESOURCE VULNERABILITY
REDUCTION IN THE SOUTH AFRICAN WINE
INDUSTRY**

by

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EXECUTIVE SUMMARY

The South African wine industry contributes 1.1% to the GDP of South Africa and provides work, directly and indirectly, to over a quarter of a million people. Yet despite established literature depicting various external threats and threatening market conditions, no framework exists to determine the vulnerability to erosion faced by individual wine producers' resources. The theoretical framework of Curatorship, as proposed by Le-Breton Miller and Miller (2015), provided a solid foundation and inherent nurturing, innovative approach to aid the South African wine industry. This framework is positioned squarely within the realm of the resource-based view of strategic management, creating opportunities for definitive contribution to existing bodies of knowledge. However, an aggressive and critical review of the literature on which Curatorship was based necessitated enough changes to rename the framework and rework it into a scientifically testable, explanatory model. As such, the framework was renamed Reformed Curatorship. Not only was a scale instrument derived from the literature, but also a 'step-by-step' scale creation framework, which could be used within the managerial sciences. A smaller, yet highly reliable sample was tested. The sample was subjected to case screening, exploratory factor analysis, reliability testing, regression analysis and PLS-SEM. Thus, the South African wine industry became a multi-industry vessel against which this scale was subjected to and analysed accordingly. The scale proved reliable and valid to a large extent. From an explanatory viewpoint, only the construct of 'ambiguity' proved to harbour statistically significant explanatory power, along with some predictive power relating to 'firm performance', the dependent variable. However, the small sample does provide a limitation on the results, along with the time it took to conduct the research and the energy expended. Amongst several contributions to literature and industry, the two most notable contributions are the 34-point step-by-step scale creation framework, and the operationalisation of the original Curatorship framework into a tested and useful model related to firm performance. This research also led to several new suggested avenues of research. Ultimately, this research established Reformed Curatorship as a strategic approach to resource vulnerability reduction in the South African wine industry.

KEY TERMS:

Strategic management; Resource-based view; South African wine industry; Resource erosion; Ambiguity; Misalignment; Firm performance; Scale design; Management; Operationalisation.

DECLARATION OF OWN WORK

DECLARATION

Name: Wilhelm Karl Neuland

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Degree: DBL

REFORMED CURATORSHIP AS A STRATEGIC APPROACH TO RESOURCE VULNERABILITY REDUCTION IN THE SOUTH AFRICAN WINE INDUSTRY

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

(The thesis will not be examined unless this statement has been submitted.)



SIGNATURE

20 January 2022

DATE

CONDENSED CURRICULUM VITAE

Wilhelm Neuland started his career as a Combat Officer in the South African Navy in 2001. He obtained a BMil (Stellenbosch) degree in 2005. This was a BA/BSc/BCom hybrid degree, with Military History and Nautical Science as his major subjects. He served as Assistant Weapons Officer and Navigation Officer on Strike Craft until 2011. In 2007-2008 he served as an exchange officer with the French Navy onboard the helicopter carrier Jeanne d'Arc, specializing in anti-submarine warfare. In 2010 he obtained a National Certificate from the University of Johannesburg in Competitive Intelligence and Analysis. From 2011-2014 he was a Navigational Instructor at Maritime Warfare Training Centre in Simon's Town. He resigned his commission in 2014 and in 2015 became primary lecturer for Strategic Management (BCom Hons) at UNISA, also obtaining his MBL (UNISA) during the same year. His elective modules were Corporate Parenting and Chaos Theory, within the domain of Strategic Management. During 2015 he co-presented at the SCIP (Society for Competitive Intelligence Professionals) in Atlanta, Georgia, presenting a model relating to creating an in-house competitive intelligence function for large firms. During 2018-2019 he was Head Business Coach at Siyakha Implementation Partners. He is currently the National Programme Manager of Business Leadership at Vega School of Branding.

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- William Arthur Ward

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Wilhelm Neuland

CHAPTER 1: INTRODUCTION

1.1 Introduction

This document is a methodical outlay of the research to be conducted within the academic discipline of strategic management, relating directly to the South African wine industry. Background to the research topic will be provided, culminating in a brief but precise articulation of the working title.

The research problem will be stated and substantiated, followed by an explanation regarding the purpose of the research, from which research objectives will be derived. It will be demonstrated that the research problem, research purpose and the research objectives are appropriately aligned. Delimitations, assumptions and possible contribution of the research will be expressed.

The preliminary literature review will indicate that the researcher has a firm grasp on the relevant theory, as well as seminal work associated with the research topic. The ability to critically evaluate and synthesise literature, along with the integration of opposing and supporting views, will be established, concluding with an argument relating to the demarcation and justification of the proposed research.

To provide the context within which the research will be conducted, the ontology and epistemology will be discussed and substantiated. The following section will describe the research design, specifically referring to the nature, type, units of analysis and units of observation. Thereafter the research methodology will be discussed, with specific reference to the phases in which the research will be conducted, the population and sample size, the instrument and data collection, as well as data analysis.

The limitations imposed by the envisioned research design will be clarified, after which the ethical concerns relating to the research will be addressed. Ultimately, the first chapter will reach its completion with concluding remarks, which will briefly summarise the content.

1.2 Research topic and working title

This section consists of two parts. The first part will provide background information relating to the two pillars of the proposed thesis – the theoretical framework and the industry in which it will be tested, in

order to become a practical, useful model. The second part of this section will consist of an articulation and justification of the working title.

1.2.1 Background information

Porter (1985:1) states that competitiveness is the linchpin which determines the successfulness of a firm. Thompson, Scott and Martin (2014:5) explain that firms need to employ the required resources and capabilities in order to counter competition and exploit opportunities - in effect, creating superiority over their rivals. This superiority (or 'edge') is referred to as competitive advantage and is central to the livelihood of any firm. Porter (1985:3) describes the origin of competitive advantage as an ability of a firm to create or add value for buyers which exceeds the cost to the firm to achieve this.

Thompson et al. (2014:6) classify strategy as a structured process which culminates in an understanding of what firms and their management teams do. Strategic management is categorised as a progressive method which involves creation, implementation and measurement of purpose (Thompson et al., 2014:9).

Strategic management as a discipline has always revolved around the question of the creation and sustainment of competitive advantage (Barney, 1991:99), thus establishing competitive advantage as a central tenet within the field of strategic management.

Various approaches to strategic management have evolved over the past 80 years. Mintzberg, Ahlstrand and Lampel (2012) published an entire book on ten different approaches (or rather, 'schools of thought') to management. Mintzberg et al. (2012:290-293) classify the resource-based view (RBV) under the 'cultural' approach to strategic management, placing it side-by-side with other schools of thought, such as strategy-as-practice, whereas other authors took a more sequential view on strategic management. Ghemawat (1999:1-16) and Grant (2010:13-16) allude to various phases in the evolution of strategic management, along with the associated approaches. Strategic management was initially referred to as corporate planning and, as the focus shifted to a more scientific approach of implementation, became concerned with the positioning of the firm in terms of the industry. During the 1990s, the resource-based view held sway until the 21st century. Due to technological advancements, flexibility and responsiveness became the watchwords, along with the development of special sub-disciplines within

strategic management. The resource-based view is still deemed extremely relevant, as it addresses inter-temporal connections relating to the profit-function of a firm (Ghemawat, 1999:118).

The resource-based view (RBV) was loosely based on Penrose's (1959) argument surrounding market imperfection, as articulated by Wernerfelt (1984) and gained traction with Hamel and Prahalad's (1990) work on dynamic capabilities (Mintzberg et al., 2012:291-292).

RBV is a view which champions the idea that competitive advantage is achieved from the inherent resources and capabilities found within a firm and cannot be maintained by means of exploiting opportunities within a specific industry (Thompson et al., 2014:154). This view gained notoriety in the 1980s and 1990s, shifting away from the concept that competitive advantage is only determined in relation to competition (Thompson et al., 2014:154).

Scholars have since expended great effort on categorising, defining and explaining the properties of resources and capabilities within a firm which induce above-average rents, and neglected inquiry into the depletion or erosion experienced by these resources and capabilities (Le Breton-Miller & Miller, 2015:397). In simpler terms, the resources and capabilities are not only being 'used' by a firm, but they are also consumed, or 'used up'. This produces a glaring problem within RBV which deserves further attention. It is this void in scholarly literature which Reformed Curatorship addresses.

Le Breton-Miller and Miller (2015) derived an uncomplicated, conceptual process which addresses resource erosion prevention in a methodical manner. This process is called Curatorship, as it is derived from the method and execution by which museums successfully preserve their artefacts.

The concept of Curatorship falls squarely under the umbrella of RBV and addresses the paradox that the same resources which induce above-average rents (and by implication competitive advantage) become more vulnerable as a result (Le Breton-Miller & Miller, 2015:397). Curatorship is a novel framework, and at this stage fairly conceptual. The authors are Canadian, and one can safely assume that the framework was developed in (and, as a consequence, for) firms operating in established markets. No evidence could be obtained that it has been converted to a model or tested in any industry.

The derivation of Curatorship from another discipline might appear strange and of questionable value. However, Nerur, Rasheed and Pandey (2016:1082) concluded that strategic management is a vessel of integrated and interdisciplinary knowledge, provided by large inflows from other disciplines. These inflows are not only derived from closely associated disciplines such as economics, entrepreneurship and ethics, but also from niche disciplines residing amongst the human and natural sciences. This indicates that lateral ‘borrowing’ of principles is not only a recognised practice in strategic management, but highly prolific, substantiating and sustaining its dynamic and fluid nature (Nerur et al., 2016:1082).

The principles which form the pillars of this framework are soundly derived from academic literature pertaining to the RBV school of thought. The theoretical foundations are well explained, and each argument, observation or conclusion is incremental and unambiguous (Le Breton-Miller & Miller, 2015). As a framework, it is ripe to be examined and re-worked into a framework specifically for emerging market conditions and, more accurately, for the South African wine industry.

During a critical review of the literature related to Curatorship, many substantiations proved to be flawed, if not completely erroneous. As this thesis is concerned with operationalising the concept, an argument will be formed substantiating a name change – from Curatorship to Reformed Curatorship – to show a clear distinction between the work related to the research at hand, and the concept derived by Le Breton-Miller and Miller (2015).

The industry chosen to rework Curatorship into a framework, test it, and ultimately produce a useful, practical model, is the South African wine industry. It is easy to underestimate the contributory significance of the South African wine industry to the South African economy. To provide a context, the contribution to the South African economy in 2015 by the wine industry (1.1 % of the GDP) is roughly equal to the country’s military expenditure (1.12% of the GDP) (Wines of South Africa, n.d.; Trading Economics, n.d.). By 2021, the South African wine industry still contributed 1.1% to the GDP, overtaking military expenditure (pegged at 0.86% of the GDP) despite the havoc wrought by the 2020 / 2021 COVID-19 pandemic (Wines of South Africa, 2021a). The wine industry can boast a plethora of indicators, such as a 700% increase in wine exports between 1994 and 2015, and in 2015 wine was surpassed only by citrus as the top agricultural export item in the country (Finweek, 2015:24-25). By

2021, 269 096 people were employed within the greater wine industry value chain, and 80 183 people were employed directly as farm and cellar employees (Wines of South Africa, 2021a).

It is hereby argued that the South African wine industry is of great importance to South Africa – not only in terms of its contribution to the GDP, but also in providing more than a quarter of a million job opportunities. The implication is that this is a worthwhile, complex and economically relevant industry to use as a test bed for Reformed Curatorship.

However, the slow-growing national and volatile international wine market (PriceWaterhouseCoopers, 2015:3) forces wine producers to contend with a plethora of internal and external forces. According to Mintzberg et al. (2012:297), RBV is a sound vehicle which allows firms to correctively adapt to changing circumstances. Curatorship (or rather Reformed Curatorship, its proposed re-worked form) is suggested as a suitable driver of this vehicle.

Hofstee (2006:13) explains that a topic is a description of a dissertation's position in terms of the relevant academic field and associated secondary literature. Section 2.1 indicated that the proposed dissertation falls under the academic field of strategic management, specifically building upon the RBV. It also established the South African wine industry as the industry which will be investigated. The proposed concept has been shown to be suitable and, more importantly, relevant in terms of the chosen industry. This leads directly to the articulation of a suitable working title.

1.2.2 Working title

The working title for the proposed thesis is:

Reformed Curatorship as a strategic approach to resource vulnerability reduction in the South African wine industry.

This title clearly alludes to the nature of the proposed thesis by including the name of the concept, referring to strategy and indicating the chosen industry. The scope is determined by the term 'resource vulnerability', specifying the central theme of the concept. The scope is further determined by

specifying the industry and the country. Ultimately, the working title is in its most concise form in which the scope and nature of the proposed research can be articulated with accuracy and unambiguity.

Section 1.2 provided a strong foundation from which to state the research problem, the research purpose and the research objectives.

1.3 Research problem

This section will indicate how the research problem was formulated in a clear and explicit manner. The research problem will provide some indication of the research gap in terms of current literature and practice. Ultimately, it will be shown that the research problem is significant, important and specific enough to warrant the research. The purpose of this section is to create a strong underpinning from which to confirm that the research purpose and objectives (featured in the following section) are properly aligned with the research problem.

In order to formulate an accurate problem statement, Hofstee (2006:85) suggests several facets to be addressed. These include the exact articulation of the problem, why it can be seen as a problem, the sub-components related to the problem, what has been done previously to address the problem and why previous work done can be deemed insufficient. Furthermore, a good problem statement can be derived from a good title. This derivation could be achieved by turning the research title into question form (Hofstee, 2006:85).

Taking the cue from Hofstee (2006) and placing the title into question form, one ends up with a preliminary problem question:

To what degree could Reformed Curatorship be a viable strategic approach relating to resource vulnerability reduction within the South African wine industry?

By 2015 the South African wine industry was over-exposed to a host of volatile external forces. PriceWaterhouseCoopers (2015:21-25) reports five global megatrends which will impact the South African wine industry. These include demographic change, climate change and resource scarcity, technological advances, accelerating urbanisation, and shifts in economic power. These megatrends are

defined as macro-economic factors which not only change the future outlook for the wine industry, but also the pace of the expected change (PriceWaterhouseCoopers, 2015:20).

Besides the worst drought South Africa is facing in 20 years, production of wine increased per hectare farmed by 4% over the past three years alone (PriceWaterhouseCoopers, 2015:3,32). It can be safely assumed that organisational slack is already stretched thin, and that variations of disruptive change can be expected.

These external forces increased in severity almost overnight due to the global Covid-19 pandemic, which saw several lockdowns directly implicating the sale of alcohol within South Africa. As a result, 80 wineries and 20 000 jobs are projected to disappear in the 2021 / 2022 period alone – this is due to a R8 billion loss in direct sales and R3.7 billion loss in tourism revenue attributed directly to the lockdowns experienced between 2020 and 2021 (Wines of South Africa, 2021*b*).

It is evident that the South African wine industry is on the verge of a paradox. On the one hand, any firm attempts to manufacture a product or deliver a service by adding value, always at the lowest cost to itself. This implies that any organisational slack should be identified and brought to a minimum to produce acceptable or above-average rents. On the other hand, the ‘leaner’ the value chain of any firm, the more exposed and fragile it becomes when confronted with disruption, volatility or any associated external force. Organisational slack acts as a buffer to ensure the measurable continuation of operations conducted in the value chain.

Organisational slack is defined by Näslund (1964:26) as: “...*the excess capacity maintained by an organisation,*” and explained as a situation wherein the resources of a firm are not completely utilised to their full capacity.

To address this paradox, an acceptable threshold of organisational slack should be determined, but more importantly, an established manner to produce organisational slack, should it be required. Enter the concept of Curatorship. The true value of Curatorship lies in its potential to *produce* organisational slack in order for a firm to cope with change (Le Breton-Miller & Miller, 2015:412).

Section 2.1 briefly alluded to the significance and importance of the South African wine industry in terms of the national economy. It is hereby argued that the disruptive forces experienced by the wine industry thus harbour great significance and import. In terms of literature, no pertinent attempts have been made to address resource vulnerability (specifically relating to the South African wine industry) in a specific, methodical form.

However, since 2015 some steps have been taken to measure and determine competitiveness thresholds, as well as mapping out the human resource segment involvement in this industry (PriceWaterhouseCoopers, 2015:40-61). Also, strategic targets for the industry as a whole have been articulated by PriceWaterhouseCoopers and five other industry watchdogs in the form of the Wine Industry Strategic Exercise (PriceWaterhouseCoopers, 2015:62-65). Although these steps have provided a cohesive image of the industry, it is still too broad to address a specific problem such as resource vulnerability. The current literature and practice are therefore deemed insufficient, justifying the proposed research.

The problem statement is hereby articulated as follows:

There is no relevant model or framework aiding South African wine-producing entities in determining their resource vulnerability.

This section established that the preliminary articulation of the research problem is clear and explicitly formulated, and that it identifies a gap in current literature and practice. Furthermore, the research problem has been shown to be significant, important and specific enough to warrant the proposed research. The following section will address the research purpose and objectives, arguing that the research problem, purpose and objectives are all aligned.

1.4 Research purpose and objectives

This section will articulate the research purpose and state the objectives associated with the proposed research. A strong alignment between the research problem, purpose and objectives will be shown, and the meaningfulness of the objectives towards the completion of the project established. All assumptions

and delimitations will be stated. Finally, the expected contribution of the proposed research will be argued.

1.4.1 Research purpose

Hofstee (2006:85-86) argues against the use of research questions if the research problem could be articulated clearly – more so if the research problem could be stated in question form, provided that research objectives could still be derived from it. In light of the above, this chapter will not present research questions, but instead advance towards identifying the research objectives. This sentiment is echoed by Mouton (2001:47).

The purpose of the research is to scientifically and methodically determine to what degree (or if at all) Reformed Curatorship is relevant to resource vulnerability determination in the South African wine industry.

1.4.2 Research objectives

The context in which the objectives are to be derived is somewhat complex and as such deserves a brief explanation. As stated in Section 2.1, the authors of the Curatorship concept are Canadian, and the concept is generic and not adapted to any specific industry. For the purpose of the proposed research, it would be necessary to adapt the concept to emerging market conditions - more specifically, the current conditions faced by the wine industry in South Africa. The broad understanding and structure of the concept will be followed throughout, but different interpretations or operational definitions will determine and contextualise the various constructs used in the instrument. The proposed research will exploit the opportunity to test the shift from a concept to a framework which can be tested in practice.

The objectives can be listed as follows:

- To articulate and explain which elements constitute Reformed Curatorship.
- To develop the concept into a framework by means of a scientifically and methodically derived instrument.

- To perform rigorous pilot testing of these constructs before the actual data collection, in order to perform questionnaire validation.
- To scientifically and methodically determine the correlation between the presence of these elements amongst the units of analysis.
- To scientifically determine the relationship between the constructs from the data collected.

Although these objectives might seem as linear and sequential phases of the proposed research, it is not articulated as such, as the research process is expected to be cyclic. An example to substantiate this point: although the first research objective will be provisionally reached after the first phase, it would only be refined in the subsequent phases and expressed in the conclusion of this proposed research.

These objectives indicate that the process for determining the extent to which Reformed Curatorship's reduction of resource vulnerability is methodical and does not deviate from the scientific method. Furthermore, each objective is crucial in solving the research problem, thereby meaningfully contributing to the completion of the proposed research, and ultimately the qualification. The research objectives were derived from the research purpose, which in turn was derived from the research problem. Accordingly, there is a strong alignment between the research problem, the research purpose and the derived objectives.

1.4.3 Delimitations

By 2015 there were 3 232 wine producers in South Africa (SAWIS, 2016:6). This number dropped to 2 693 producers by 2021 – a 25% drop since 2010 (Wines of South Africa, 2021*b*). According to the not-for-profit organisation Wines of South Africa (n.d.), wine producers fall into one of the three following categories:

- Estate wineries – farmed vineyards which produce their own wine and operate as a single entity. Only certified wine can be branded and marketed under the estate name.
- Producer-cellars (co-operatives) – communal farms which have invested heavily in production equipment. This represents 80% of South Africa's production of pressed wine.
- Independent cellars and wholesalers – buyers of grapes and wines, which they bottle under their own brand name, and grow grapes on their associated farms.

Any stakeholder or role player falling outside these categories will not be involved in the population of the final data collection. However, some experts or role players associated with the South African wine industry who are not producers themselves will be used during the pilot testing of the instrument.

The final instrument will consist only of Likert-scale type questions, which are closed-ended.

1.4.4 Assumptions

The term ‘Curatorship’ and ‘Reformed Curatorship’ used throughout the proposed research will refer only to the concept as established by Le Breton-Miller and Miller (2015). No other context of this term will be used, such as the contexts found in the disciplines of law and the human sciences.

The term ‘resource’ will include all manner of resources (tangible and intangible), capabilities, and the human component (the employee). This is a deviation from contemporary convention in management research, wherein resources, capabilities and human resources are delineated and sub-delineated into micro-aspects. This assumption will hold true for every component of the proposed research. The clarification for this assumption is amplified in Section 5.3. *This assumption is central to the study and should not be underemphasised.*

The term ‘wine industry’ throughout will explicitly refer to the South African wine industry. Any other context will be aptly described.

1.4.5 Expected contribution

The contribution of the proposed research will be two-fold. Firstly, incremental advancement in the field of strategic management, RBV (and, more specifically, Curatorship) can be made, as no previous attempts have been made to adapt the framework to a specific industry, or to develop an instrument based on this concept. Also, no previous attempts have been made to determine the resilience and practicality of the conceptual framework. Le Breton-Miller and Miller (2015:412) affirm the need of further systematic study and exploration of Curatorship in order to provide answers to self-inducing paradoxes within RBV. Not only will the findings of the proposed research translate into theory in its

own right, but it will also provide a theoretical crossroad from which further research questions can be explored, articulating the sub-areas for any future research.

Secondly, the South African wine industry offers an exciting, emerging market platform conducive to a methodical study of Curatorship. Should the findings be positive, implementation could be brought to bear by individual wine producers. The wine industry itself competes for customers and suppliers in no less than five industries – agriculture, cellar operations, manufacturing, trade (which includes catering as well as accommodation) and tourism (Connaught Economists, 2015:13). As no evidence could be found relating to previous studies of Curatorship, it can be assumed that no such study has taken place in the South African wine industry.

The purpose of this section was to articulate the research purpose, from which research objectives had to be derived. The meaningful contribution of the objectives was established, along with evidence of a strong alignment between the research problem, research purpose and the derived research objectives. Assumptions and delimitations were stated, and the expected contribution of the proposed research was specified.

1.5. Preliminary literature review

This section will provide a preliminary review of related literature associated with the proposed research. The purpose of this section is to indicate that the researcher can provide adequate literature on the topic as a basis for the research. Also, the ability to define key theoretical concepts will be displayed, along with the ability to critically evaluate and synthesise relevant literature. Corresponding and opposing views will be explored and referenced evidence relating to the justification of the proposed research will be provided. The proposed research will be demarcated from other research on similar topics. As a whole, adequate substantiation of the literature review will consist of recent and longstanding (but relevant) seminal work.

It should be noted that this preliminary research review will not delineate the fundamental constructs of the instrument but indicate the ability to do so.

1.5.1 The resource-based view underpinning Reformed Curatorship

As noted in Section 2.1, RBV is but one of several outlooks within strategic management which aims to explain competitive advantage, and the maintenance thereof. Other outlooks are acknowledged, but specifically fall outside the scope of the proposed research, as the concept of Curatorship draws its main premise from RBV.

Grant (2010:16) indicates that during the last decade of the 20th century, a significant alteration occurred within strategic management. The emphasis used to be the maintenance of competitive advantage through shrewd, timeous and opportune positioning of firms in their related industries. This line of reasoning was supplanted by a focus towards the innards of a firm, arguing that true sustainable competitive advantage lies within the firm, not in its immediate or removed surroundings (Grant, 2010:16). This inward focus constitutes the principle of RBV.

Some confusion seems to exist in terms of the designation of RBV, as some authors articulate it as a theory, as evolved from just a view, since the 1990s (Mintzberg et al., 2012:291-292). This confusion is compounded by other authors, such as Connor (1991) who uses RBV, the resource-based theory (RBT) and resource-based approach interchangeably. Acedo, Barroso and Galan (2007) argued that the RBT is an umbrella term, consisting of three segments – the RBV, the knowledge-based view and dynamic capabilities. Unfortunately, many authors continue to use the term RBV, including Le Breton-Miller and Miller (2015). It is hereby stated that the term RBV will be used throughout the proposed research, in the context of its original meaning, and RBT, although acknowledged, will be withheld to avoid further confusion.

Curatorship builds upon the RBV inward-looking approach, as alluded to by Le Breton-Miller and Miller (2015:397). RBV originated with the work of Penrose (1959) and was established as a fully-fledged approach (from whence it derives its designation) by Wernerfelt (1984). It was firmly lodged and used as a steppingstone by Barney (1991), preceded and underscored by Hamel and Prahalad (1990) in their work relating to dynamic capabilities (Mintzberg et al., 2012:292). Apart from ambiguities and paradoxes imposed by RBV, Mintzberg et al. (2012:297-299) opine that circular reasoning is dominantly centred on resources – it causally describes what already exists. Furthermore, it provides justification

for resistance to change by managers, as the imperative to change resides in a strategic blind spot (Mintzberg et al., 2012:297-298).

Curatorship seems to address these deficiencies of RBV and provides a dynamic perspective to an otherwise static school of thought. Le Breton-Miller and Miller (2015:397) developed the concept of Curatorship specifically to understand and address the following: “...*the very qualities of some resources that are purported to bring about sustainable rents, paradoxically, also may make them and their rents more vulnerable, that is, less sustainable.*”

The following example illustrates how an intangible resource, in this case a firm’s brand, negatively affected sales out of proportion as a result of one incident of visible misconduct. Volkswagen has established itself through the quality of its automobiles as a dependable, robust brand worthy of a buyer’s trust. The observable oversight by Volkswagen in terms of their ‘Dieselgate’ scandal wiped out years of admirable performance and negatively affected buyers’ perceptions. The effect of this scandal, although not solely responsible for a drop in return on sales, could be noticed when comparing 2014 and 2015 figures. Volkswagen (Volkswagen Group Annual Report, 2015:3) reported their net return on sales before tax ratio was 7.3 in 2014 (prior to the scandal) and fell to -0.6 in 2015 (after the scandal).

1.5.2 Cursory reference to Holism

References made to recent seminal work will be discussed in Section 1.5.3, but one specific exemption is seminal work conducted by Smuts (1926). While erstwhile, its use in the proposed research deserves explanation.

The spirit in which Curatorship was conceived was one of simplicity – a structured simplification from another discipline to address a specific paradox (Le Breton-Miller & Miller, 2015:397). Smuts’ (1926) ‘Holism and evolution’ strongly advocates this genre of reason. The premise of his work is that ‘wholeness’ or holism is a universal phenomenon in nature and the universe, overlapping both scientific and philosophical thought (Smuts, 1926: v). His work was a colossal attempt at reforming 19th century views on every aspect of life – a time he refers to as “...*that great age of limited exactitude*” (Smuts, 1926:16).

Smuts (1926:17) strongly advocates a resumption of thought characterised by variability and pliability of experience and nature, so as to discover the tenets of reality. This specific line of thinking resonates strongly with some fundamental seminal work undertaken (which was articulated much later in the 20th century) in the field of strategic management.

Examples of this ‘resonance’ include (but are not limited to) Grant (2010) and Brown and Eisenhardt (1998). Grant (2010:18) argues that during the latter half of the 20th century, strategic management became less concerned with the making of detailed plans, and more concerned about the pursuit and maintenance of success. Brown and Eisenhardt (1998:3) indicate that the true mettle of strategy is to be found not in its complexity, but in the ability of a firm to craft and implement a robust structure, flexible enough to withstand change instead of resisting it.

Taking these two views into account, one could argue that in terms of strategic management, function becomes of greater import than structure. Smuts (1926:104), when articulating his premises relating to holism, emphasises: *“At the start the fact of structure is all-important in wholes, but as we ascend the scale of wholes, we see structure becoming secondary to function, we see function becoming the dominant feature of the whole, we see it is a correlation of all the activities of the structure and effecting new syntheses which are more and more of a creative character.”* The connection and the value of Smuts’ (1926) work in relation to the proposed research are hereby asserted.

The purpose of incorporating the treatise on holism is to use Smuts’ (1926) type of reasoning to contextualise the constructs and their associated elements which will form the instrument envisaged to conduct the proposed research. The simplicity argued for by Smuts’ (1926) work is rivalled only by its practical application and scientific, methodical reasoning. Evidence of this can be seen in the following statement:

“...the analytical character of thought has a far-reaching effect in obscuring the nature of reality, which has to be carefully guarded against,” (Smuts, 1926:19).

In simpler terms, Smuts’ (1926) work will be used as a beacon to contextualise and merit the reviewed literature and the creation of constructs – ultimately culminating in the preliminary instrument which in turn will represent an attempted measurement of Reformed Curatorship.

1.5.3 Curatorship

Le Breton-Miller and Miller's (2015) conception and argument for Curatorship is based on the premise that museums are mandated to prevent their artefacts from decaying (reducing vulnerability), whilst simultaneously being expected to display these same artefacts to the public (thus increasing their vulnerability). These two opposing concepts, existing in the same space and time, bear great resemblance to the paradox experienced by firms in relation to their resources and capabilities.

As established in Section 2.1, Nerur et al. (2016:1082) concede that strategic management is well-known to 'borrow' from other disciplines. Therefore, the 'borrowing' from the sub-discipline of museum curation is argued to be in line with accepted, conventional research practice in the field of strategic management.

Le Breton-Miller and Miller (2015:397) indicate that the line between resources and capabilities is blurred, and accordingly contend that the term 'resource' should include capabilities as well. The three main challenges posed by resources are resource erosion, ambiguity and misalignment (Le Breton-Miller & Miller, 2015:398). The pillars or 'functions' of Curatorship are preservation, connoisseurship and orchestration, which respectively address each of the aforementioned challenges (Le Breton-Miller & Miller, 2015:398). Preservation prevents the mismanagement or degradation of a resource, connoisseurship combats the ambiguity and misunderstanding of a resource, whereas orchestration addresses misalignment of resources which occurs when conditions or contexts change (Le Breton-Miller & Miller, 2015:398). The constructs for the preliminary instruments will be derived from these functions of Curatorship, but reworked to suit the South African wine industry, and to take into account emerging market conditions.

No evidence relating to further work or scientific testing in terms of Curatorship could be found in the field of strategic management before or since the scholarly musings of Le-Breton-Miller and Miller (2015).

1.5.4 The South African wine industry

By 2015, the South African wine industry directly and indirectly employed approximately 300 000 people (more than 3% of the total work force) and contributed R36.1 billion to the GDP of South Africa (Wines of South Africa, n.d.). South Africa is ranked as the seventh largest wine producer in the world and produces 4.2% of the world's wine (Wines of South Africa, n.d.). More detailed and recent statistics related to the South African wine industry are provided in Chapter 2 (see Section 2.8)

PriceWaterhouseCoopers (2015:21-25) reports five global megatrends which will impact the South African wine industry. These include demographic change, climate change and resource scarcity, technological advances, accelerating urbanisation, and shifts in economic power. These megatrends are defined as macro-economic factors which not only change the future outlook for the wine industry, but also the pace of the expected change (PriceWaterhouseCoopers, 2015:20). Besides the worst drought South Africa is facing in 20 years, production of wine increased per hectare farmed by 4% over the past three years alone (PriceWaterhouseCoopers, 2015:3,32). It can be safely assumed that organisational slack is already stretched thin, and that variations of disruptive change can be expected.

The South African wine industry is an invaluable contributor to the economic welfare of the country and its citizens. It is a serious competitor abroad, despite the added challenges of operating within an emerging market and experiencing adverse climatic conditions. As a diverse industry, deregulated to a completely free market industry since 1997 (Finweek, 2015:29), the wine industry provides an exciting context from which one can explore the potential benefits of Curatorship.

No literature could be found exploring an articulated variation or derivative of RBV in the South African wine industry (see Section 1.3).

1.5.5 Opposing views and demarcation from similar research

No evidence of opposition could be found relating to Curatorship in any literature. However, some fundamental views within strategic management seem to oppose either certain premises inherent to the proposed research, or the manner in which the research is conducted. An explanation of both these opposing views is provided.

The most obvious opposing view relating to RBV is the market-based view (MBV). This view stems from the presupposition that the competitive strategy of a firm should be determined in terms of its position in the marketplace (McGee, 2015). Most scholars agree that, although MBV is the antithesis to RBV, both views should be seen as complementary to one another, and are by nature not mutually exclusive (McGee, 2015). In simpler terms, purposive or incidental evidence of both views could be argued in some way or another in any firm's competitive strategy. The true contention lies in terms of the weighting attributed to either of the views when an industry is in flux (Makhija, 2003; Drouin, Hediger and Henke 2008, as cited in McGee, 2015). As stated in Section 4.1, the proposed research will attempt to determine if Curatorship could lessen resource vulnerability in the South African wine industry – an industry shown to be volatile (*vide* Sections 2.1, 3 and 5.4). Therefore, the proposed research will add to the clarification of this conundrum, and not be impeded by the existing contentions.

The way in which a fair amount of research is conducted within strategic management is by isolating a sub-area within a specific view, followed by some variant of acceptable scientific testing thereof. This proposed research will deviate partly from this approach. Partly, as Curatorship itself is a compartmentalised view with predetermined delineations, but opposing segmentation by grouping resources, capabilities and human resources all under the term 'resources' (*vide* Section 4.4), in line with the spirit of Smuts' (1926) treatise on holism.

The harm in the contested approach of isolation and segmentation lies in the following: although a sub-divided part could be scientifically isolated and investigated, it would never operate within a firm isolated from the other 'parts'. For example, resources are classified under 'organisational capabilities', and sub-compartmentalised within certain categories – tangible, intangible and human (Grant, 2010:127). Although one could scientifically isolate 'intangible resources', and evaluate them in whichever way, one will never find a firm with only intangible resources, or one where intangible resources operate independently from resources which are either tangible or intangible. The proposed research does not seek to disprove segmentation as an accepted research practice, but it does seek to substantiate the value of minimalist compartmentalisation.

1.5.6 Concluding remarks

The preliminary literature review consisted of six parts, of which this section serves to summarise the key points. It was established that RBV is a solid, established foundation from which Curatorship is derived. Originating in 1959 and finding a strong following during the last decade of the 20th century, RBV is a well-researched topic. The inclusion and role of Smuts' (1926) treatise on Holism was clearly explained, and although dated, shown to be relevant in terms of contemporary thinking within the field of strategic management. The basic premise of Curatorship – the conceptual 'borrowing' from another discipline - was established. The pillars of Curatorship were broadly referred to and contextualised. Literature relating to the wine industry indicated that it is a well-defined but volatile industry which provides a significant contribution to South Africa's economy.

The penultimate section provided two main opposing views to the research. These views were explained and shown to be of no impediment to the proposed research. Furthermore, these opposing views also serve as an opportunity for the proposed research to add clarity and value to current contradictions within the field of strategic management, thereby indicating demarcation between the proposed research and other research.

Throughout this section, the ability to provide adequate literature on the topic was demonstrated, along with the ability to define various theoretical concepts. Critical evaluation and synthesis of relevant literature and seminal work was displayed. Corresponding and opposing views were explored, resulting in justification of the proposed research. Further justification for the proposed research stems from the inability to locate literature which either tested or developed the concept of Curatorship or addressed a derived aspect from the RBV in the South African wine industry.

The following section will provide detail on how the constructs of the preliminary instrument will be determined. This critical part of the proposed research will form part of the literature review, therefore deserving a separate explanation.

1.6. Research context

This section will provide information relating to the ontology and epistemology decided upon, relating to the proposed research.

1.6.1 Ontology

Saunders, Lewis and Thornhill (2012:676) define ontology as the subdivision of philosophy within which the nature of reality is being studied. For most phenomena researched in business studies, researchers lean more towards objectivism, although subjectivism should not be discarded outright (Saunders et al., 2012:132). Objectivism could be described as the assumption that entities in a reality reside outside the influence of social actors, whereas subjectivism refers to entities being self-determined by the social actors.

Objectivism will be the ontology relating to this research study. This view accentuates structural facets in management that functions performed by different management teams from different firms are inherently the same (Saunders et al., 2012:131). Subjectivism will only lead to misalignment between the purpose of the research and the interpretation of the results and is therefore discarded as an option.

1.6.2 Epistemology

Epistemology refers to what type of knowledge will be deemed acceptable by research conducted (Saunders et al., 2012:132). The epistemology decided upon for the proposed research will be positivism. This type of epistemology is ideally suited when observable data will be analysed, and correlations sought through statistical analysis. It is a widely accepted practice, when adopting a positivistic stance, to make use of existing theory, and it is ideally suited to a quantitative approach (Saunders et al., 2012:134,162). In light of the research purpose, positivism is seen as a good fit.

1.7 Research design

This section will provide clarity on the research design, specifically relating to its nature, the type and the units of analysis, as well as the units of observation. The choice of research design will be explained,

after which it will be argued that alignment exists between the research purpose and research design. Ultimately, the internal and external validity of the study will be discussed.

As stated in Section 1.6.2, the research philosophy will be positivism, while the research approach will be based on deduction, with quantitative research as the chosen method. The research strategy will consist of surveys, and the time horizon will be cross-sectional. As the purpose of the research is to determine to what degree Reformed Curatorship can reduce resource vulnerability in the South African wine industry, the various constructs of the instrument (survey questionnaire) will be subjected to structured equation modelling (SEM), and correlations between the various constructs would be sought. Therefore, the nature of the research design can be recognised as an explanatory study. This nature of research design is usually associated with research where correlations and relationships are sought between constructs by means of statistical analysis (Saunders et al., 2012:172).

Although the research will be carried out in distinct phases, it is typified as mono-method quantitative. Rigorous pilot testing of the preliminary instrument is envisaged which might exhibit a qualitative slant, but this falls outside the parameters of a mixed-method study. This qualitative slant will be extended to the final phase of the research, where interviews will be held with several industry experts in order to prevent any contextual mistakes or misinterpretations. However, the philosophy relating to a formal qualitative enquiry is not supported and will interfere with the proposed deductive approach. It would also hamper the generalisability of the proposed research.

The reason for deciding upon a quantitative method is purely to adhere to the purpose of the research – to provide a generalisable answer. Saunders et al. (2012:162-163) indicate that quantitative research means that data get collected according to set conventions. This allows the data to be subjected to probability sampling techniques, from which generalisability could be derived. It is hereby argued that the research design and research purpose are adequately aligned.

Wine producing entities could be classified into three categories (see Section 1.4.3). All three categories will be subjected to the research, and the wine-producing entities will be the units of analysis. The unit of observation will be a suitable managerial representative of these wine-producing entities; the cellar master, wine maker, general manager or owner of the wine-producing entity.

Saunders et al. (2012:193) describe internal validity as the degree to which two variables produce a specific outcome. Furthermore, they provide a list of several threats to internal validity. Of all the threats, only 'testing' is foreseen as a hurdle to the research. Saunders et al. (2012:193) describe this threat as the impact of the research on the views of respondents. In order to surmount this obstacle, clarifying sentences with appropriate examples will be added to each construct with specific terms or non-industry related jargon.

The external validity of the study relates to its generalisability (Saunders et al., 2012:194). This issue will be dealt with in Section 8, but it would suffice to say that the study would be conducted so as to be replicable. Generalisability would extend only as far as the South African wine industry is concerned, provided that the foreseen sample sizes are met.

The following section will address the research methodology of the proposed research.

1.8 Research method

This section consists of four parts, each explaining how the proposed research is to be conducted in a systematic and methodical manner.

The research will be conducted in four separate phases:

Phase 1 – The development of the instrument from the literature review, including initial pre-testing.

Phase 2 – Rigorous pilot testing. Units of observation will include industry experts.

Phase 3 – Data collection. Units of observation will exclude industry experts.

Phase 4 – Interviews with selected industry experts to shed light on the results and findings.

1.8.1 Population and relevant sample

As stated in Section 1.4.3, there were more than 3200 wine producers in the South African wine industry by 2016. This will be seen as the population, as the wine-producing entities will be the unit of analysis. Wine-producing entities could be classified in three categories (see Section 1.4.3). All three

categories will be subjected to the research, and the wine-producing entities will be the units of analysis. The unit of observation will be a suitable managerial representative of these wine-producing entities; the cellar master, winemaker, general manager or owner of the wine-producing entity (see Chapter 3, Section 3.4.1 for more detail relating to the aptness of the units of observation).

For SEM to be conducted, a sample of 400 respondents is recommended, with a sample of 285 set as the minimum requirement. A minimum of 30 respondents will be necessary for the pilot testing. Although this is below the recommended number of respondents according to DeVellis (2003:137) and Saunders et al. (2012:266), a precedent for this exists due to the nature of the respondents. Wilden, Gudargan, Nielsen and Lings (2013:88) reported that their research interrogating the link between dynamic capabilities and firm performance was statistically robust, after bootstrapping 91 respondents to 500 responses. This study also employed SEM, and the respondents were at senior managerial level. The similarity to the research concerning Reformed Curatorship in terms of research design provides a credible precedent. Should a minimum sample size of 285 be unobtainable due to any unforeseen reason, an absolute minimum sample size greater than 91 responses will be utilised.

As the units of observation (respondents) cannot be forced to complete the questionnaire, *inter alia*, due to ethical considerations, it is highly unlikely that any form of sampling other than convenience sampling will be used. However, should the kurtosis, skewness, mean and median of the distribution conform to the sample representative of random sampling (thus reflecting a normal distribution), post hoc inferences could be made to the scientific soundness of the convenience sampling method employed. The kurtosis refers to the shape of the ‘arch’ of a distribution and is primarily informed by the ‘tails’ of a distribution, whereas the skewness reflects the degree of symmetry within the distribution (Diamantopoulos & Schlegelmich, 2000:91-92). In a normal distribution, the mode, median and mean will all coincide with a mesokurtic kurtosis and skewness of 0, or close to 0 (Diamantopoulos & Schlegelmich, 2000:92-99).

Throughout, the entire process will be systematic, methodical and replicable. The limitations imposed by the sampling method are quite severe when viewed in isolation. It should be emphasised that the case for utilising convenience sampling will be robust and substantiated. There are a number of factors to consider in this regard.

Firstly, Wilkinson (1999:596) argues that convenience sampling does not disqualify the research outright, but that the usage of a convenience sampling method should be explicitly articulated, and the case strengthened by looking at the defined population and the statistical approach to be followed, as well as the nature of the data. Secondly, the population should be well defined in order to lend credibility to the findings, and the associated interpretations (Wilkinson, 1999:595). The population for the proposed research is well defined. Thirdly, SEM is seen as an extremely robust approach, specifically designed to aid the conversion of a conceptual framework into a model (Kline, 2011:8). Fourthly, the context in which the convenience sampling method is expressed is in line with well-articulated units of analysis (wine producers) and units of observation (wine makers, owners or cellar masters). Fifthly, in order for convenience sampling to add value, an assumption must be made that the sample is in fact representative of the population (Statistics Canada, 2010:88). This assumption shall be argued on the basis of approximately 285-400 respondents and the well-defined population, units of analysis and units of observation. Sixthly, the reason why convenience sampling is chosen stems from the ethical consideration of treating all respondents as volunteers.

Further evidence supporting the use of convenience sampling in business research can be found in Blumberg, Cooper and Schindler (2008:251-253). The authors indicate that concepts, perceptions or abstract ideas which cannot be linked to a common scale, can be proven. Also, should the evidence be logical, methodical and overwhelming, a more sophisticated sampling procedure may be deemed unnecessary. Also, whilst probability sampling is theoretically ideal, absolute probability sampling may only be partially achieved due to inevitable human involvement (Blumberg et al., 2008:252).

1.8.2 Planned field work and data capturing

Barry, Chaney, Stellefson and Chaney (2011:99) provide two criteria to be met before an instrument is developed for research. There must be no existing appropriate instrument, and the researcher should exhibit a clear understanding of scientific literature from which constructs could be developed. In terms of the proposed research, both these criteria are met.

Precedents have been set in terms of utilising a Likert-type multi-item scale concerning RBV-related studies. Two notable examples include studies conducted by Lu, Zhou, Bruton and Li (2010) and Newbert (2008).

The preliminary instrument will be a Likert-scale questionnaire, consisting of approximately nine constructs. Each construct will be derived from the literature, consisting of several questions. The pilot testing of the questionnaire will involve approximately 30 respondents, and Cronbach coefficient Alpha will be used to determine the reliability (internal consistency) of each construct. Should the coefficient be lower than 0.7, the construct will be amended to ensure reliability. The pilot testing will also be used to determine the criterion validity of the instrument. Test-retest reliability will be difficult to measure, considering the proposed research will be a cross-sectional study. Zikmund, Babin, Carr and Griffin (2010:306) indicate that test-retest reliability is mostly applicable to longitudinal studies. Low correlations between first and second administrations of questions might differ due to a change of attitude of the respondent and do not necessarily indicate low reliability.

The manner in which the data will be captured will be with an electronic survey instrument, specifically utilising the LimeSurvey platform. The procedure for data collection (during the pilot testing and the actual data collection phase) will be as follows:

- Respondents will be phoned and asked if they are willing to participate. Contact information to be obtained from a public source (Platter's Wine Guide).
- If willing to participate, an email with a link of the electronic survey will be sent to them.
- Their details will be entered in an informal data base (to track compliance).
- As part of the survey, clarifying information ensuring confidentiality, along with the ethical clearance certificate, will be made available prior to the respondent completing the survey.
- The data will be imported into SPSS, from whence factor analysis, regression analysis and SEM will be conducted.
- To assure anonymity, the units of analysis will be sequenced alphabetically and reversed.

The abovementioned principles were utilised by the researcher in 2014 when research was conducted in the South African wine industry, which yielded a 23% response rate with a paper-based and email

approach. In terms of the population, the required response rate for this research to be successful is 16% - assuming a sample of approximately 400. Complete anonymity was ensured and maintained. Problems from 'gatekeepers' (secretaries or receptionists) were found to be negligible during the 2014 study and are expected to remain as such for the proposed study.

Leedy and Ormrod (2010:92) define validity as the degree to which an instrument measures what it is envisioned to measure, and identify four variants of validity:

- Face validity – the extent to which the instrument seems to measure the desired characteristic. It is subjective in nature and does not provide sufficient evidence of correct measurement as a facet on its own.
- Content validity – refers to the extent to which the instrument accurately measures appropriate proportions of the content domain.
- Criterion validity – the extent to which the results of an instrument correlate with another perceived related measure, notably in terms of a perceived behaviour or personality trait.
- Construct validity – the extent to which a behaviour or abstract notion can be measured, and how it corresponds to empirically-grounded theory.

Face validity will be 'tested' during the pretesting phase of the instrument, and all related findings thereof reported and applied to the instrument. The content validity will be reported on by industry experts, as well as by experts within the field of Strategic Management, also during this initial phase. The criterion validity will be commented on during the analysis phase, where it is predicted that the units of analysis which exhibit strong firm performance are (incidentally) practising some or most of the tenets relating to Reformed Curatorship. Construct validity will be addressed during the data analysis phase of the research.

1.8.3 Data analysis

As stated, factor analysis and SEM will be conducted once all data are collected. SEM refers to a collection of related statistical procedures and, although path dependence and correlation can be proven, causality cannot (Kline, 2011:7). The value of factor analysis and SEM lies in its confirmatory nature relating to hypothesis testing, unless the data are inconsistent with the model, which means that the

model should be amended (Kline, 2011:8). This method of analysis is therefore suited to the research purpose and research design. It should be noted that SEM could determine directionality between constructs but warns that correlation does not imply causality (Kline, 2011:100). A more detailed description of analysis techniques can be found in Chapter 3, Section 3.4.6.

1.9 Outline of thesis chapters

Hofstee (2006:35) explains that by adhering to the classic, traditional structure of a thesis, the thesis becomes more measurable against predictable conventions. Furthermore, Hofstee (2006:35) strongly counsels against a radical departure from the traditional structure of a thesis, describing such a departure as aleatory in nature with little potential gain. The adoption of the classic, traditional structure for this thesis is depicted in figure 1.1 below.

<p>Chapter 1: Introduction</p>	<ul style="list-style-type: none"> • Research topic, background information. • Problem statement, research objectives. • Preliminary literature review. • Research context, research design, research methodology. • Outline of chapters, limitations, ethical considerations.
<p>Chapter 2: Critical review of literature</p>	<ul style="list-style-type: none"> • Nature of review, broad context of literature. • Focused critical review of literature, review of industry. • Contributions.
<p>Chapter 3: Research design and methodology</p>	<ul style="list-style-type: none"> • Assumptions, definitions and hypotheses. • Research context, design and method. • Scale design. • Limitations. • Ethical considerations.
<p>Chapter 4: Research results</p>	<ul style="list-style-type: none"> • Population and sample size. • Scale assessment. • Construct descriptive statistics, group differences. • Correlation analysis, modelling, resultant hypotheses. • Summary of analysis.
<p>Chapter 5: Conclusions and recommendations</p>	<ul style="list-style-type: none"> • Summary of findings, limitations of research. • Conclusions. • Significance of research. • Suggestions for future research.

Figure 1.1: *Outline of chapters and adherence to the classical, traditional thesis structure (adapted from Hofstee, 2006:36).*

The structure of this thesis is traditional in nature, given the research design and field of study. As such, no radical departure is required in terms of thesis structure.

1.10 Limitations

Hofstee (2006:119) indicates that the limitations as derived from the research methodology are the gap between one's methodology and flawlessness. Measured against these criteria, two obvious limitations should be stated:

Firstly, the use of convenience sampling will prevent the research from being fully generalisable. Although the use of SEM, rigorous pilot testing and large samples are envisioned to offset this disadvantage, it is the largest foreseen limitation to the study.

Secondly, the inability to prove causality between constructs will constrain the understanding of Curatorship to some degree.

Thirdly, some response bias could be expected, especially if the respondent is not acquainted with certain terms and concepts. Although the pilot testing will attempt to minimise this specific bias, it is expected.

1.11. Ethical considerations

This section will indicate ethical considerations to be taken into account, how informed consent will be acquired during data collection, and how confidentiality will be maintained.

Leedy and Ormrod (2010:101) point to several ethical principles which a researcher should adhere to. These include protection from harm, informed consent, right to privacy, honesty with professional colleagues, internal review boards, and a professional code of ethics.

All these principles will be adhered to. The nature of the study precludes any protection from harm, and the electronic survey form will include a section relating to informed consent. Confidentiality will be assured by means of encoding the data and storing the raw data with password protection. Not committing plagiarism and truthful reporting of the results, along with replicability of the study will ensure honesty with colleagues. The ethical clearance process and associated certificate needed prior to

the pilot testing phase, as well as the required colloquia, address the internal review boards and the adherence to a professional code of ethics.

Leedy and Ormrod (2010:102) advocate specific inclusions relating to a consent form signed by the respondents, containing the following:

- Brief explanation relating to the research.
- Portrayal of activities required and associated time span.
- The right of non-participation.
- Potential risks.
- Anonymity guarantee.
- Contact details of researcher.
- Contact details of an organisation should there be a complaint.
- An offer to see the end result of the findings.
- Place to sign and date.

All these considerations will be met during any form of data collection and included as part of the electronic survey instrument.

1.12 Concluding remarks

This chapter was a structured blueprint of how a concept could be reworked into a framework tested in an industry. Background information provided a strong foundation from which a working title was derived, and a research problem stated. The research purpose was clearly stated, and related research objectives were derived. Alignment between the research problem, research purpose and research objectives was argued. Assumptions pertaining to the research and certain terms were provided, along with the delimitations and possible contributions.

The preliminary literature review provided evidence that the researcher has a firm grasp of key concepts and is able to critically evaluate and synthesise relevant and seminal work, both longstanding and recent in nature. Justification for the research, as well as demarcation, was argued, proving that a research gap exists.

The ontology and epistemology of the proposed research was justified and provided a context for the research. A solid, justifiable research design was presented, followed by the chosen research methodology, indicating how the research would be accomplished. Anticipated limitations due to the research method were discussed, followed by a brief discourse on ethical expectations, and how these could be met.

Ultimately, this chapter indicated that meaningful knowledge could be scientifically and methodically generated, beneficial both to industry and academia.

CHAPTER 2: CRITICAL REVIEW OF LITERATURE

2.1 Introduction

This chapter will provide a review of related literature associated with the proposed research. As indicated in Chapter 1, this review of literature will indicate the ability of the researcher to define key theoretical concepts, along with the ability to critically evaluate and synthesise literature relevant to the field of study, as well as to the applicable industry. Corresponding and opposing views will be explored and referenced evidence relating to the justification of the proposed research will be provided. As a whole, adequate substantiation of the literature review will consist of recent and longstanding (but relevant) seminal work.

As stated by Durand, Grant and Madsen (2017:7): “*An important character of strategic management as a field of study is its emphasis on practical application.*” This literature review will conform wholly to the above, as the purpose of this review is two-fold – firstly, to achieve the first research objective (articulation and explanation of the elements constituting Curatorship), and secondly, to outline the constructs to be used in the instrument for the intended research.

Two different genres of research gaps were identified – theoretical gaps within RBV from which its major criticisms are spawned, and a functional gap within the wine industry. It will be shown how Curatorship, specifically in its reworked form, could realistically contribute to the filling of these gaps.

A concept-dependent contextual research strategy is employed in the critical review of the literature. This strategy has two implications. Firstly, the focus is more on the concept of Curatorship than on the wine industry, as the industry will merely serve as an adequate vehicle for the testing of the concept at a later stage. Secondly, although the initial positioning of Curatorship will make use of the funnel method (Hofstee, 2006:96), the bulk of the critical review will examine the work cited by the original authors of Curatorship – Le Breton-Miller and Miller (2015). The premise is that the theoretical foundation of Curatorship necessitates critical review, as any flaws would have a compounding effect after the development of the instrument. Regarding the South African wine industry, its immediate importance resides in being a contributory industry, feasible for testing the concept.

It should be noted that throughout the entire review, the author will utilise a capital letter when referring to Curatorship (the concept). Although little precedent for this could be found, it is purely done to avoid any form of ambiguity on behalf of the reader.

The review of literature will commence with a reiteration of the origin of Curatorship. Subsequently, it will be shown how, why and where Curatorship is positioned within the discipline of strategic management, and how the first genre of research gaps is addressed. Curatorship will be dissected, and the related literature underpinning the concept's structure evaluated. Literature relating to the South African wine industry will be discussed.

2.2 Curatorship: A reiteration of its origin

As stated in Chapter 1, Curatorship is a concept that aims to prevent the erosion of resources within a firm. This concept, developed by Le Breton-Miller and Miller (2015), seeks to address a specific paradox. This paradox is that the same resources leading to above-average rents become more vulnerable over time, rendering the above-average rents temporary (Le Breton-Miller & Miller, 2015:397). This in turn will *not* lead to the holy grail of strategic management – sustainable competitive advantage. The main argument is not the causation of sustainable competitive advantage by preventing resource erosion, but rather to eliminate that which detracts from sustainable competitive advantage.

The concept itself is based on the basic principles of curation of artefacts in museums. Although it might seem outlandish to use principles of another discipline, Nerur et al. (2016) argue that the utilisation of principles from other academic disciplines is both an accepted practice and highly prolific. In fact, this act is abundant within the realm of strategic management, as echoed by Durand et al. (2017:6), who state that strategic management “*[I]n addition to borrowing heavily from economics, sociology, and psychology, it has imported concepts and theories from political science, evolutionary ecology and biology, systems science, and philosophy,*”. Arora, Gittelman, Kaplan, Lynch, Mitchell and Siggelkow (2016:4) expand on this list of ‘borrowing’, by adding examples where strategic management imported from disciplines such as anthropology, criminology, geography and linguistics. The idea of ‘borrowing’ from other disciplines can thus safely be accepted as valid and conventional within the field of strategic

management. This idea can also be considered contributory to the discipline of strategic management, as precedents for this clearly exist.

But could the concept of Curatorship be ‘too simple’? Miller (1993) argues that successful firms strive for simplicity, but if the firm becomes ‘machine-like’ instead of ‘organism-like’ it will lose flexibility and adaptability, whilst developing apathy and inertia. Simplicity (referred to by other authors as ‘competitive simplicity’) seems to work well in a stable environment but becomes destructive when external changes are experienced (Miller, 1993:134). Connelly, Tihanyi, Ketchen, Carnes and Ferrier (2017) studied the positive correlation between firm performance and ‘competitive complexity’ and found that competitive complexity caused short-term harm, but positive long-term performance (Connelly et al., 2017:1169). Albeit vague, they advise firms to pursue a ‘careful balance’ between competitive simplicity and competitive complexity (Connelly et al., 2017:1170).

This chapter will argue that Curatorship consists of simplicity in the form of reduced complexity, not simplicity as an arbitrary panacea in itself. Although Curatorship itself is simplistic enough to understand, its purpose is not to spawn simplicity, but to prevent resource erosion. This in turn does not necessarily lead to firms developing competitive complexity repertoires – it merely provides them the option to do so, with non-eroded resources to boot.

Mintzberg et al. (2012:297) argue that RBV is a positive vessel which allows firms to correctively adapt to changing circumstances. The following section will argue not only why Curatorship falls under RBV, but how it constructively contributes to the pilotage of this vessel.

2.3 The resource-based view underpinning Curatorship

Chapter 1 provides a comprehensive argument relating to the positioning of Curatorship as part of RBV. The purpose of this section is to expand on the arguments presented in the previous chapter. In summary, it was shown that RBV was part of a shift within strategic management towards the firm itself, not only its relative position in a market or industry. Although some scholars have started to use the term ‘resource-based theory’ instead of ‘resource-based view’, a delimitation was made for this specific study to utilise ‘resource-based view’ – as it is used by the creators of Curatorship and will be used throughout this research to dispel any ambiguity.

Furthermore, a short history of RBV is provided, which was started by Penrose (1959) and evolved, thanks to Wernerfelt (1984). It reached notoriety with Barney (1991) and has been expanded upon ever since. Durand et al. (2017:6) refer to RBV as part of ‘the theory of the firm’ research stream which rose to great heights between 1994 and 2000. RBV is a well-established subset of strategic management which has formed a starting line for an acknowledged genre of research related to strategic management.

It was also argued that the combination of resources and capabilities under the term ‘resources’ provides a constructive departure from typical resource-based scholars, who not only endeavour to keep these two concepts separate but continue to subdivide them into different categories. Le Breton-Miller and Miller (2015:397) explicitly state that for the purpose of their study, it would not make sense to draw a distinction between resources and capabilities, as the lines between them become blurred when investigating the whole. Also, it is implied that the same forces causing erosion to resources would cause erosion to capabilities. This argument provides a much-needed dynamic view to RBV.

Finally, it was argued that Curatorship addresses three of the more serious criticisms of RBV – that RBV is a static view, that it is based on circular logic (causally explaining existence of what can be observed) and that it provides rationalisation for managers to defy change on the grounds of inimitability. Despite these criticisms, Mintzberg et al. (2012:297) stipulate that even the greatest critics of RBV have acknowledged the immense value RBV added to the field of strategic management.

Furthermore, recent trendy strategic management literature focusing on ‘strategic openness’ – where firms counter-intuitively open their resources to competitors, such as Tesla sharing their battery technology in order to gain a competitive advantage – bases its measurement models and assumptions on RBV-lore (Alexy, West, Klapper & Reitz, 2018:1706). Thus, RBV is not an ‘older’ form or school of thought within the realm of strategic management, but rather a school of thought experiencing incremental evolutionary change. Alexy et al. (2018:1705), in their article modelling strategic openness, acknowledged:

“Our main finding is that the better-known forms of firms voluntarily forfeiting control over valuable assets can be explained by our model that builds on core assumptions of the RBV.”

An argument is thus made that Curatorship contributes to RBV where RBV is an *evolving* school of thought within strategic management, as opposed to a static, archaic mode of thinking or, even worse, a school of thought which outlived its scientific utility.

Although the purpose of Curatorship is not to unshackle RBV from its criticisms, it does, however, provide a more dynamic view, has a non-circular logic pattern and vehemently opposes any form of ambiguity. Curatorship thus positively fills three theoretical gaps of RBV as a secondary contribution.

Andersen, Jansson and Ljungkvist (2016:371) indicate that Barney (1991) created a premise for the RBV based on two factors – firstly, that the distribution of resources between firms were not homogenous and, secondly, that resources are not necessarily mobile. Although Le Breton-Miller and Miller (2015) do not set out to prove this premise, neither do they disprove it. If anything, the spirit with which Curatorship was conceived *expands* on the premise of Barney (1991) - it actively provides a blueprint on how to conserve resources.

It is thus argued that RBV is a solid umbrella subset of strategic management. Not only has it been argued why Curatorship is positioned as part of RBV, or that Curatorship itself is based on assumptions supported by RBV, but that it provides a positive contribution to RBV theory, with the explicit understanding that RBV is an evolving school of thought within the realm of strategic management.

This section provides a basic summary of RBV, as stated in Chapter 1. It expanded on its criticisms and clearly indicated the contribution by Curatorship to RBV theory. The following section will be a critical review and dissection of Curatorship itself.

2.4 Understanding Curatorship: A critical deconstruction

Thus far, the origin of Curatorship has been reiterated, followed by a review of its positioning within, and contribution to, the field of strategic management. This section will provide a critical deconstruction of the concept of Curatorship – a critical review of the underpinning literature to establish if its segmentation conforms to related theory.

Figure 2.1 below graphically depicts the concept of Curatorship. Three main vulnerabilities or ‘challenges’ related to resources are identified – erosion, ambiguity and misalignment. To address these main challenges, three matching preventative functions were identified – preservation, connoisseurship and orchestration (Le Breton-Miller & Miller, 2015:398).

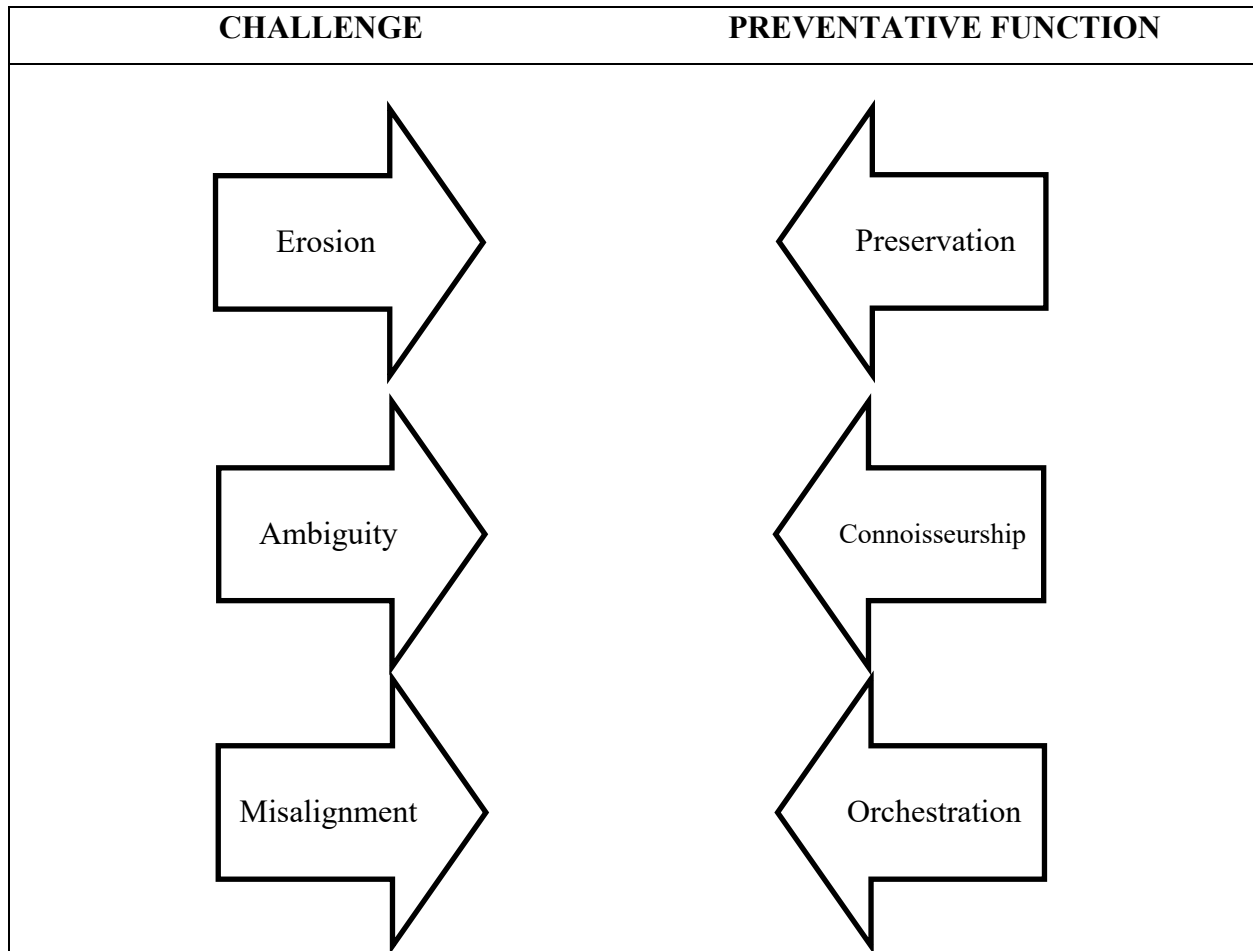


Figure 2.1: *Three main challenges and matching preventative functions.* (Adapted from Le Breton-Miller & Miller, 2015:398).

Each of the three main challenges is subdivided, which in turn is addressed by subdivisions of the preventative functions, as can be seen in Figure 2.2 below.

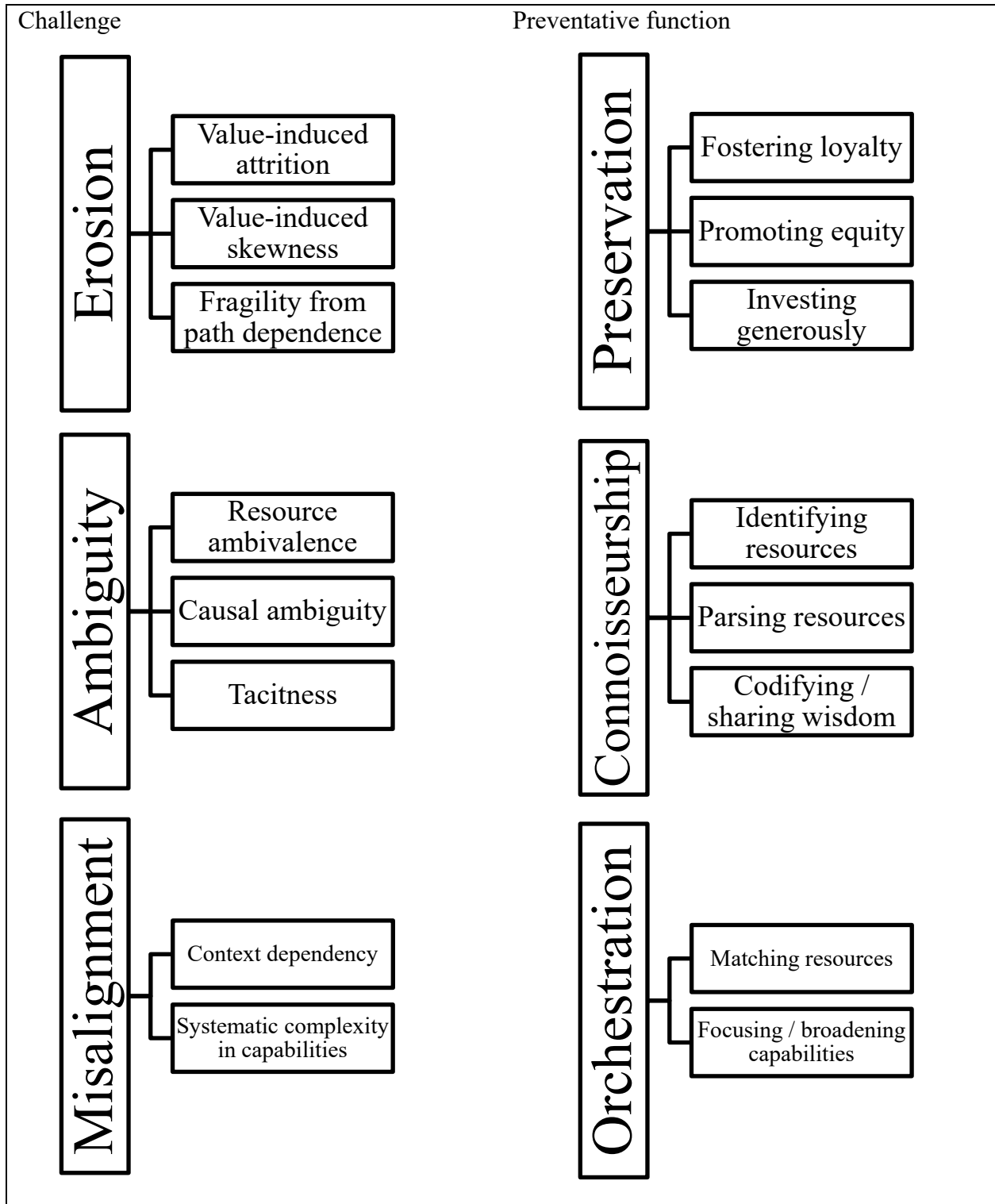


Figure 2.2: Subdivided challenges with corresponding preventative functions (Adapted from Le Breton-Miller & Miller, 2015:398).

The following subsections will consist of a critical review of the literature which underpins the main challenges and their associated subdivisions.

2.4.1 Erosion

Erosion as a studied subject within the confines of strategic management has received scant attention (Rahmandad & Repenning, 2016:649). In an article dedicated to address the dearth of knowledge, specifically in terms of capability erosion, Rahmandad and Repenning (2016:650) argued that erosion plays an integral part in competitive outcomes, specifically where eroded capabilities led to eroded resources and ultimately suboptimal results and performance. Their main findings were that erosion was more prevalent in situations which required unfavourable temporal trade-offs, and where resource ambiguity (articulated as ‘resource fungibility’) was commonplace (Rahmandad & Repenning, 2016:655). In terms of the Curatorship model, this might indicate that there might be an overlap between erosion and ambiguity, which might lead to the one construct being subsumed by the more dominant construct, whichever one it might be. Of greater import is that they argue that erosion is a much misunderstood and oftentimes ignored variable within strategic management.

Le Breton-Miller and Miller (2015:399) initiate their view on erosion with an absolute definition – that without any form of constructive intervention, erosion will occur due to damage brought on by the immediate environment, a form of thievery or war. They then proceed to create a more palatable context from whence erosion can be approached – that resources become prone to erosion as they become older and, due to changes in circumstances, become less relevant.

The three subdivided challenges of erosion highlighted by Le Breton-Miller and Miller (2015:399) - value-induced attrition, value-induced skewness and fragility from path dependence - all conform to the paradox expressly stated as their main premise, as discussed below. This premise states that the same resources that produce above-average returns become more prone to erosion, which in turn engenders a shift from sustainable above-average rent production to temporary above-average rent production. This premise was based upon the reasoning that resources are integral in the generation of rents by a firm (Barney, 1991, as cited by Le Breton-Miller & Miller, 2015:399), and that customer preference or competitor behaviour might strip a firm of some of their resources (Porter, 1996, as cited by Le Breton-

Miller & Miller, 2015:399). Both reasons for this argument are scientific, as they are based on celebrated seminal work, which in turn is widely accepted as convention.

This premise provides a well-founded backdrop to a critical review of the challenges and their associated subdivisions.

2.4.1.1 Value-induced attrition

Value-induced attrition is defined as the ability of a resource, after crossing a certain threshold of performance, to appropriate rents for itself at the expense of the firm (Le Breton-Miller and Miller, 2015:399). This definition seems to apply to individuals only, as the following sub-challenge, value-induced skewness, refers to a collective unit within a firm.

Le Breton-Miller and Miller (2015:399) use the research by Malmendier and Tate (2009) and Coff (1999) to initiate their argument that human resources are inclined to cause this value-induced attrition.

Malmendier and Tate (2009) empirically proved that ‘superstar CEOs’ underperform for a period of three years after achieving industry awards or some form of celebrity status. The main reason provided for this is a shift in the individual’s focus – such as authoring books, attending conferences or directorships at other firms or institutions.

Absent from the Le Breton-Miller and Miller (2015) value-induced attrition argument is the fact that self-promoting behaviour, coupled with earnings management, leads to value destruction which in turn is only limited by solid governance driven by strong shareholder rights. Initially, this might seem to be a cardinal omission. However, as celebrated individuals become more sought-after by other firms, Le Breton-Miller and Miller (2015:406) indicate that the danger lies in the exit of these individuals from the firm, as much as their subsequent underperformance when retained. The argument is that these individuals enjoy increased bargaining power within the firm, when retained. It should be noted that the ‘bargaining power’ implied by Malmendier and Tate (2009) refers specifically to appropriation of immediate perks by the individuals themselves.

Coff (1999) argues that the resource-based view does not possess a reliable function to determine rents appropriated by the firm and proposes that the bargaining power of employees could be used to determine rent appropriation, not necessarily rent generation (Coff, 1999:122). This treatise of Coff (1999) directly questions what is understood under the term ‘resource-based advantage’ and, ultimately, sustainable competitive advantage, using the capabilities and limitations of the bargaining power of an employee as a springboard for the argument. Coff (1999:126) establishes that managers have more bargaining power due to their position by default.

The link between Coff (1999) and Le Breton-Miller and Miller (2015) is that employees cannot apply bargaining power without a credible threat of exiting the firm (Coff, 1999:123). This confirms and contextualises the argument of Le Breton-Miller and Miller (2015). A celebrated individual, especially one occupying a managerial position, would at least be able to create a plausible perception that an exit from the firm could be probable, thereby increasing the feared power of bargaining.

Another factor involving value-induced attrition stems from hubris (Le Breton-Miller and Miller, 2015:399). The work used to support this premise was from Hayward and Hambrick (1997), who focused on CEOs and argued that there are tell-tale signs of hubris. They admit that hubris itself cannot be measured but alluded to grossly inflated salaries as one of several yardsticks. The focus of the work conducted by Hayward and Hambrick (1997) is extremely narrow, as it measures hubris of CEOs by inflated prices paid for acquisitions by the said CEOs. Their points are scientifically argued, but the main *motif* of the article is more removed from Le Breton-Miller and Miller (2015) than the other work reviewed thus far.

There appear to be three links to the argument of Le Breton-Miller and Miller (2015). Firstly, the destruction which could be caused by hubris is immense (Hayward & Hambrick, 1997:120). Secondly, media attention seems to play an unusually large role in hubris and, thirdly, destruction caused by hubris was always accompanied by poor board oversight or governance (Hayward & Hambrick, 1997:120-121).

Although the work by Hayward and Hambrick (1997) is conducted from an agency theory point of view, and the focus of the work is extremely narrow, it does support the premise that no good can come from

hubris, as determined by Le Breton-Miller and Miller (2015). However, it is established that hubris cannot be measured *in situ*, thus using a construct to measure hubris for the proposed research instrument will have to be revisited, as reliable measurement seems implausible.

This section confirmed that a celebrated individual could lead to erosion of resources and capabilities – both inherent in the individual or connected to him or her. Indeed, as eloquently stated by Le Breton-Miller and Miller (2015:399):

“...human resources may be subject to multiple sources of erosion, in part because the resource itself can manipulate its own value.”

This erosion, related to value-induced attrition, could manifest itself in a myriad of ways – passivity or inaction of the firm leads to increased bargaining power, loss of commitment or focus by an individual due to other non-core commitments, active underperformance and appropriation of rents with a perceived (but non-real) ability to increase or contribute to rent generation. In all cases, it seems as if directed oversight diminishes damage caused by these manifestations but cannot completely prevent it. However, while hubris is too difficult to measure, it is acknowledged as a destructive force.

The premise that value-induced attrition leads to erosion forms a rational argument, as long as it is explicitly understood that this only refers to an individual employee. The following section will address value-induced skewness, which deals with a group in a firm.

2.4.1.2 Value-induced skewness

This form of erosion refers to situations where one or more entities within a firm absorb more resources at the cost of other entities within the firm (Le Breton-Miller & Miller, 2015:399-400). Value-induced skewness refers to over-allocation of resources to favoured subunits within a firm, which create an environment leading to the erosion of other resources. The example utilised refers to innovative companies spending too much on research and development functions, cost leaders focusing on operating processes and differentiators over-valuing sales and demonstrative expertise at the cost to other departments (Le Breton-Miller & Miller, 2015:400). Erosion takes place as value generated by these

entities skews the attention and resources allocated to them, which leads to a loss of resilience (Le Breton-Miller & Miller, 2015:400).

Although not initially quoted as a source, Le Breton-Miller and Miller (2015:406) later refer to Holcomb, Holmes and Connelly (2009) to back up their premise related to value-induced skewness. Holcomb et al. (2009) argue that resource ‘bundles’ are deployed, thus resources mixed with capabilities, not resources singularly on their own. This resonates strongly with a main premise of Le Breton-Miller and Miller (2015:397) who explicitly do not distinguish between resources and capabilities for this very reason.

Holcomb et al. (2009) measured the deployment of resource ‘bundles’ by American football coaches whose teams participated in the National Football League (NFL). Although the limitations of this study were clearly stated, three arguments convincingly link their work to that of Le Breton-Miller and Miller (2015).

Firstly, during the specific space in time that resource ‘bundles’ are deployed, it is done within a zero-sum game system (Holcomb et al., 2009:465). This alludes to reality experienced by departments within a firm, where it feels as if they need to ‘fight’ or ‘earn’ their share of resource allocation in a zero-sum game context.

Secondly, the quality of the resource is determined by its potential to create value, not its productivity (Holcomb et al., 2009:462-463). This provides a sound argument against support departments which seem to experience a feeling of neglect if they perceive themselves distanced from the firm’s core activities.

Thirdly, value could be limited or even destroyed should resources be used too far from their intended purpose or be a bad contextual fit with other resources ‘bundled’ with them (Holcomb et al., 2009:460). This specific argument does not have a direct bearing on value-induced skewness, but on a broader argument which will be discussed later on.

Le Breton-Miller and Miller (2015:400) make use of the landmark treatise on organisational learning produced by Levitt and March (1988) to indicate that superstitious learning is when incorrect causes are

identified which may lead to certain outcomes. Nowhere in this section of the article does it specifically refer to units in a firm experiencing this phenomenon, but only to individuals (Levitt & March, 1988:325). It seems too far removed from the purpose Le Breton-Miller and Miller (2015) strove to fulfil, and this reference relating to this particular point is therefore discarded.

Upon further inspection, however, Levitt and March (1988) became a treasure trove of resonating pieces of information which not only support the concept of value-induced skewness, but also actively contribute to the concept itself. Firstly, behaviour stems from logic induced by appropriateness, not logic spawned by consequence (Levitt & March, 1988:320). Associated with this is that routines are engrained more by experiences than adapted to an anticipated future, and that behaviour within organisations hinges on the relationship between observed outcomes and associated ambitions towards those outcomes within a firm.

To contextualise this with value-induced skewness, just as ‘star’ departments will not ‘fight’ greater resource allocation, neither will the support departments resist smaller resource allocations, despite an overall destructive outcome. If this wrongful allocation persists, the different departments will rather strive to adapt to it than try to change it. General behaviour will lead to major catastrophe should managerial ambitions expect ‘star’ departments to perform well, which initially they would, should they receive the lion’s share of resources and attention. This will not only erode resources, but also destroy any form of intra-firm self-corrective behaviour advocated by complexity theorists.

Furthermore, Levitt and March (1988:322) argue that when favourable outcomes are experienced by a group despite outdated processes or destructive practices, that group will not be able to see their processes as outdated or invalid – they would persist with them and ‘learn’ how to utilise those processes more ‘effectively’. This concept was termed the ‘competency trap’. This would ultimately have a detrimental effect on the firm itself and erode the capability of a department to ‘learn’, which directly erodes the dynamic capability of the department. Dynamic capability refers to the ability of an entity to develop new capabilities (Helfat & Peteraf, 2003:999).

Lastly, Levitt and March (1988:331-334) state that the intra-firm ecology or habitat in which learning takes place by subunits creates complexity on such a scale that even relatively simple ‘lessons’ are

complex to understand. Also, it becomes almost impossible to predict how or at what rate different departments will learn different lessons, let alone create new processes of their own and implement them to the benefit of the organisation.

Levitt and March (1988) contribute an additional factor to value-induced skewness. When value-induced skewness develops, not only will the firm as a complex 'organism' not correct itself, but it will also erode the ability of departments to birth new capabilities, and create an environment in which wrong, aged or invalid processes are chased with greater vigour. This in turn will speed up erosion of other resources in a regressive helical fashion, inducing larger wrongful resource allocations, which spawned this cycle initially. One can thus state that value-induced skewness will exhibit some form of velocity and direction, culminating in a regressive helical cycle - as opposed to value-induced attrition, which seems to exhibit linear properties.

It should be pointed out at this stage that certain actions, such as the physical allocation of resources to departments, can be seen as a zero-sum game (Holcomb et al., 2009:465), and the immediate consequences of value-induced skewness will therefore happen within a non-zero-sum game system. This means that erosion caused by the departments' inability to self-correct, persistence of wrongful behaviour and direct erosion of the departments' dynamic capability will not result in a 'positive' outcome elsewhere within the firm.

The last reference cited by Le Breton-Miller and Miller (2015) to construct their value-induced skewness argument, was research done by one of the co-authors of *Curatorship*, Miller (1993). This treatise explains the dangers associated with simplicity as a form of architecture within a firm, and supports the basic premise of value-induced skewness within the context in which it was presented.

This section critically reviewed two specific works on which value-induced skewness was based. Holcomb et al. (2009) provide some bearing, but the initial use of Levitt and March (1988) by Le Breton-Miller and Miller (2015) was out of context. However, by exploring other points made by Levitt and March (1988), a clearer profile of value-induced skewness could be constructed. Lastly, previous work from one of the authors of *Curatorship* also underpins the initial premise of value-induced skewness. The following section will explore the last sub-challenge associated with erosion.

2.4.1.3 Fragility from path dependence as 'intangible delicateness'

Le Breton-Miller and Miller (2015:400) describe fragility from path dependence as intangible resources (such as brand, reputation and corporate culture) which develop over a lengthy period, thereby consuming large amounts of investment and time. The positive contribution of these resources is that they create near-impenetrable barriers against imitation – one of the basic viewpoints of RBV (Barney, 1991, as referred to by Le Breton-Miller and Miller, 2015:400). Paradoxically, as these intangible resources as such are exceptionally vulnerable, the same barriers to imitation they create serve as barriers to resuscitation, should they be destroyed.

The contribution of the first author referred to by Le Breton-Miller and Miller, Arthur (1989), is problematic for two reasons. Firstly, Stack and Gartland (2003:487) state that this work by Arthur (1989) is widely regarded as one of two seminal works relating to path dependence. However, the reference to Arthur (1989) by Le Breton-Miller and Miller (2015:400) is out of context and is therefore discarded. Although Arthur (1989) convincingly explains and demarcates what path dependency entails, the focus for this work revolves around the adoption of technology by the market – thus completely out of line with the resource-based view. This does not support the examples listed by Le Breton-Miller and Miller (2015). It also describes path dependency as the adoption of sub-optimal processes or technology by the market due to a seemingly early advantage enjoyed by one product over another.

Stack and Gartland (2003:489) explicitly state that the original path dependence theory referred to by Arthur (1989) relates to incidents falling outside the control of the firm. Two new concepts were proposed, path creation and mindful deviation (Stack & Gartland, 2003:489), but neither of these conforms to this specific sub-challenge context created by Le Breton-Miller and Miller (2015:400).

The second work utilised by Le Breton-Miller and Miller (2015:400) and associated with their argument is from Dierickx and Cool (1989), which offers greater promise. Dierickx and Cool (1989:1505) reiterate the argument made by Barney (1986:1232) that some resources are non-appropriable – reputation being the example used. These resources are quirky by default, and although it is established that they consume time and investment to be cultivated, they cannot be obtained on the open market (Dierickx & Cool, 1989:1505). Therefore, they can only accrue inside the firm, and one can argue that

as long as a firm survives, some accrual of intangible firm-specific resources will take place, regardless of what benefit could be derived from them. Indeed, Dierickx and Cool (1989:1506) convincingly argue that if a firm has non-appropriable assets, it can deploy them as a fixed supply, whereas firms which do not possess these non-appropriable assets are condemned to 'build' them.

Dierickx and Cool (1989:1507-1509) explain why, even if these non-appropriable assets could be imitated, there are certain challenges by the imitator which must be met *during* the imitation process. These are time compression diseconomies (closely associated with the law of diminishing returns); asset mass efficiencies (proliferation of success when success is already enjoyed); interconnectedness of other assets (some capabilities can only be leveraged with other seemingly unrelated but necessary capabilities in place); and causal ambiguity (the inability to correctly identify relevant characteristics of non-appropriable assets, or to influence them). Referring specifically to causal ambiguity, Dierickx and Cool (1989:1509) confidently state: *"Clearly, imitation of those [non-appropriable] stocks by other firms becomes next to impossible."*

Dierickx and Cool (1989:1509) do caution against successful substitution of non-appropriable assets, which might render the non-appropriable assets of a firm irrelevant by a committed competitor. No anecdote for this eventuality was offered.

Le Breton-Miller and Miller (2015:400) utilise the work of Gillespie and Dietz (2009) to assert that intangible resources exhibit an asymmetric quality – the investment of energy, time and money is unequal to the vulnerability it possesses. Although this was clearly implied by Gillespie and Dietz (2009), their work centres on trust repair within an organisation after an organisation-level failure. Again, Le Breton-Miller and Miller (2015:400) cited their work out of context, and it will therefore be discarded. However, multiple authors thus far in the section have already proved the premise from Le Breton-Miller and Miller (2015:400).

Overall, the basic premise of Le Breton-Miller and Miller (2015:400) is supported – that intangible resources are difficult to imitate, and this makes it difficult to 'resurrect' them if destroyed. Nowhere could supporting evidence be found that intangible resources were completely destroyed. Evidence abounds relating to how, once below certain critical thresholds, damage to certain intangible resources

caused the demise of a firm – directly or indirectly (Gillespie and Dietz, 2009:127). It is hereby argued that the premise that the repair of intangible resources reflects immediate action and, although it cannot really replace the longitudinal re-growth thereof, it might steer the firm away from a critical implosion.

The term ‘fragility from path dependency’ is questionable, as it does not refer to path dependence in the original sense indicated by seminal work on the topic. The existence of initial, linear path dependency-like attributes of intangible resources could be argued, but this provides for misleading semantics at best which not only would complicate Curatorship as a concept but would be contrary to the spirit in which it was conceived. It is hereby also argued that the alternative, interchangeable term used by Le Breton-Miller and Miller (2015:400-401), ‘asymmetric fragility’, also be discarded, as it could apply to other phenomena in various other disciplines.

It is hereby proposed to substitute the term of ‘fragility of path dependence’ with ‘intangible delicateness’. As this sub-challenge does exist within the concept of Curatorship, and applies to the ‘erosion’ part thereof, the term ‘resource’ is implied. This aligns with the previous two sub-challenges, neither of which made use of the term ‘resource’, although it is clearly implied in a tacit manner.

This section critically reviewed the original literature used by Le Breton-Miller and Miller (2015:400-401) to assert its premise relating to fragility of path dependence. It was found that the work of Arthur (1989) and Gillespie and Dietz (2009) were used out of context. However, Dierickx and Cool (1989) not only provided solid theory to support the premise of Le Breton-Miller and Miller (2015:400-401), but it also clearly explained why intangible resources (referred to as ‘nonappropriable assets’) are inherently inimitable but cautioned that they can be substituted. It was also argued that intangible assets could not be destroyed, although severe damage suffered by intangible resources might lead to the demise of a firm. Once intangible resources suffer damage, immediate reparations could prevent critical demise of other organs within the firm or in the industry it operates in, but nothing could replace the longitudinal growth thereof – if the firm survived, intangible resources would have to be regrown. Ultimately, it was argued that the term ‘fragility of path dependence’ be replaced with ‘intangible delicateness’.

The following section will address the main challenge of ambiguity, and its related sub-challenges.

2.4.2 Ambiguity

Le Breton-Miller and Miller (2015:401) list ambiguity as the second main challenge of Curatorship. It is subdivided into three distinct categories – resource ambivalence, causal ambiguity and tacitness.

Central to the RBV is the premise that ambiguity exists as a form of uncertainty – on the one hand, it protects the firm’s intangible resources from imitation, but on the other hand it invokes uncertainty relating to sources of competitive advantage within the management team itself (Barney, 1991). The purpose of exploring the three sub-challenges associated with ambiguity is not only to support the premise related to Curatorship, but also to see if ambiguity, by its mere existence, is hurtful to the firm.

In an extensive longitudinal study of strategic concepts relating to strategic sensemaking, Jalonen, Schildt and Vaara (2018:2794) discovered a similar (and dangerous) paradoxical quality of ambiguity. From a linguistic and cognitive point of view, ambiguity in terms of the actual meaning of a concept, decreases its perceived utility and hinders implementation, but it allows various parties and stakeholders to find common ground, provided they try to make sense of the concept as a team. The indication is that ambiguity as a whole could have a disproportionately negative effect on firm performance in terms of the Curatorship model, as ‘finding common ground’ might be less prevalent in the hierarchies inherent to the units of analyses of this research.

The next three sections will critically comment on the three apparent manifestations of ambiguity within the context of Curatorship.

2.4.2.1 Resource ambivalence

Within the context of Curatorship, resource ambivalence specifically refers to individuals or entities within an organisation (Le Breton-Miller & Miller, 2015:406). The argument is initiated that the source of ambivalence stems from some resources which take time to grow, and their value will only be identified after crossing an arbitrary threshold. Both King and Zeithaml (2001), as well as King (2007), support this, and it conforms to the idea that resource ambivalence is coupled to individuals and entities within a firm. King and Zeithaml (2001:90) refer to this as ‘characteristic ambiguity’.

The second part of the argument specifically refers to resource ‘newness’. The two works used by Le Breton-Miller and Miller (2015:402) to support this argument provided little support. The first work by James (1999) could not be located, probably due to erroneous listing by the work of Le Breton-Miller and Miller (2015:413). The second work by Lavery (1996) was a treatise on the concept of ‘short-termism’ behaviour by managers within a firm and had little bearing on the second part of the argument. It does, however, provide some insight as to why managers are unable to recognise value correctly – decision-making by managers is driven by heuristics inherent to the specific firm, which contains bias. This bias will prevent systematic and rational decision-making to some degree (Lavery, 1996:842). It is hereby argued that this bias also prevents managers, to some degree, from identifying talent or consigning correct ‘value’ to an individual or entity within the firm.

Moreover, Lavery (1996) argues that short-term/long-term trade-offs are unavoidable, and that it is not necessarily ‘wrong’ for a firm to follow a short-term strategy. Thus, if an individual or entity does not contribute to the short-term goals of a firm, how could a manager assign value to him, her or the entity itself? Also, Lavery (1996:847) indicates that the firm’s structure, processes and managerial characteristics determine the accuracy of valuation by managers. This, coupled with the already-mentioned constraints of heuristics and short-term contributions, leads to an argument that managers are by default at a great disadvantage to correctly identify and value individuals and entities.

The third part of the argument is that this ambivalence could lead to the disappearance of experience over a period of time. This is somewhat implied by the work conducted by Fiol (1991), but not explicitly so. This work explored the cognitive process of culture experienced by individuals and units, but not from the managerial perspective. Of some concern is the argument made by Fiol (1991:208) that firms should welcome ambiguity and invest in it.

Fiol (1991) does support the fourth part of the argument – that some individuals create value in one area, whilst destroying value in another area, which will render them ambivalent from a managerial perspective. The same argument applies to an entity within a firm.

This fourth part of the argument has severe implications for managers – if a manager attributes value half-correctly to an individual or entity, the effects will be ruinous in terms of those specific resources.

A positive valuation for only the good work will reinforce negative behaviour, which will be difficult to reverse later, due to higher bargaining power by the individual or entity. Conversely, a negative valuation for the destruction caused by the individual or the entity will negate the good work accomplished by the individual or entity, which will lead to atrophy or exit of the firm.

In summary, resource ambivalence refers to individuals and entities within a firm, though it seems as if the related literature supports the argument more in favour of individuals. The ‘newness’ of such a resource seems arbitrary, but the manager will, at default, be severely constrained to be able to correctly value individuals and entities, due to the firm’s structure, processes, managerial characteristics, heuristics and short-term goals. Lastly, individuals or entities might exhibit dual values, which if half-correctly valued, could cause greater damage than the original non-valuation of resources.

The following section will critically review the second subset – linkage ambiguity.

2.4.2.2 Causal ambiguity as ‘linkage ambiguity’

Most literature on this subject, within the realm of RBV, refers to ‘causal ambiguity’ – which according to Curatorship is a subset of this challenge. Related literature refers to three off-shoots of causal ambiguity – characteristic ambiguity, linkage ambiguity and tacitness (King and Zeithaml, 2001:77). Furthermore, King (2007:168) specifies the difference between causal ambiguity which includes the ambiguity between firms, and intrafirm ambiguity.

These differences could lead to great confusion, as Le Breton-Miller and Miller (2015) see causal ambiguity not only as a subset of ambiguity, but also specifically refer to the internal workings of the firm. Also, most related research sees causal ambiguity as a main theme. It is hereby argued that the main challenge be left unchanged as ‘ambiguity’ but that the second subset (2.4.2.2) be termed ‘linkage ambiguity’.

Le Breton-Miller and Miller (2015:402) state that this genre of ambiguity relates to the link between actions within a firm, and the results it elicits. This specifically relates to processes and capabilities. The argument is made that these ‘linkages’ are ambiguous by their very nature, which in turn creates a barrier for imitation from competitors. However, these ‘barriers’ also prevent certain imitations to

proliferate within the firm. One of the works cited to support this view is Kogut and Zander (1992), but again the premise is not supported.

Kogut and Zander (1992:385-386) state that a firm is a socially-constructed entity. This means that any transfer within a system will be constrained, albeit unintentionally, by human behaviour. Secondly, the type of knowledge to be replicated is divided into two categories – information and know-how. Information is knowledge which is transferred without loss of integrity, assuming the means for deciphering it is known. Know-how is defined as “...*the accumulated practical skill or expertise that allows one to do something smoothly and efficiently,*” (Von Hippel, 1988, as cited by Kogut and Zander, 1992:386).

Thirdly, it might be necessary to imitate either know-how and information within a firm, the two factors involved in this transfer being codifiability and complexity. Codifiability refers to a set of rules which packages knowledge in a way that it is easily transferable within the firm itself (Kogut & Zander, 1992:386), whereas complexity refers to the number of operations necessary to fulfil a function, coupled with the number of parameters defining a system (Pringle, 1951, as cited by Kogut & Zander, 1992:387).

Fourthly, the transfer of knowledge is divided into horizontal transfers - building a similar production unit - and vertical transfers - moving a product from development to production (Kogut & Zander, 1992:389). For horizontal transfers, specific individuals will play an overlapping role, acting as a transfer conduit, whereas higher-order codification would be necessary for vertical transfers.

The fifth factor is that the processes associated in the previous four points are determined by the heuristics of the firm itself, and not by the resources themselves (Kogut & Zander, 1992:389, 392). Thus, it can be seen how difficult it is for rivals to imitate these conditions. The fact that one can assume that they will be imperfect vastly increases the inimitability, as the rival itself will already have processes which grew along heuristic lines, which in turn might or might not be compatible with the target firm's processes. But to imitate or transfer knowledge within a firm is difficult because of different reasons, as the firm's heuristics are already present. This linkage ambiguity becomes relegated to management expecting a transfer of know-how to take place in the same way as information, or a vertical transfer of

knowledge in the same way as a horizontal transfer. It is easy to see the destruction this can cause in terms of resources themselves, although the higher-order resources necessary for this will either be insufficient, or severely taxed. This in turn questions the validity of the assumption that a rival will attempt to imitate an insufficient or ineffective higher-order process, a view supported by Korgut and Zander (1992, as cited by King & Zeithaml, 2001:94).

For the purpose of this research, it is hereby argued that ‘linkage ambiguity’ refers to the ability of management to recognise and employ the correct type of higher-order processes involved with the transfer or imitation of any form of knowledge within a firm, linking knowledge resources to its performance in creation of competitive advantage. It is acknowledged that any attempt of a rival to imitate these processes will be severely constrained, but not in the same way in which higher-order processes within a firm are constrained. Thus, the basic premise changes from higher-order processes not being understood or employed incorrectly to causing damage to other resources, not to itself.

The following section will critically review literature related to tacitness.

2.4.2.3 Tacitness

Le Breton-Miller and Miller (2015:402-403) argue that, due to the abstract properties of tacit knowledge, rivals will find it difficult to imitate. At the same time, these same properties prevent managers from appreciating their value or replacing it if it exits the firm due to non-appreciation. These tacit properties reside in individuals and within entities inside a firm. This sub-challenge is termed ‘tacitness’.

Ironically, some literature which did not support previous premises of Le Breton-Miller and Miller (2015) supports this premise completely. The most notable examples include King and Zeithaml (2001) and Korgut and Zander (1992). The value of tacit skills could be found within some codification or protocol explaining exactly every part of a skillset. The ambiguity stems from the *unawareness* which resides within an individual or group regarding a part or whole of these codifications or protocols (Reed and DeFillippi, 1990:90). Thus, the individual or group would not only find it difficult to communicate their tacit knowledge upwards towards management, but also to peers within the firm. Wagner and Sternberg (1985:439, as cited by Reed and DeFillippi, 1990:91) argue that the inherent properties of tacit knowledge render it unsuitable to teaching or transference.

This places the manager at a disadvantage to accurately determine tacitness, let alone value, as there will be no confirmatory evidence to support any determination. This is further complicated by the finding by Reed and DeFillippi (1990:100) that tacitness remains unobservable and non-codifiable. These authors, however, do propose that ambiguity within a firm will increase linearly with an increase in tacitness (Reed & DeFillippi, 1990:93). Thus, the more tacitness, the more ambiguity.

The problem posed by tacitness is that it spawns ambiguity by its mere existence. Its existence is part of the social fabric of a firm (Kogut and Zander, 1992:385), integrally linked with human behaviour. It is not wholly undetectable – Le Breton-Miller and Miller (2015:402) state that tacitness can be seen in the results spawned by it.

One could argue that an exogenous reduction in ambiguity will not result in less tacitness, but rather in the tactile codification thereof, as in the military, where intrafirm ambiguity easily leads to the loss of life and equipment. This, however, will remove the same barriers to imitation from rivals, which is why military forces around the world generically employ a substitute barrier to imitation – counterintelligence. Even though this might be effective, it is not efficient.

Two arguments are hereby formed. Firstly, tacitness lies on a continuum, and where tacitness is detected, it can safely be assumed that ambiguity is also present. Secondly, as tacitness cannot be quantified, the degree to which tacitness can be managed is fairly low, but the known problems it can lead to - such as non-appreciation of individuals - can be managed preventatively.

Referring to ambiguity as a whole, it was argued that it consisted of three sub-challenges – resource ambivalence, linkage ambiguity and tacitness. Resource ambivalence was determined to relate to the valuation of individuals or entities within a firm, but that ‘newness’ is a non-issue. Rather, the ability for managers to value ambivalent resources correctly is highly unlikely as a default. The assertion that experience erodes as a cause of resource ambivalence was vague, but the assertion that one resource could exhibit both positive and negative properties at the same time was correct, as was the destructive implication of half-correct valuations.

The term ‘causal ambiguity’ was disputed, ironically as it caused ambiguity. The term ‘linkage ambiguity’ was advocated. It was argued that, although linkage ambiguity happens to serve as a barrier

of imitation, the genre of ambiguity which poses danger within the firm is different. If the higher-order processes are employed incorrectly or incorrectly configured, damage to resources can be expected.

Tacitness was largely accepted, as proposed by Le Breton-Miller and Miller (2015:401-402). It was argued that tacitness correlates linearly with ambiguity, and that it is not only an effective barrier to imitation, but also efficient. Although difficult to determine accurately the presence of tacitness by managers, it can be detected and preventative measures can be employed to known problems spawned by the ambiguity it invokes.

Despite the fact that ambiguity within the firm can be a barrier to imitation to rivals, it spawns other problems within the firm, and if not detected or positively managed, it possesses the ability to lay waste all forms of resources. It seems as if ambiguity, just as the case with tacitness, lies on a continuum. It is hereby argued that too much overall ambiguity increases the probability (if not the proliferation) of resource destruction.

Arguments such as those made by Fiol (1991:208) who advocated not only the increase of ambiguity within a firm, but generous investment to support its proliferation, are seen as dangerous and are hereby discarded. Yes, ambiguity is an effective and efficient barrier to imitation, but it is so by circumstance, not design. To artificially increase ambiguity to increase barriers to imitation is a definitive misstep, if one takes into account the number of dangers it poses. Also, just as ambiguity cannot attain an absolute rate of diffusion within a firm, neither can it be completely destroyed. Ambiguity seems to arise from human behaviour and is compounded by the three mentioned sub-challenges. It appears that some form of ambiguity is necessary for certain creative processes or speedy reaction times during a crisis, but this falls outside the scope of this study.

It is argued that some energy should be invested in determining where the ambiguity levels are, and which thresholds within a firm would lead to unacceptable risks and prevalence of resource destruction.

The following sections (2.4.3, 2.4.3.1 and 2.4.3.2) will critically review literature related to the last challenge – misalignment - and its related sub-challenges.

2.4.3 Misalignment

Le Breton-Miller and Miller (2015:403) base their misalignment challenge on the inability to employ resources, or sets of resources, in a cohesive and thematic manner. The premise is that if resources (or complementary sets thereof) are not employed properly to perform a specific function, not only would the competitive advantage of the firm suffer, but also the resources themselves would experience some form of erosion. The literature relating to the two sub-challenges associated with misalignment - context dependency and systematic complexity in capabilities - will be critically discussed.

2.4.3.1 Context dependency

Context dependency specifically refers to gifted individuals, patents or special relationships within a firm (Le Breton-Miller & Miller, 2015:406). The argument is that these resources will perform optimally only if certain conditions exist, and that they become dependent on the context within which they are deployed, creating a challenge.

Black and Boal (1994:138) argue that the internal environment within a firm is as important as the firm's external environment when it comes to the understanding of relationships formed between resources. These relationships can be enhancing, suppressing, symmetric or asymmetric – an extreme case of suppressing of a resource would be its complete destruction, such as a company culture after a merger (Black & Boal, 1994:139).

Holcomb et al. (2009:458) refer to the imperative of synchronisation of resources or resource bundles to achieve competitive advantage. The greater the understanding by the manager of the industry context in which this must happen, the greater the chance of repeated success (Holcomb et al., 2009:459). As resources are not infinitely divisible, the conditions in which resources or resource sets are employed are limited, posing severe challenges for managers (Holcomb et al. 2009:460). The greatest support from Holcomb et al. (2009:461) is the assertion that the way in which resources are employed by a firm is just as important as the resources at its disposal.

These two works support the premise related to context dependency and provide additional insight into the phenomenon of context. Firstly, the internal environment is the habitat in which relationships

between resources exist, and these relationships are dynamic, exhibiting a positive or negative influence in a one-way or reciprocating fashion. Secondly, the nature of resources – their indivisibility – prevents resources from always being employed under optimal conditions. This, however, should not be an excuse for constant sub-optimal resource employment, as consistent sub-optimal employment will result in diminished overall performance, regardless of the quality of resources employed.

Le Breton-Miller and Miller (2015:404) assert that once resources are employed, they become dependent on the context in which they were employed, unless the context crossed an unhealthy threshold into sub-optimality. They cite the work carried out by Priem and Butler (2001) to substantiate this assertion. Priem and Butler (2001:32) refer to the importance of context creation when research is conducted within RBV, and that assertions delimiting the context in which resources are employed as a necessity - the context will provide boundaries which could aid resource investment decisions. Although this does not fully substantiate the premise of context dependency, substantiation was found by the argument of Black and Boal (1994:138) which indicated a dependence by resources on their context.

The true challenge created by this dependency stems from change in the context on which the resources become dependent. If a manager, with great effort, employs a bundle of resources in optimal conditions, and the conditions in which those resources are employed change for the worse, was the initial effort worth the trouble or cost? Regardless of the answer to this question, some damage to the resources or set of resources can be expected. It is hereby argued that volatility associated with the context in which resources are deployed will lead to some damage to the resources employed.

2.4.3.2 Systemic complexity in capabilities

Le Breton-Miller and Miller (2015:406) argue that employment of a complex array of resources makes up a capability, if that capability is used to attain a strategic target. These capabilities are vulnerable, as they are made up from resources, and therefore the cumulative vulnerabilities discussed up until this point will be compounded. Also, interdependencies with other complex capabilities might destroy value, or cease to operate efficiently if the external context changes.

The complexity of capabilities is substantiated by Helfat and Peteraf (2003:998), by specifying that capabilities exhibited a lifecycle of their own, but that they might transform or reinvent themselves

several times before decline can be detected. The interdependent resources necessary for the simplest of capabilities at its initial life cycle stage might include tangible resources in the form of endowments, intangible resources such as know-how and human attributes such as experience and cognition (Helfat and Peteraf, 2003:1000). Thus, the first part of the premise, that a complex array of resources is embedded in a capability, is substantiated.

The second part of the premise holds true if one considers the challenges highlighted in Sections 2.4.1 - 2.4.3. What is lacking from this part of the premise by Le Breton-Miller and Miller (2015:404) is the significant increase in risk of damage to the firm (relative to the risk of damage posed by individual resources) when looking at the complex array of resources intertwined to form a capability, as well as its interdependence with other such complex capabilities.

2.4.4 Implications of the challenges reviewed

The purpose of the critical review carried out in Sections 2.4.1 - 2.4.11 was to establish if the premises of the challenges and sub-challenges were supported by literature employed by Le Breton-Miller and Miller (2015). Before reviewing literature concerning the preventative functions, a succinct consolidation of changes to the 'challenges' related to Curatorship would be necessary. Also, as Le Breton-Miller and Miller (2015:405) explicitly state that all the sub-challenges are not independent from each other, it is argued that some degree of danger to the firm itself should be argued only for each sub-challenge. An exception will be made regarding ambiguity in general.

In terms of value-induced attrition, individuals might enjoy increased bargaining power due to superior performance. This in itself might lead to erosion, but if this behaviour is underpinned by self-promoting behaviour and earnings management, damage to the resource itself, as well as associated resources could be expected. Directed oversight might diminish this, but not prevent it completely. Hubris is difficult to measure, but again, directed board oversight could limit the damage caused. It is argued that the degree of danger associated with value-induced attrition is low, as it mainly involves individuals.

Value-induced skewness is seen as a regressive helical cycle which feeds on itself. This is due to the inability of an entity to correct itself, the competency trap, the increase of complexity to learn lessons and the non-zero-sum game environment in which consequences would occur. It is argued that the

degree of danger associated with value-induced skewness is high, due to the number of resources associated with it, coupled with its self-sustaining, snowballing properties.

Intangible delicateness replaces ‘fragility of path dependence’. Its asymmetric properties compound its vulnerability and, although the resource itself would not necessarily be destroyed, it might result in the destruction of the firm. Also, it only serves as a barrier to imitation, not substitution. Due to the amount of damage it might cause, the degree of damage is argued to be high.

These sub-challenges are grouped under erosion. It should be noted that these sub-challenges do not only erode onto themselves, but can cause, facilitate or speed up erosion of associated resources or the firm itself.

Resource ambivalence was shown to place the manager at a default disadvantage, and that a partially correct valuation of the resource could be more destructive than a wholly incorrect valuation. Although this might render the degree of damage high, it is argued that due to its applicability mostly to individuals rather than entities, this renders the degree of damage it may cause to medium.

Linkage ambiguity was shown to be a different genre of the ambiguity which creates a barrier of imitation to rivals. It can cause damage to other resources, not onto itself. It refers specifically to the incorrect utilisation of higher-order processes by which knowledge is shifted within the firm by managers. It is argued that the danger of damage which can be caused to the firm is low.

Tacitness seems to exhibit a linear relationship with ambiguity and, although difficult to determine, one can detect it by its results. Due to preventative actions which can be employed, it is argued that the danger it might cause to the firm is low.

These three sub-challenges are grouped under ambiguity. Although they exhibit a low-to-medium danger to the firm, it is argued that ambiguity itself is dangerous to the firm. As stated in Section 2.4.2, ambiguity is compounded by its three sub-challenges, and its potential to wreak havoc inside the firm is high. Ironically, any measures used to ‘correct’ damage caused by ambiguity will be rendered ineffective due to the mere presence of ambiguity in the first place. This makes ambiguity surprisingly dangerous.

Regarding context dependency, it was shown that certain resources or resource bundles perform optimally only within certain contexts – contexts which are not always available to a manager. If the degree of sub-optimality is too large, the resources would either be destroyed or cease to perform. However, should these resources be employed in a context which is slightly sub-optimal, it will adapt to the context, but erode if this employment becomes consistent or permanent. The challenge created is that the resources will become dependent on the context in which they are employed, which makes them highly susceptible to changes to that specific context. Also, there seems to be a trade-off faced by a manager – the artificial creation for an optimal context in which to deploy resources does not outweigh the potential damage should the context change. It is argued that, due to the ‘bundling’ of multiple resources, the damage which can be caused to the firm is medium to high, depending on the number of resources employed.

Systemic complexity in capabilities refers to a vast and mixed array of resources employed to achieve a specific goal, creating a host of vulnerabilities if misaligned, mishandled or disregarded. This is due to the cumulative effect of all vulnerabilities of all the resources present in such a capability. The specificity of how damage can be done to the firm is obscured, due to its size and interdependence on various resources, and it is argued that the potential damage caused to the firm is high.

The following sections will provide a critical review of the preventative functions advocated by Curatorship.

2.4.5 Preservation

Le Breton-Miller and Miller (2014:407) refer to preservation as the preventative function associated with the challenge of erosion. It is subdivided into fostering loyalty, promoting equity and investing generously. Le Breton-Miller and Miller (2015:407) argue that the greatest threat to the employment of preservation is the pressure of ‘short-termism’ on managers. This assertion is wholly supported by Laverty (1996), although it should be reiterated that short-termism is not necessarily wrong in itself, but that it would hamper the argument in favour of preservation.

2.4.5.1 Fostering loyalty as 'talent retention oversight'

This preventative function opposes the challenge created by value-induced attrition. Le Breton-Miller and Miller (2015:407-408) argue that firms should create greater contextual incentives for employees, hire talent based on its qualities, not weaknesses, and if talent produces a form of idiosyncrasy, it should be offset within a team. Also, it is proposed that this might diminish hubris.

The problem with this argument is from the following dilemma – the entertainment of idiosyncrasies does not lead to a preventative outcome. Instead, the challenge is merely shifted to another dimension within the firm, and although this might diminish erosion of the resource onto itself, other resources would have to be employed to potentially 'offset a weakness'.

In Section 2.4.1.1, it was shown that the problem was one associated with the increase of bargaining power by a talented individual, and that erosion takes place when self-promoting behaviour, earnings management and hubris are exhibited by the employee. Tell-tale signs of this are when an employee tries to take full credit for work done in a team (Coff, 1999:123).

It was also established that the only function which could diminish this is well-directed oversight. It is hereby argued that the primary preventative function becomes well-directed oversight. It should be codified and made a primary responsibility of a person on the management team. This oversight will not work unless it is supported by the heuristics of the firm. Should the initial culture be neutral to or non-supportive of this oversight, the oversight itself, if pursued with enough vigour and authority, will influence the culture over time.

Coff (1999:121) argues that at least industry-average wages would be necessary to prevent employees from exiting the firm. The problem is that if a star employee is paid considerably more than his or her peers, this rent appropriation itself might spawn undue bargaining power. It should be noted that the argument is not against higher wages for star individuals, but that it should be distributed as share options, operational perks (such as better parking space) or bonuses, not only a wage increase. This in turn strengthens the argument in favour of directed oversight, as the secondary function of directed oversight could use a myriad of 'payments' not only to retain talented individuals, but to reward performance as well as value-supporting behaviour.

‘Fostering of loyalty’ is deemed too passive to act as a preventative function, based on hope and shifting certain problems to another sphere. Worse still, no special, consistent or measurable responsibility is advocated, almost as if it could happen spontaneously. Loyalty is not the problem, and as an abstract concept could be argued to be more of a resultant phenomenon than a manageable function. A more active, aggressive preventative function is advocated. It is hereby argued that the term ‘fostering loyalty’ be replaced with ‘talent retention oversight’, which would be committed to three full-time functions.

These functions include the identification and rigorous tracking of talented individuals, their performance and behaviour; recommendations on the different nature of ‘payments’ which could aid retention; and the accurate description of talent exit.

2.4.5.2 Promoting equity as ‘positive identity husbandry’

In Section 2.4.1.2, it was argued that the destruction which could be caused by valued-induced skewness stems from the regressive helical cycle consisting of various factors. It was argued that these factors are difficult to detect and that this challenge feeds onto itself. The idea that the promotion of equity could prevent this from happening is hereby discarded from the outset. The resource in question is an entity within the firm. It was argued that the value of a resource resides within potential quality, not productivity. The first step would be to enable that entity to aggressively communicate its quality by providing it with some freedom to express its own social identity, thereby forcing it to create its own positive expectations it would need to live up to. Levitt and March (1998:320) established that this would not happen spontaneously, but would have to be artificially engendered from the top.

Regarding the dangerously regressive helical cycle, it is hereby argued that only by having a strong, celebrated identity, an entity might warn management ‘from the ground up’ about potential red flags, such as perceived resource misallocation and competency traps. It seems as if support departments would be especially vulnerable to the helical cycle, thus it is argued that support departments specifically be infused with a positive identity. If the line manager does not necessarily have the ability to aggressively drive the department towards the advocated identity, then another peer-level employee (not necessarily from the same department) should be tasked to aid the line manager in this. Tangible goals should be set, and the entity should be rewarded accordingly when these ‘identity’ goals are reached.

Staying within the bounds of preservation, the theme under which this sub-function is embraced, it is suggested that the spirit in which departmental identities are conceived, should be seen as an extension of the manager's ability to create an enabling environment. This is supported by Thietart (2016:790) who argues that a manager can do little more than generate supporting conditions for teams within the firm.

It is suggested that 'promoting equity' be changed to 'positive identity husbandry'. This function is both preventative in nature, and addresses the true challenge created by value-induced skewness. It should only be initiated in support departments, or those entities which would be most likely to suffer from value-induced skewness.

2.4.5.3 Investing generously as 'aggressive reputational oversight'

Section 2.4.1.3 indicated that the premise supporting 'fragility from path dependence' was erroneous, and the sub-challenge was replaced with 'intangible delicateness'. The associated preventative mechanism advocated by Le Breton-Miller and Miller (2015:408) is investing generously in all types of intangible resources, such as corporate culture, brand and reputation. This provides an unfocused drive to prevent the stated form of erosion. These resources themselves, if damaged, were shown possibly to lead to the demise of the firm itself. Also, it was already asserted that these intangible resources require serious investment to start with, thus the idea of 'investing generously' becomes ambiguous. Le Breton-Miller and Miller (2015:408) advise that redundancies should be developed, but this makes little sense, as a firm can only have one reputation or one corporate culture.

It is hereby argued that the intangible resource with the greatest probability of damage – reputation - be targeted, and aggressively so. Van der Jagt (2005:180) conducted research on how important a firm's reputation rates with senior managers and found that without exception all senior managers had extremely strong views on reputation, but that as the field of reputation management has not been professionalised enough, most of the CEOs assumed this role of offensive or defensive reputation oversight (Van der Jagt, 2005:180-182). It is suggested that the term 'investing generously' be traded for 'aggressive reputation oversight'. The main activities relevant to the firm should be codified, cash

reserves should be on hand for ‘emergency repairs’ to the reputation, and if the firm is large enough, should invest in a dedicated post for a Chief Reputation Officer.

The secondary argument is that the previous two changes to the preventative functions should have in themselves a positive impact on corporate culture, and that the brand could be addressed through other avenues of the firm.

2.4.6 Connoisseurship

Connoisseurship is seen as the main preventative function associated with ambiguity. Although the term ‘certainty’ would be simpler to use, connoisseurship evokes imagery which implies certainty. The three sub-functions of connoisseurship advocated by Le Breton-Miller and Miller (2015:408) are identifying resources, parsing resources, and codifying and sharing wisdom. These sub-functions are now discussed in greater detail.

2.4.6.1 Identifying resources as ‘aggressive interrogative nurturing’

Le Breton-Miller and Miller (2015:408) suggest that resource ambivalence should be preventatively addressed by appraisal systems, development of talent and job rotation. The main challenge posed by resource ambivalence was shown to be the positional disadvantage the manager experiences when attempting to accurately determine the value of individuals. Furthermore, as some aspects of these individuals could be positive, other actions might be negative. It was argued that half-correct valuations by managers will cause more harm than wholly incorrect valuations.

This sub-challenge falls under ambiguity from whence it is argued that knowledge of the resources themselves should be prioritised. It would be unreasonable to assume that a CEO of a *Fortune 500* company should walk around and know every employee, but aggressive interrogative nurturing by line or middle managers should be adequate. This entails the line managers or supervisors engaging actively by displaying unambiguous interest in their employees several times a day, but this will only work if this practice is adopted by every authoritative position throughout the company, starting at the top. In some departments or even in firms within a certain industry, this might not be the norm and contrary to

existing culture, but a contextualised threshold could be established as a benchmark. It might not eliminate ambiguity completely, but it would allow the firm to manage ambiguity to a significant degree.

It is hereby argued that the preventative sub-function associated with resource ambivalence is termed ‘aggressive interrogative nurturing’, and the vague ‘identifying resources’ be discarded.

2.4.6.2 Parsing resources as ‘knowledge transfer shrewdness’

Linkage ambiguity seems to have been the greatest departure from the challenges originally identified by Le Breton-Miller and Miller (2015). This refers to the wrong utilisation of higher-order processes by managers when knowledge, either as information or as know-how, is to be distributed within the firm. The suggestions by Le Breton-Miller and Miller (2015:408) include flat work structures within a firm, designing of information systems according to channels and incremental experimentation. These are all discarded, as the initial challenge identified by them was shown to be incorrect.

The focus should be on the prevention of misuse, which stems from ambiguity, of higher-order processes involved with the distribution of knowledge. This simplifies the preventative goal immensely, as functional training can provide managers with knowledge and skills relating to the capabilities and limitations of the higher-order processes available to them, as well as basic theory relating to associated concepts, such as horizontal versus vertical knowledge transfer. Ultimately, the managers involved should be encouraged to use these processes as often as they can, and some controlled experimentation could be encouraged. It is hereby argued that the term ‘parsing resources’ be replaced with ‘knowledge transfer shrewdness’.

2.4.6.3 Codifying and sharing wisdom as ‘tacitness admiration’

Le Breton-Miller and Miller (2015:408) advocate codifying and sharing wisdom in order to prevent the challenge posed by tacitness. Mentorship programmes, incentives for teamwork and experimentation are listed as possible preventative functions. The argument formed in Section 2.4.2.3 clearly indicated that to codify tacitness would be to remove the celebrated imitation barrier it supports – which would necessitate another type of barrier in some variant of counterintelligence.

The type of problems associated with ambiguity-driven tacitness seems to relate to the appreciation of the individual's tacit skills. Regular celebration of tacit skills could be enough to prevent the ambiguity surrounding tacitness to cause damage, but inclusion of tacit skills as part of standard performance evaluations should be normalised. It is argued that the term 'tacitness admiration' should replace 'codifying and sharing of wisdom'.

2.4.7 Orchestration

Orchestration is the final preventative function and is associated with the challenge of misalignment (Le Breton-Miller & Miller, 2015:410). Orchestration as a concept was spawned by the assumption that resources must be accumulated, bundled and leveraged in such a way as to achieve a competitive advantage (Sirmon, Hitt, Ireland & Gilbert, 2011:1391). Orchestration itself refers to two primary processes – search/selection and configuration/deployment (Sirmon et al., 2011:1393). The sub-functions are 'matching resources', and 'focusing and broadening capabilities'. They are associated with the sub-challenges of context dependency and systemic complexity, respectively.

2.4.7.1 *Matching resources*

The resources in question are specifically talented employees, relationships or patents. The sub-challenge created by context dependency is two-fold. Firstly, certain resources, when 'bundled' with others, require specific conditions for optimal performance. Secondly, these resources become dependent on that specific context, and become vulnerable to any change in that context, provided the initial context was not below a destructive threshold. Optimal contexts are not always available to the manager, and the effort to create an artificial, acceptable context might be nullified should the context change at a later stage.

Combs, Ketchen, Ireland and Webb (2011:1119-1120) provide some insight to these challenges. Firstly, they argue that employment of resources will always happen in some way or another, but that the 'bundle' itself might have a stabilising effect on the context within which it is employed. Ironically, this makes the resource or bundle more susceptible to a change in context to such an extent that a competitive advantage becomes a liability. They argue that constant experimentation with obvious resources should

take place as often as possible, and that in some instances entrepreneurs are forced to perform *bricolage* - the bundling of resources in novel ways (Combs et al., 2011:1101).

Le Breton-Miller and Miller (2015:408, 410) advocate the development of an inventory of alignment options, as well as the experimentation to expand bundling options. These suggestions hold true, and fit well with the concept of orchestration.

2.4.7.2 Focusing and broadening capabilities as 'capability deployment competency'

Systemic complexity in capabilities refers to a misalignment created due to a vast and mixed array of resources employed to achieve a specific goal. Sirmon et al. (2011:1393) state that firms whose investment in resources deviated from their industry's norm exhibited a decline in performance, unless it was part of a specific strategy which centred on leverage. This provides substantiation to the first argument (relating to focusing and broadening of capabilities) by Le Breton-Miller and Miller (2015:410). They assert that the sub-challenge birthed from misalignment due to systemic complexity in capabilities could be prevented by the determination of a clear focal point around which the orchestration of resources could take place.

Their second argument states that robustness should be incorporated into the various resources which constitute this capability. As good as it sounds, not only is this not supported by the literature cited by them but contradicted by literature from one of the co-authors of Curatorship itself. Miller (2003:970) refers to a snowball effect when a salient capability, which generates rent, is effectively employed- it will attract attention, talent and more resources, leading to it being employed more often or in greater quantities, which in turn will make it better, more suitable, cheaper and robust as a consequence. It is hereby argued that the 'robustness' will happen organically, and that it is incorrect to assume a manager can incorporate robustness into a capability at will.

Of greater value is the argument by Sirmon et al. (2011:1407). They provide a compelling argument that the actions required by management relating to orchestration is determined by the level of competition (corporate or business), stage in the lifecycle of the firm, and the level of managerial hierarchy at which these actions take place. It is hereby argued that multi-dimensional positioning of

capability replaces the ‘broadening’ or ‘robustness’ argument, and that the preventative sub-function preferably be termed ‘capability deployment competency’.

2.5 Curatorship reformed

It appears as if the focus of Le Breton-Miller and Miller (2015) was to align curatorship as practised in museums to existing theory which relates to RBV. Upon initial inspection, the inferences seemed to hold together, and the concept reiterated salient premises associated with RBV. Upon critical inspection, however, it appears that based on supporting literature, the premises advocated by Le Breton-Miller and Miller (2015) are contestable, or in some cases contradicted.

While the main challenges and main preventative functions remained the same, two out of seven sub-challenges were accordingly changed, and all but one of the preventative sub-functions were altered on the grounds of supporting theory.

Figure 2.3 is a graphical depiction of the reformations argued thus far in italics.

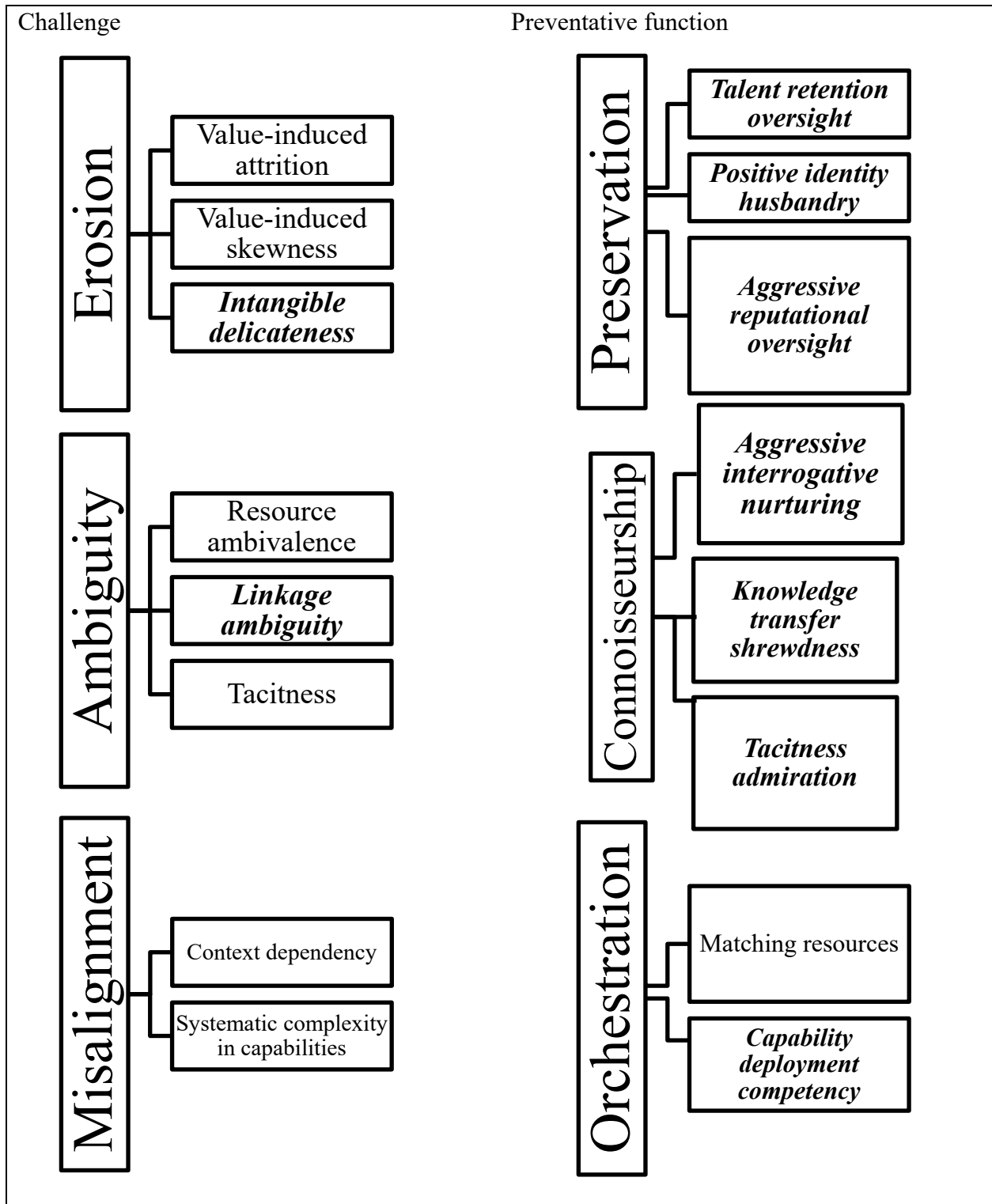


Figure 2.3: Reformed subdivided challenges with corresponding preventative functions.

2.6 Performance of the firm

2.6.1 The need to couple Reformed Curatorship to firm performance

In order to methodically and scientifically measure to what degree Reformed Curatorship holds true, the concept needs to be measured against the construct of firm performance. This task suffers from several constraints.

Firstly, firm performance needs to be outlined and conceptualised. Secondly, this conceptualisation must bear a resemblance to previous conceptualisations of firm performance, not only within the realm of strategic management, but also within the sub-discipline of RBV. Thirdly, previous indicators of firm performance which either proved ambivalent or contextually unsuccessful, must be articulated as such, after which they will be discarded. Fourthly, accepted indicators of firm performance will have to be listed, and adapted to this study with proper substantiation. Fifthly, the adapted indicators must be converted into questions, or rather scale items, which in turn will form the construct of firm performance of the research instrument.

2.6.2 Performance of the firm as a central theme within RBV

This sub-section will indicate the complexity associated with measuring the performance of the firm – a concept which took more than a century to evolve from economic theory, theoretical assertions and empirical research.

Strategic management as an academic discipline – and therefore, by implication, RBV – is concerned with one salient enquiry (Barney & Arian, 2006:123): Why are some firms outperforming other firms on a consistent basis? This question has been around since the early 1900s, when traditional economic theorems were inconsistent with scientific observations of firms (Barney & Arian, 2006:123-124).

Towards the middle of the 20th century, it was established that general managers exert the greatest possible influence on the performance of the firm, and that high-quality managers seemed to be the singular reason for persistent positive performance. This led to the establishment of business schools –

the future breeding grounds for such managers (Pierson, 1959; Gordon and Howell, 1959, as cited in Barney and Arikan, 2006:124).

Sadly, it was realised that there were two fundamental problems with this reductionist approach. Firstly, the personalities and individual competencies were ambivalent and vague (Barney & Arikan, 2006:125). Secondly, managerial prowess could not be the sole distinctive competency within a complex entity such as a firm (Selznick, 1957, as cited in Barney and Arikan, 2006:125).

Economic theory, as a discipline with sturdy roots in the social sciences, has always been concerned with the creation of inequality as a side product from successful trade (Scherer, 1980, as cited in Barney and Arikan, 2006:129).

Based on the premise that social welfare ills breed from an industry which does not conform to perfect competition, a paradigm was constructed – the ‘structure-conduct-performance’ (SCP) paradigm (Bain, 1956, as cited in Barney and Arikan, 2006:129). This paradigm stipulated that the industry in which a firm operates will define its conduct – and by implication its performance – in such a way that if imperfect competition exists, non-competitive conduct will mitigate certain welfare ills. The implication of this accepted paradigm was that managers had little or no influence on superior performance of firms, and that firms were husks dependant on their industry.

In the early 1970s contradictory views emerged, most notably from Demsetz (1973:3) that superior performance was derived from luck or some novel insight by agents within the firm (Barney & Arikan, 2006:129). This was the first tangible sprouting of resource-based logic – a logic that the internal workings, structure, alignment and resources within a firm contribute directly to the performance experienced by the firm (Barney & Arikan, 2006:130).

Barney (1986a) expanded on this premise by reaffirming that luck or extraordinary discernment of its resources within an industry and the resources already possessed by the firm are a likelier source of economic rents than resources to be acquired externally (Barney& Arikan, 2006:132).

Throughout the 1990s, various authors initially distinguished between tangible and intangible resources – a distinction which devolved into categorisations which included concepts such as organisational

knowledge, capabilities and dynamic capabilities (the ability to create new capabilities) (Barney & Arikan, 2006:138). The same theoretical foundation underpinned all these categorisations, which were individually seen as stand-alone markers of superior firm performance, thus resulting in a sudden, ineffectual hindrance to RBV theory development.

Integral to RBV is the conventional definition of superior performance, defined as temporary or persistent economic rents, coupled or uncoupled to temporary or persistent competitive advantage (Barney & Arikan, 2006:139). Economic rents are defined as a higher-than-expected return on the employment of resources, and competitive advantage is defined as the implementation of value-creation strategies not being effected by rivals (Barney & Arikan, 2006:139).

The problem with these definitions is that they are causally ambiguous, context-dependant and not viable to quantitatively measure firm performance. Thus, indicators with the paradoxical quality of being specific enough to measure within a firm, but generic enough to be universally true to some degree within the realm of RBV, are sought.

Several assertions, derived from theory, exhibit the necessary characteristics of fulfilling the above-mentioned requirements. As some of these assertions apply to corporate parenting, only four will be articulated (Barney & Arikan, 2006:145-163).

Firstly, firm effects are more important than industry effects when determining performance. This was affirmed by a study from Rumelt (1991), and later replicated by McGahan and Porter (1997), Brush and Bromiley (1997) and Mauri and Michaels (1998) (all sources cited in Barney and Arikan, 2006:145). It should be noted that the effects are context-dependent on the industry in which measurement takes place.

Secondly, valuable, rare and inimitable resources will have a greater impact on firm performance than other resources. The authors of interest relating to Reformed Curatorship include Hall (1992), Hall (1993), Barnett, Greve and Park (1994), Henderson and Cockburn (1994), Pisano (1994) and Poppo and Zenger (1995) (all sources cited in Barney and Arikan, 2006:147-148). The results of these studies confirmed the assertions of RBV.

Thirdly, there cannot be a ‘rule of riches’ derived from strategic management theory. Authors of interest to Reformed Curatorship include Mansfield, Schwartz and Wagner (1981), Lieberman (1982; 1987), Miller and Toulouse (1998), Walston, Burns and Kimberly (2000). These studies confirmed that competitive advantage could not be sustained with standard, replicable and known managerial methods alone. The assertion is rooted in the notion that resources cannot be bundled in a context where no possible sustainable advantage can exist – the potential must already be there, as positive firm performance cannot be conjured from nothing (Barney & Arkan, 2006:165).

Fourthly, human resources are seen as a profound, positive contributing factor towards firm performance. Although this is not an assertion inherent to classic RBV theory, it is still articulated due to its relevance to this specific study, as well as its reliance on resource-based logic. This assertion follows from a resource-based logic tenet which stipulates that the greater the social complexity of a capability or resource, the greater its positive contribution towards firm performance (Barney & Arkan, 2006:163). Some scholars researched the bundling of different human resource practices and how it relates to firm-specific investments in human capital (Barney and Wright 1998, Wright, McMahan and McWilliams 1994 and Wright and McMahan, 1992, as cited in Barney and Arkan, 2006:163).

The implicit linkage between human resources and firm performance is integral to the Reformed Curatorship framework, as the framework argues for a nurturing managerial approach relating to all resources and capabilities, most of which are deemed inseparable from people, or rather, the human as the resource. In a landmark study conducted by Stern, Deng, Chen and Gao (2021:2506), where the departure of strategic human capital and its effect on firm performance was studied, it was unequivocally concluded that the exodus of human capital leads to a definitive decrease in firm performance. However, they also discovered that firms which use ‘nurturing’ as a primary governing mechanism, are more sensitive to the effects of their employees’ exit (Stern et al., 2021:2607). This provides a caveat for the Reformed Curatorship framework – just because a nurturing approach sounds meaningful and worthwhile, there seems to be an inherent trade-off.

In addition to the assertions above, RBV as a school of thought has sought to clarify firm performance, yet the link between resource management and firm performance has received far less attention (Barthelemy, 2017:1186). Reformed Curatorship’s incorporation of firm performance, along with the

manner in which it is incorporated, broadly contributes to the reversal of paucity surrounding the linkage between resource management and firm performance.

This section served to indicate the voracity and timespan with which firm performance measurement has been pursued within the discipline of strategic management, and that it forms the main *raison d'être* of resource-based logic. The concept of firm performance was outlined and conceptualised, bearing a resemblance to previous conceptualisations of firm performance within the realm of strategic management and RBV.

A careful discrimination of possible indicators of firm performance will follow, which will result in the abandonment of non-indicators and articulation of practical and fitting indicators.

2.6.3 Non-indicators of measuring performance

A profound scrutiny of contemporary RBV academic literature indicated various authors who studied an array of potential indicators of firm performance. These indicators were derived from previous literature, and untested within the RBV framework parameterising firm performance and seemed obvious upon initial inspection.

The respective results of this line of research yielded surprising results – numerous ‘obvious’ indicators could not be proven to significantly contribute to firm performance. It is of great import to report these findings as part of the methodical, systematic and scientific formation of a robust construct underlying firm performance. This section aims to articulate these non-indicators within context, which will ultimately be discarded from the firm performance construct of this study.

Firm size conjures an image of being able to weather unexpected negative markets within a specific industry at any given time. Newbert (2008:754), also following a SEM research methodology, specifically investigated competitive advantage as an antecedent of firm performance - within the RBV context. This author used firm size and a hostile environment as two control variables within his study. The results of the study indicated that firm size had no significant impact upon firm performance, which led to the suggestion that firm size is unrelated to firm performance (Newbert, 2008:756).

In a recent study, Strauch, Pidun and Zu Knyphausen-Aufseß (2018) investigated the indicators yielding superior decision-making relating to capital allocation within multi-business firms. No significant evidence could be found that links firm size *negatively* towards the decision-making efficacy of resource allocation by management (Strauch et al., 2018:11). Not only does this study reinforce the notion that firm size is unrelated to the performance of a firm, but unrelated to an antecedent indicator of superior firm performance (if it is understood that decision-making efficacy is a socially complex resource linked to superior firm performance within resource-based logic).

Firm size as a possible indicator is therefore relegated to a non-indicator, most notably due to the similarity of research context and research design of the mentioned literature and the research relating to Reformed Curatorship.

The growth of the firm seems a plausible indicator of performance – how can a firm grow without exhibiting positive performance? However, even upon minimal inspection, there seem to be numerous stumbling blocks to this line of reasoning.

Alvemar (2015:40), in a resource-based view study of agricultural industries in Sweden, reported that productivity decreases when firm (and in this case, tillable farmland) size increases due to expansion.

Joseph and Wilson (2017) conducted a study within the niche discipline of the attention-based view (ABV) relating to the process of growth. They lament, on numerous occasions, the vague understanding of relevant factors underlying growth, as well as its complex nature (Joseph & Wilson, 2017:1781, 1792). These authors do not seem to articulate that firm growth is unrelated in performance. In fact, they build upon one specific assertion from Penrose (1959) that sustained positive firm performance and growth is in part due to the ability of managers to perceive opportunities and allocate resources accordingly (Joseph & Wilson, 2017:1783).

However, this assumption rests on the premise that collective managerial interests are not divergent, and that decision-making perception and ability is uniformly distributed throughout the entire structure of the firm (Joseph & Wilson, 2017:1793). The result of their study indicated that managers perceive and evaluate opportunities differently, both internally and externally in nature, in a non-uniform fashion. Furthermore, they assert that this unpredictable heterogeneity in perception leads to (also unpredictable)

direct or indirect interventions from any level of management - which pushes the firm away from the status quo where established beliefs no longer matter, or are irrelevant (Joseph & Wilson, 2017:1793).

Firm growth is hereby relegated to a non-indicator, due to its immense complexity which is not well-understood. Furthermore, its causal ambiguity is problematic - there is no evidence that firm growth is an antecedent of performance. It might be that performance is an antecedent to growth.

Some large organisations make use of specially designed performance measurement and management tools to aid managerial tasks and to assign and track accountability across the plethora of functions within the firm. Existing performance measurement systems might be useful in decoding which indicators could be utilised to measure firm performance.

Beer and Micheli (2018) conducted a study in response to two extensive problems detected with performance measurement and management systems. Not only are these systems easy to manipulate by employees, but they also invasively interfere with what is being measured. Of greater concern is that these systems have not resulted in increased performance as expected (Beer & Micheli, 2018:756). This relegates any existing performance management system, or its usage, to a non-indicator.

Setting measurable organisational goals might seem to be an antecedent to firm performance. However, Kotlar, De Massis, Wright and Frattini (2018) suggest a complete re-examination of this concept, mainly due to its complexity and context-dependency (Kotlar et al., 2018: S3). Furthermore, they indicate that the basic premise of organisational goals is unfounded – individuals can have goals, but groups cannot (Kotlar et al., 2018: S4). Therefore, the articulation or presence of goals cannot be considered as an indicator of firm performance.

Reputation might be considered to be an indicator linked to firm performance. Fasaei, Tempelaar and Jansen (2017:1) assert that the value of a good reputation has been well emphasised, but they caution against the paradoxical outcomes of a good reputation – its vulnerability, which in turn will spawn over-cautious managerial behaviour. Thus, any performance benefit which might be derived from resources linked to (or including) reputation, might be reversed over time due to a parochial outlook on decision-making (Fasaei et al., 2017:11). Specifically, as reputation is seen as an asymmetric resource (discussed at length in Section 2.4.1.3), more tacit resources and capabilities will be utilised to protect it, or at the

very least not erode it. This in turn leads to low-risk decision-making, or at least lower than the threshold of risk-taking which might have assisted the generation of greater economic rents. Apart from the fact that one could make a case for the context-dependency of reputation, it is hereby relegated to a non-indicator of positive firm performance.

Firm similarity (how similar one firm is to another) could lead to positive firm performance, but could it be an indicator thereof? The concept of firm similarity is articulated as ‘strategic heterogeneity’ (Gomez, Orcos & Palomas, 2016:161). Low strategic heterogeneity leads to early competitive alignment, but renders competence traps more likely – if strategic heterogeneity is too high, understanding the competitive environment becomes problematic (Gomez et al., 2016:161). According to Gomez et al. (2016:146), the literature on strategic heterogeneity is currently divided, rendering the concept ambivalent and thus unsuitable to be utilised as an indicator for firm performance.

The ability to form worthwhile networks or alliances seems important enough to consider it an indicator of firm performance, as it could be considered an immobile and heterogeneous resource within the sphere of influence of the firm (Kauppila, 2015:151). A study conducted specifically to expand research relating to alliance management capabilities within the RBV school of thought yielded an unexpected result – alliances seem to breed inertia and do nothing to positively alter the resource base of the firm responsible for performance (Kauppila, 2015:163). This relegates alliance capability management to the category of a non-indicator of performance.

Dynamic capabilities have been shown to be an antecedent to firm performance, but there are two divergent views in which dynamic capabilities can be employed (Ringov, 2017:654): Complex codification of these capabilities (and then applying them) versus a simple, non-codifiable route where new routines and experiences replace the older ones. The study of Ringov (2017) established that this question is ultimately context-dependent, and that some type of mix of the two divergent views seem to be prevalent in terms of superior performance, but there is no precise recipe or ratio of mixing these two views (Ringov, 2017:662).

Wilden et al. (2013:72-73) echoed this sentiment in a paper preceding that of Ringov. The link between dynamic capabilities and performance is contingent to the organisational structure specific to each firm,

as well as the internal and external context in which dynamic capabilities are employed (Wilden et al., 2013:88). This vagueness relegates the structure housing dynamic capabilities (complex or simple), as well as the presence of dynamic capabilities, to non-indicators of performance.

The following section will articulate and substantiate indicators which could be used to measure performance.

2.6.4 Indicators of measuring performance

The indicators which could be used to measure firm performance will be substantiated based on support they have received in RBV literature, as well as their presence in studies related to Reformed Curatorship and its research design. Of all the previous literature, the study conducted by Newbert (2008) relates the closest to Reformed Curatorship, as Firm Performance was also parameterised as a construct, and SEM was used to obtain results. These indicators were objective financial performance, subjective financial performance, subjective non-financial performance, hostile environment and novel combinations of resource bundling.

In the study of Newbert (2008), performance was solely measured by utilising an already-developed scale from Delaney and Huselid (1996, as cited in Newbert, 2008:753) which measured only subjective financial performance (profitability and sales) and subjective non-financial performance (marketing and market share).

The motivation for using this scale was three-fold (Newbert, 2008:753): Firstly, due to the large sample needed, objective and verified financial documents would have been difficult to obtain. Secondly, the scale has a well-documented reliability ($\alpha = 0.86$; (Newbert (2008:767) reported $\alpha = 0.821$). Thirdly, previous research indicates that subjective measures of performance correlate extremely well with objective measurements thereof (Powell, 1992a, as cited in Newbert, 2008:753).

This section will be reiterated in Chapter 3, as it relates to the construction of the research scale.

2.7 Propositions

Ultimately, to be able to create hypotheses, it is necessary to create preliminary propositions from which the hypotheses (and the associated null hypothesis) can be derived. It should be noted that the ‘preventative measures’ (preservation, connoisseurship and orchestration) have been theoretically derived, assuming that the ‘challenges’ (erosion, ambiguity and misalignment) hold true. Only the ‘challenges’ will be tested, therefore the propositions will concern these ‘challenges’ and how they relate to performance. These challenges will be termed ‘resource vulnerability’ as a mediating variable (see Chapter 3).

Proposition 1: Resource vulnerability is negatively, but strongly correlated with firm performance.

Proposition 2: Erosion is negatively, but strongly correlated with firm performance. Specifically:

2.1 Value-induced attrition (the behaviour of individual specialists, supervisors or managers consisting of self-promotion, possible firm exit, bargaining, abnormal remuneration, media attention and ab intra destruction) relates negatively, but strongly with firm performance.

2.2 Value-induced skewness (the behaviour of individual departments consisting of subjective allocation of resources per department, the need to fight or earn resources by each department, destructive adaptability to resource allocation, established way of doing things in a department contextually describing inability to self-correct, and the allocation of resources to departments that perform better) relates negatively, but strongly with firm performance.

2.3 Intangible delicateness (the abstract facets such as morale and reputation consisting of misperception of reputation as an asymmetric resource, misperception relating to the fragility of reputation, misperception about the intensity of morale sustainment, the presence of morale erosion, and the misperception of morale and fragility) relates negatively, but strongly with firm performance.

Proposition 3: Ambiguity is negatively, but strongly correlated with firm performance. Specifically:

3.1 Resource ambivalence (consisting of subjective evaluations from managers, destructive ambivalence exhibited by employees, wrong value assigned to an employee, misaligned employee evaluations and discontent related to evaluations) relates negatively, but strongly with firm performance.

3.2 Linkage ambiguity (consisting of the difficulty of information transfer, the difficulty of knowledge transfer, the presence of formal processes relating to information, the presence of formal processes relating to knowledge, and the presence of complexity in an implied horizontal and vertical transfer system) relates negatively, but strongly with firm performance.

3.3 Tacitness (consisting of the degree to which tacit knowledge is being held within individuals, the prevalence of tacit knowledge, the difficulty in transfer of knowledge, the presence of general ambiguity, and the presence of misunderstandings) relates negatively, but strongly with firm performance.

Proposition 4: Misalignment is negatively, but strongly correlated with firm performance. Specifically:

4.1 Context dependency (consisting of the wrong usage of resources, the disruptive internal environment, and the prevalence of wrongful justification of wrongful resource application) relates negatively, but strongly with firm performance.

4.2 Systematic complexity in capabilities (consisting of the degree to which resource bundling is present, the degree of complexity of the value chain, and the complexity of resources, or resource bundles) relates negatively, but strongly with firm performance.

The various hypotheses will be derived from the mentioned propositions and articulated in Chapter 3.

2.8 The South African wine industry

In 2015, the South African wine industry directly and indirectly employed approximately 300 000 people and contributed R36.1 billion to the GDP of South Africa (Wines of South Africa, n.d.). By 2021, despite the 2020/2021 Covid-19 pandemic which wrought immense destruction within the wine industry, its contribution to the GDP remained at 1.1%, but in Rand value increased to R55 billion. This is despite

a R8 billion loss in direct sales and a loss of R3 billion in tax to the state (Wines of South Africa, 2021a; Wines of South Africa, 2021b). Furthermore, growth in GDP contribution has never fallen below 10% per annum since 2003 up until 2015. South Africa was ranked as the seventh largest wine producer in the world and produced 4.2% of the world's wine in 2015(Wines of South Africa, n.d.). By 2020, South Africa still ranks as the seventh largest wine producer in the world, producing 4.0% of the world's wine (SAWIS, 2021).

PriceWaterhouseCoopers (2015:21-25) reports five global megatrends which will impact the South African wine industry. These include demographic change, climate change and resource scarcity, technological advances, accelerating urbanisation and shifts in economic power. These megatrends are defined as macro-economic factors which not only change the future outlook for the wine industry, but also the pace of the expected change (PriceWaterhouseCoopers, 2015:20). Besides the worst drought South Africa has faced in 20 years, production of wine increased annually per hectare farmed by 4% (PriceWaterhouseCoopers, 2015:3,32). It can be safely assumed that organisational slack is already stretched thin, and that variations of disruptive change can be expected. The contemporary situation of the wine industry is starkly captured by the following quote (Wine.co.za, 2016):

“Fewer than one in five wine producers in South Africa are making a reasonable profit. One in three is running at a loss. The rest are just breaking even.”

Despite some severe challenges, the South African wine industry is an invaluable contributor to the economic welfare of the country and its citizens. It is a serious competitor abroad, despite the added challenges of operating within an emerging market and experiencing adverse climatic conditions. Furthermore, it also serves as a general boon for the reputation of South Africa, as wines compete internationally on the basis of their country of origin. As a diverse industry, deregulated to a complete free market industry since 1997 (Finweek, 2015:29), the wine industry provides an exciting context from which one can explore the potential benefits of Curatorship.

No literature could be found exploring an articulated variation or derivative of RBV in the South African wine industry.

2.8.1 Complexity of the South African wine industry

The very nature of winemaking seems complex when considering resources or rather, resource management. South African vines planted will only start to yield viable grapes for winemaking after three years, and will reach full winemaking potential after 20-25 years. Furthermore, wine estates must replace 10% of their existing infrastructure year-on-year to avoid unforced production loss (South African Food Review, 2015:1) and require investment in order to remain economically viable (Morkel, A., Nienaber, H. and McNeill, R., 2021:22).

To add to the inherent complexities of producing wine, the South African wine industry seems to address challenges similar to other wine-producing countries – increase in demand for premium wine which requires capital investments, new farming methods, and profits which constantly lag inflation (Morkel, et al., 2021:22). The market conditions since 2005 have been less than favourable for wine-producing entities, specifically producer-cellars – consumers demanded specific cultivars, tastes and packaging, along with stagnant grape prices and rising input costs led to a decrease in return on investment from 17% to 11% (Ewert, J., Hanf, J. and Schweickert, E., 2015:291).

An exploratory study by Morkel et al. (2021:36) determined that wine producers suffer from a lack of strategic skills specifically relating to strategy implementation. Another exploratory study by Naudé and Badenhorst-Weiss (2020:12) indicated that South African wine farmers do not formalise processes, yet they believe it would be beneficial to do so. The South African wine therefore industry serves as an apt industry for the testing and operationalisation of Reformed Curatorship. This is mainly due to the several industries within which typical wine-producing entities compete, apart from purely wine production. The wine industry itself competes for customers and suppliers in no less than five industries – agriculture, cellar operations, manufacturing, trade (which includes catering as well as accommodation) and tourism (Connaught Economists, 2015:13). It is expected that the diverse range of associated industries will provide more gravitas to the study. As such, it is foreseen that an argument will be formed relating to the possible universal applicability of Reformed Curatorship.

The aforementioned footprint of the wine industry, in terms of associated industries, poses some challenges in terms of the study. Firstly, few, if any, wine producers have wine as a single income

stream. This is mainly due to input costs which kept pace with inflation over the past two decades, whereas wine prices have risen at a rate substantially less than inflation within the same period (Wineland, 2016). Secondly, the variables relating only to wine production are plentiful, thereby increasing the overall complexity of supply chain processes and factors leading to profitability (Wine.co.za, 2016). Industry watchdogs such as WineTech, VinPro, PWC and WOSA are endeavouring to make sense of all the variables. As such, an excellent source of longitudinal industry statistics is available. Thirdly, the correlation between performance and other variables is not self-evident.

Three variables have been mentioned (Wineland, 2016; Wine.co.za, 2016) as possible contributors to performance – yield per hectares, hectares under vine and district (read: location of wine-producing entity). Yield per hectares has been found to be a function of district as well as hectares under vine (Wine.co.za, 2016), therefore it will be excluded for the purposes of investigation. The remaining variables, hectares under vine and district, will be investigated in terms of their respective roles as moderators in terms of Reformed Curatorship (see Chapter 3, Section 3.5.7.5).

The hectares under vine consist of two variations – yielding hectares under vine and non-yielding hectares under vine (PriceWaterhouseCoopers, 2015:30). For the purposes of this study, the total hectares under vine will be investigated, as non-yielding hectares under vine also require resources. For a wine producer to be sustainable, 45-50 hectares under vine are required, and a natural threshold of estate size seems to be 100 hectares under vine (Weibach, 2019). It is foreseen that size (hectares under vine) will have a low moderation effect on Reformed Curatorship, as the principles on which Reformed Curatorship are based are linked to various industries and firm sizes. However, this still needs to be scientifically explored. In terms of ‘size’ as a moderator, either a low effect or large effect on the first order main dimension (‘prevalence of resource vulnerability’) will be significant.

The district in which wine-producing entities reside seems to have an impact on various factors which relate to firm performance. These factors include, but are not limited to, direct input costs, yield per hectare, yield per ton, human resource costs, distance from metropolises, and distance from tourism hubs (Wineland 2016; Wine.co.za, 2016). The districts will be sub-divided into 21 geographical districts, as denoted in the Platter’s 2019 South African Wine Guide (2018:712), as can be seen in Table 2.1 below.

1.	Breedekloof	8.	Klein Karoo and Garden Route	15.	Stellenbosch
2.	Cape Peninsula	9.	KwaZulu-Natal	16.	Swartland
3.	Durbanville, Philadelphia and Darling	10.	Northern Cape, Free State and North-West	17.	Tulbagh
4.	Eastern Cape	11.	Olifants River and West Coast	18.	Villiersdorp
5.	Elgin	12.	Paarl	19.	Walker Bay and Bot River
6.	Franschhoek	13.	Robertson	20.	Wellington
7.	Helderberg	14.	Southern Cape	21.	Worcester

Table 2.1: *Districts in alphabetical order (Platter’s 2019 South African Wine Guide, 2018:712)*

Some moderation effect of ‘district’ as a moderator is expected relating to the first order main dimension (‘prevalence of resource vulnerability’), mainly due to the difference in price and access to resources due to geographic location. Again, there is a possibility that the moderation effect might be low, as Reformed Curatorship was construed from generic, universal principles across multiple industries. Either way, the moderation effect will be significant in terms of the generalisability of the model as a whole.

Thus, two new propositions could be added:

Proposition 5: Size (expressed as total hectares under vine) as a moderator, will have a low moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

Proposition 6: District (expressed as one of 21 predetermined locations) as a moderator, will have a low-to-medium moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

2.9 Contribution to research

This section exclusively deals with the contribution to research provided by Chapter 2 (see Chapter 1, Section 1.4.5 for an articulation relating to the overall contribution of the study).

The primary contribution of the literature review is the critical reformation of Curatorship constructs. Chapter 1 creates the expectation that the literature review would make an incremental contribution to RBV and Curatorship as such. Chapter 2 fulfils this expectation by culminating in a reformed version of Curatorship. From here on, the term ‘Reformed Curatorship’ will be used throughout, replacing ‘Curatorship’. This is done in preparation of scale creation and statistical analysis of the model.

The reformation of the concept of Curatorship departs from the forceful linkage to museum-curatorship towards a more aggressive, practical, strategy-oriented version of the concept, related to the overhaul of the preventative functions and sub-functions. This departure is due to the fallibility of some assertions, arguments and premises by Le Breton-Miller and Miller (2015) which were not supported by the cited literature, and in some cases even contradicted. Reformed Curatorship therefore boasts a scientifically correct theoretical foundation, which conforms to the conventions, principles and trends in strategic management, as well as RBV. Also, Reformed Curatorship assigned provisional ‘danger weights’ to each sub-challenge and the challenge of ambiguity, whereas Le Breton-Miller and Miller (2015) envisioned the sub-challenges to be equiponderant.

2.10 Conclusion

The main purpose of the literature review was to ensure the theoretical soundness of Curatorship as a concept by articulating and explaining its constituent elements. In order to achieve this, a concept-dependent contextual research strategy was employed. The utilisation of the capital letter when referring to the concept itself was established. The origin of Curatorship was reiterated, followed by a treatise on its positioning under the umbrella of strategic management – specifically as part of RBV theory. It was established that a precedent of ‘borrowing’ not only exists within the discipline of strategic management, but that it has become a conventional manner in which the discipline expands.

The bulk of the review focused on Curatorship itself. It was found that the seminal works cited by the original authors were misinterpreted or, in some cases, not applicable. The initial consequence was that two of the eight ‘sub-challenges’ were changed. Relating to the preventative functions, seven of the eight sub-functions were changed. This marked departure from the original concept was mostly due to the compounding effect of errors discovered in the challenges, and the utilisation of loose references to books without the benefit of seminal work or articles. Where possible, the original articles, which suffered from misinterpretations, were used to change the preventative sub-functions.

As none of the main ‘challenges’ or ‘preventative functions’ were changed, the main premise surrounding the investigated paradox still holds true. The resulting argument was a renaming of the concept to ‘Reformed Curatorship’, which departed from the original concept by being more aggressive in the combat of resource erosion, specifically relating to the preventative sub-functions. Concerning the sub-challenges, provisional ‘danger weights’ were applied to each sub-challenge – an explicit departure from the concept as derived by Le Breton-Miller and Miller (2015).

A short overview of the South African wine industry followed. It provided sufficient evidence that the wine industry is not only an important, contributing industry of South Africa, but that it is a feasible vehicle to test Reformed Curatorship. No attempt to test a similar framework in this industry could be found.

As stated in Chapter 1, Chapter 3 will address the foundation and constructs. Related to the current research, this chapter will realise the creation of the constructs of the intended research instrument, the incorporation of Holism and adjustments for emerging market conditions.

Ultimately, this review of literature accomplished its purpose – the theoretical soundness of the concept was critically reviewed and changed accordingly. This resulted in the first research objective being reached – an articulation and explanation relating to the components of Reformed Curatorship.

3 CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The preceding chapter, the critical review of literature, achieved the first research objective – to articulate and explain which elements constitute the concept of Curatorship. Enough changes were brought on to substantiate a renaming of the concept to Reformed Curatorship.

The purpose of Chapter 3 is two-fold. It will confirm the systematic, scientific and methodical approach to the study of Reformed Curatorship. Thereafter, it will indicate how the research instrument was designed and constructed, thereby achieving the second research objective. It will also provide an overview of the three remaining research objectives - performing rigorous pilot testing of these constructs before the actual data collection, the scientific, methodical determination of the correlation between the presence of constructs amongst the units of analysis, and the relationship determination between the constructs from the data collected.

This chapter consists of several sections. Within the first section, hypotheses and definitions used throughout will be articulated. The second section concerns the research context and design - this will be discussed in depth, providing a scientific outline of the research. The third section relates to the research method. Technical issues, such as the population, sample size, levels of measurement, planned field work and data capturing, reliability, validity and data analysis will be articulated and commented on. The fourth section consists exclusively of the research instrument and all the facets relating to the design and construction thereof. The fifth section will articulate limitations of the research, and the sixth and final section will relate to the ethical considerations which will be upheld throughout the research.

3.2 Assumptions, definitions and hypotheses

3.2.1 Assumptions and definitions

According to Babbie (2008:132), the term ‘observation’ evokes an image of passivity and casualness and advises the utilisation of the term ‘measurement’ instead – a term more suited to the methodical,

systematic nature of the scientific method of inquiry. Moreover, DeVellis (2003:8) advises that measurement instruments which are assemblies of items merged into a complex score, with the specific intention of indirect observation of high-level constructs, are referred to as 'scales'.

In order to avoid ambivalence of terms, the term 'measurement' will be used throughout instead of the term 'observation', and 'scale' will be used instead of 'instrument'. The term 'questionnaire' refers to the survey in its physical form.

According to Babbie (2008:189), the Likert-type format used in the research resembles another format – a semantic differential format. As one of the constructs utilises a format resembling the Likert-type format, the Likert-type format will be referred to throughout to avoid ambivalence.

3.2.2 Hypotheses

The propositions articulated in Chapter 2 provide a detailed description of the conceptual framework of what needs to be tested. Due to the utilisation of SEM, it is imperative to derive hypotheses from these propositions in order to interpret the results.

From Chapter 2, the following propositions were derived from the critical review of literature:

Proposition 1: Resource vulnerability is negatively, but strongly correlated with firm performance.

Proposition 2: Erosion is negatively, but strongly correlated with firm performance. Specifically:

2.1 Value-induced attrition (the behaviour of individual specialists, supervisors or managers consisting of self-promotion, possible firm exit, bargaining, abnormal remuneration, media attention and ab intra destruction) relates negatively, but strongly with firm performance.

2.2 Value-induced skewness (the behaviour of individual departments consisting of subjective allocation of resources per department, the need to fight or earn resources by each department, destructive adaptability to resource allocation, established way of doing things in a department contextually describing inability to self-correct, and the allocation of resources to departments that perform better) relates negatively, but strongly with firm performance.

2.3 Intangible delicateness (the abstract facets such as morale and reputation consisting of misperception of reputation as an asymmetric resource, misperception relating to the fragility of reputation, misperception about the intensity of morale sustainment, the presence of morale erosion, and the misperception of morale and fragility) relates negatively, but strongly with firm performance.

Proposition 3: Ambiguity is negatively, but strongly correlated with firm performance. Specifically:

3.1 Resource ambivalence (consisting of subjective evaluations from managers, destructive ambivalence exhibited by employees, wrong value assigned to an employee, misaligned employee evaluations and discontent related to evaluations) relates negatively, but strongly with firm performance.

3.2 Linkage ambiguity (consisting of the difficulty of information transfer, the difficulty of knowledge transfer, the presence of formal processes relating to information, the presence of formal processes relating to knowledge, and the presence of complexity in an implied horizontal and vertical transfer system) relates negatively, but strongly with firm performance.

3.3 Tacitness (consisting of the degree to which tacit knowledge is being held within individuals, the prevalence of tacit knowledge, the difficulty in transfer of knowledge, the presence of general ambiguity and the presence of misunderstandings) relates negatively, but strongly with firm performance.

Proposition 4: Misalignment is negatively, but strongly correlated with firm performance. Specifically:

4.1 Context dependency (consisting of the wrong usage of resources, the disruptive internal environment, and the prevalence of wrongful justification of wrongful resource application) relates negatively, but strongly with firm performance.

4.2 Systematic complexity in capabilities (consisting of the degree to which resource bundling is present, the degree of complexity of the value chain and the complexity of resources or resource bundles) relates negatively, but strongly with firm performance.

Proposition 5: Size (expressed as total hectares under vine) as a moderator, will have a low moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

Proposition 6: District (expressed as one of 21 predetermined locations) as a moderator will have a low-to-medium moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

From the above propositions, the following hypotheses were derived:

H1(a) - There is a strong, but negative relationship between the prevalence of resource vulnerability and firm performance.

H1(b) - There is a strong, but negative relationship between erosion and firm performance.

H1(c) – There is a strong, but negative relationship between value-induced attrition and firm performance.

H1(d) – There is a strong, but negative relationship between value-induced skewness and firm performance.

H1(e) - There is a strong, but negative relationship between intangible delicateness and firm performance.

H1(f) - There is a strong, but negative relationship between ambiguity and firm performance.

H1(g) - There is a strong, but negative relationship between resource ambivalence and firm performance.

H1(h) - There is a strong, but negative relationship between linkage ambiguity and firm performance.

H1(i) - There is a strong, but negative relationship between tacitness and firm performance.

H1(j) - There is a strong, but negative relationship between misalignment and firm performance.

H1(k) - There is a strong, but negative relationship between context dependency and firm performance.

H1(l) - There is a strong, but negative relationship between systematic complexity of capabilities and firm performance.

H1(m) – Size as a moderator will have a low moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

H1(n) – District as a moderator will have a low-to-medium moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

3.3 Research context and design

This section concerning research context will provide information relating to the ontology and epistemology decided upon, relating to the proposed research. The section relating to design will provide clarity on the research design, specifically relating to its nature, the type and the units of analysis, as well as the units of observation. The choice of research design will be explained, after which it will be argued that alignment exists between the research purpose and research design. Finally, reference will be made to the impact of the study relating to internal and external validity.

3.3.1 Ontology and epistemology

Saunders, Lewis and Thornhill (2012:676) define ontology as the subdivision of philosophy within which the nature of reality is being studied. For most phenomena researched in business studies, researchers lean more towards objectivism, although subjectivism should not be discarded outright (Saunders et al., 2012:132). Objectivism could be described as the assumption that entities in a reality reside outside the influence of social actors, whereas subjectivism refers to entities being self-determined by the social actors.

Objectivism will be the ontology relating to this research study. This view accentuates structural facets in management, and those functions performed by different management teams from different firms are inherently the same (Saunders et al., 2012:131). Subjectivism will only lead to misalignment between the purpose of the research and the interpretation of the results and is therefore discarded as an option.

Epistemology refers to what type of knowledge will be deemed acceptable by research conducted (Saunders et al., 2012:132). The epistemology decided upon for the proposed research will be

positivism. This type of epistemology is ideally suited when observable data will be analysed, and correlations sought through statistical analysis. It is a widely accepted practice, when adopting a positivistic stance, to make use of existing theory, and is ideally suited to a quantitative approach (Saunders et al. 2012:134,162). In light of the research purpose, positivism is seen as a good fit.

According to Blumberg et al. (2008:20), a positivist approach allows for concepts to be operationalised to allow for quantitative measurements, which is exactly what this study entails. Conversely, an interpretivist approach involves a subjective interpretation from the researcher. Consequently, the findings will not be generalisable (Blumberg et al., 2008:21). It is hereby argued that a positivist approach is ideal in relating to the research at hand instead of an interpretivist approach, which would be ill-fitting.

3.3.2 Research design

The research philosophy will be positivism; the research approach will be based on deduction, with quantitative research as the chosen method. The research strategy will consist of an online survey, and the time horizon will be cross-sectional. As the purpose of the research is to determine to what degree Reformed Curatorship can reduce resource vulnerability in the South African wine industry, the various constructs of the instrument (survey questionnaire) will be subjected to structured equation modelling (SEM), and correlations between the various constructs would be determined. Therefore, the nature of the research design can be recognised as an explanatory study. This nature of research design is usually associated with research where correlations and relationships are sought between constructs by means of statistical analysis (Saunders et al., 2012:172). Causality between the constructs cannot be proven, but it can be implied.

Although the research will be undertaken in distinct phases, it is typified as mono-method quantitative. Rigorous pilot testing of the preliminary instrument is envisaged which might exhibit a qualitative slant, but this falls outside the parameters of a mixed-method study. This qualitative slant will be extended to the final phase of the research, where interviews will be held with several industry experts in order to prevent any contextual mistakes or misinterpretations. This approach is substantiated by Diamantopoulos and Schlegelmich (2000:206), with the following caution relating to inferring causality:

“Any notion of causality must come from practical knowledge or theoretical insights into the subject area...”

However, the philosophy relating to a formal qualitative enquiry is not supported and will interfere with the proposed deductive approach. It would also hamper the generalisability of the proposed research.

The reason for deciding upon a quantitative method is purely to adhere to the purpose of the research – to provide a generalisable answer. Saunders et al. (2012:162-163) indicate that quantitative research means that data get collected according to set conventions. This allows the data to be subjected to probability sampling techniques, from which generalisability could be derived. It is hereby argued that the research design and research purpose are adequately aligned.

Chapter 1 explains that wine producers could be classified in three categories. All three categories will be subjected to the research, and the wine producers will be the units of analysis. The unit of observation will be a suitable representative of these wine-producing entities: the cellar master, winemaker, general manager or owner of the wine-producing entity.

Saunders et al. (2012:193) describe internal validity as the degree to which two variables produce a specific outcome. Furthermore, they provide a list of several threats to internal validity. Of all the threats, only ‘testing’ is foreseen to be a hurdle to the research. Saunders et al. (2012:193) describe this threat as the impact of the research on the views of respondents. In order to surmount this obstacle, clarifying sentences with appropriate examples will be added to each construct with specific terms or non-industry related jargon.

The external validity of the study relates to its generalisability (Saunders et al., 2012:194). The study would be conducted to be replicable for any future research. Generalisability would extend only as far as the South African wine industry is concerned, provided that the foreseen sample sizes are met. In order to address the external validity, the critical validation of the questionnaire will be systematic, methodical and well-reported.

The following section will address the research methodology of the proposed research.

3.4 Research method

This section consists of six parts, each contributing to the explanation of how the proposed research is to be conducted in a systematic and methodical manner. Due to the complexities related to the research instrument and the construction thereof, it will be discussed separately in Section 3.5.

The research will be conducted in four separate phases:

Phase 1 – The development of the instrument from the literature review, including initial pre-testing.

Phase 2 – Rigorous pilot testing and reliability testing of the constructs, leading to questionnaire validation.

Phase 3 – Data collection. Units of observation will exclude industry experts.

Phase 4 – Interviews with selected industry experts to shed light on the results and findings.

3.4.1 Population and relevant sample

As stated in Chapter 1, Section 1.4.3, by 2015 there were more than 3200 wine-producing entities in the South African wine industry. This is then seen as the population, as the wine-producing entities will be the unit of analysis. The units of observation will consist of any person with managerial responsibility in terms of the entity. These will include owners, winemakers and cellar masters.

A similar study conducted by Newbert (2008) reported accurate observations by single respondents with managerial responsibility or core function capability within the micro- and nanotechnology sector in the USA (Newbert, 2008:762). The aforementioned study also pursued an investigation within RBV, and the attained accuracy threshold of the respondents was attributable to the ideal positioning, both of core function scientists and executives, to provide accurate observation (Newbert, 2008:762). The statistical analysis of this aforementioned study indicated a negligible amount of self-reporting bias (Newbert, 2008:762), despite the study employing a self-reporting questionnaire.

The aptness of owners, managers, cellar masters and winemakers to be the units of observation is hereby argued to be consistent in terms of method, intent and accuracy in light of the Newbert (2008) study, with a negligible amount of self-reporting bias expected.

For SEM to be conducted, a sample of 400 respondents is recommended, with a sample of 285 as set as the minimum requirement for this research, and an absolute minimum of 100. Kline (2011:12) asserts that when conducting SEM, an absolute minimum number can be assumed for less complex cases – an ideal sample size set at 200, and an absolute minimum sample size of 91.

A minimum of 30 respondents will be necessary for the pilot testing. Although this is below the recommended number of respondents according to DeVellis (2003:137) Saunders et al. (2012:266), a precedent for this exists due to the nature of the respondents. However, should there be any reason why the pilot testing cannot be conducted as envisioned, this will be reported.

Wilden, Gudargan, Nielsen and Lings (2013:88) reported that their research interrogating the link between dynamic capabilities and firm performance was statistically robust, after bootstrapping 91 respondents to 500 responses. This study also employed SEM, and the respondents were at senior managerial level. The similarity to the research concerning Reformed Curatorship in terms of research design provides a credible precedent.

As the units of observation (respondents) cannot be forced to complete the questionnaire, *inter alia*, due to ethical considerations, it is highly unlikely that any form of sampling other than convenience sampling will be used. However, should the kurtosis, skewness, mean and median of the distribution conform to the sample representative of random sampling (thus reflecting a normal distribution), post hoc inferences could be made to the scientific soundness of the convenience sampling method employed. The kurtosis refers to the shape of the ‘arch’ of a distribution and is primarily informed by the ‘tails’ of a distribution, whereas the skewness reflects the degree of symmetry within the distribution (Diamantopulos & Schlegelmich, 2000:91-92). In a normal distribution, the mode, median and mean will both coincide with a mesokurtic kurtosis and skewness of 0, or close to 0 (Diamantopulos & Schlegelmich, 2000:92-99).

The entire process will be systematic, methodical and replicable throughout. The limitations imposed by the sampling method are quite severe when viewed in isolation. It should be emphasised that the case for utilising convenience sampling will be robust and substantiated. There are a number of factors to consider in this regard.

Firstly, Wilkinson (1999:596) argues that convenience sampling does not disqualify the research outright, but that the usage of a convenience sampling method should be explicitly articulated, and the case strengthened by looking at the defined population and the statistical approach to be followed, as well as the nature of the data. Secondly, the population should be well defined in order to lend credibility to the findings and the associated interpretations (Wilkinson, 1999:595). The population for the proposed research is well defined. Thirdly, factor analysis and SEM are seen as extremely robust approaches, specifically designed to aid the conversion of a conceptual framework into a model (Kline, 2011:8). Fourthly, the context in which the convenience sampling method is expressed is in line with well-articulated units of analysis (wine producers) and units of observation (winemakers, owners or cellar masters). Fifthly, in order for convenience sampling to add value, an assumption must be made that the sample is in fact representative of the population (Statistics Canada, 2010:88). This assumption shall be argued on the basis of an adequate sample size, consisting of respondents from a well-defined population, units of analysis and units of observation. Finally, the reason why convenience sampling is chosen stems from the ethical consideration of treating all respondents as volunteers.

Further evidence supporting the use of convenience sampling in business research can be found in Blumberg, Cooper and Schindler (2008:251-253). The authors indicate that concepts, perceptions or abstract ideas which cannot be linked to a common scale, can be proven. Also, should the evidence be logical, methodical and overwhelming, a more sophisticated sampling procedure may be deemed unnecessary. Also, whilst probability sampling is theoretically ideal, absolute probability sampling may only be partially achieved due to inevitable human involvement (Blumberg et al., 2008:252).

3.4.2 Planned field work and data capturing

Barry, Chaney, Stellefson and Chaney (2011:99) provide two criteria to be met before an instrument is developed for research. There must be no existing appropriate instrument, and the researcher should

exhibit a clear understanding of scientific literature from which constructs could be developed. In terms of the proposed research, both these criteria are met.

Precedents have been set in terms of utilising a Likert-type multi-item scale concerning RBV-related studies. Two notable examples include studies conducted by Lu, Zhou, Bruton and Li (2010) and Newbert (2008).

The preliminary instrument will exhibit a Likert-type format, consisting of approximately nine constructs. Each construct will be derived from the literature, consisting of several questions. The pilot testing of the questionnaire will involve approximately 30 respondents.

The manner in which the data will be captured will be with an electronic survey instrument, specifically utilising the LimeSurvey platform. The procedure for data collection (during the pilot testing and the actual data collection phase) will be as follows:

- Respondents will be phoned and asked if they are willing to participate. Contact information to be obtained from a public source (Platter's Wine Guide).
- If willing to participate, an email with a link of the electronic survey will be sent to them.
- Their details will be entered in an informal data base (to track participation).
- As part of the survey, clarifying information ensuring confidentiality, along with the ethical clearance certificate, will be made available prior to the respondent completing the survey.
- The data will be imported into SPSS, from whence factor analysis, regression analysis and SEM will be conducted.
- To assure anonymity, the units of analysis will be sequenced alphabetically and reversed.

The aforementioned principles were utilised by the researcher in 2014 when research was conducted in the South African wine industry, which yielded a 23% response rate with a paper-based and email approach. In terms of the population, the required response rate for this research to be successful is 16% - assuming a sample of approximately 400. Complete anonymity was ensured and maintained. Problems from 'gatekeepers' (secretaries or receptionists) were found to be negligible during the 2014 study and are expected to remain as such for the proposed study.

3.4.3 Reliability

Babbie (2008:157) defines reliability as “[T]hat quality of measurement method that suggests that the same data would have been collected each time in repeated observations of the same phenomenon.” Several techniques have been standardised and adopted, relating to cross-checking reliability of a scale (Babbie, 2008:158). Diamantopulos and Schlegelmich (2000:36) provide a comprehensive overview of different measures of reliability. These measures will be discussed individually in the following subsections.

3.4.3.1 *Test-retest reliability*

This method relates to the consistency with which the respondents provide the same responses within similar testing conditions and is tested by administering two tests to the same respondents on two separate occasions (Diamantopulos & Schlegelmich, 2000:36).

Zikmund, Babin, Carr and Griffin (2010:306) indicate that test-retest reliability is mostly applicable to longitudinal studies, but low correlations between first and second administrations of questions might differ due to a change of attitude of the respondent and does not necessarily indicate low reliability. Test-retest reliability will be difficult to measure, considering that the proposed research will be a cross-sectional study.

It is foreseen that some of the 30 respondents taking part in the pilot study will retake the questionnaire, and this will provide a good indication of this type of reliability.

3.4.3.2 *Alternative forms of reliability*

This relates to the result consistency of two different types of the same measurement (Diamantopulos & Schlegelmich, 2000:36). In simpler terms, it measures the consistency of results if questions were administered telephonically versus the foreseen online distribution method.

It is not foreseen that this measure of reliability would be applicable to this study. However, should it become necessary to administer the survey in an alternative form, effort will be made to test the same (or another) respondent twice, using the two different types of the same survey.

3.4.3.3 *Split-sample reliability*

This refers to the consistency of results from randomly-selected samples post data collection (Diamantopulos & Schlegelmich, 2000:36). Should there be more than 400 responses, this test will be conducted and reported on. Should there be a lower number of responses, this method might be applied retrospectively to see if a smaller sample size could have been utilised.

3.4.3.4 *Internal consistency reliability*

This relates to the consistency of the results scale items which forms part of a composite scale (Diamantopulos & Schlegelmich, 2000:36). The Cronbach coefficient Alpha (α) is used to determine the reliability related to internal consistency of each construct (Kline, 2011:69). Should the coefficient be lower than 0.7, the construct will be amended to ensure reliability.

3.4.3.5 *Scorer reliability*

Scorer reliability refers to the consistency of scoring provided by judges, specifically related to open-ended questions (Diamantopulos & Schlegelmich, 2000:36). This genre of reliability is not applicable, due to the research design of Reformed Curatorship, and the research instrument consists of close-ended questions.

3.4.4 Validity

Leedy and Ormrod (2010:92) define validity as the degree to which an instrument measures what it is envisioned to measure. Babbie (2008:160) defines validity as “[The] term describing a measure that accurately reflects the concept it is intended to measure,”. Both Babbie (2008:160) and Diamantopulos and Schlegelmich (2000:34-35) indicate that there are three main types of validity, which will be discussed individually.

3.4.4.1 *Content validity*

This refers to the extent to which the instrument appears to measure appropriate proportions of the content domain (Leedy & Ormrod, 2010:92). Babbie (2008:161) defines content validity as the extent to which a concept or construct covers the range of meanings included within a concept. Diamantopulos and Schlegelmich (2000:34) categorise face validity within the realm of content validity. Face validity is subjective in nature and does not provide sufficient evidence of correct measurement as a facet on its own. Face validity will be ‘tested’ during the pretesting phase of the instrument, and all related findings thereof reported and applied to the instrument. The content validity will be reported on after pretesting has been completed, as industry and subject matter experts have provided their respective feedback.

3.4.4.2 *Criterion validity*

Diamantopulos and Schlegelmich (2000:35) articulate this type of validity as the degree to which an individual’s score on one characteristic can be used to predict the score on another measure. Babbie (2008:161) mentions that the term ‘predictive validity’ is interchangeable with criterion validity. By using factor analysis, regression analysis and SEM, the relationships between the latent variables will be obtained and reported on during the analysis phase. It is predicted that the units of analysis which indicates a high score relating to performance (the dependent variable), exhibits a strong but negative correlation to the mediator, prevalence to resource vulnerability.

3.4.4.3 *Construct validity*

Construct validity refers to the extent to which a behaviour or abstract notion can be measured, and how it corresponds to empirically grounded theory (Diamantopulos & Schlegelmich, 2000:35). After conducting factor analysis, regression analysis and SEM, correlations between latent variables will indicate a pattern of fit relating to the expected outcome of the model – these correlations will be reported once computed, specifically after the pilot study phase of the research.

3.4.5 Levels of measurement

There are four conventional levels of measurement, each respectively imbued with limitations on data analysis (Diamantopulos & Schlegelmich, 2000:24-26):

- The first type is the nominal scale, which refers identification or classification. This level of measurement ensures that the property of equivalence (category or identity) can be articulated. The only mathematical activity which is allowed is that of counting, which in turn implies that only the mode (the value occurring with the greatest frequency) can be used as a form of analysis.
- The second type is the ordinal scale, which refers to the ability to rank the results. Apart from being able to calculate the mode, the median (the value between which the lowest and highest scores lie) can also be established.
- The third type is the interval scale, which exhibits equality of intervals, which allows for the mean (the algebraic average) to be calculated. The interval scale differs from the ratio scale, the fourth level of measurement, in terms of the zero point – an interval scale exhibits an arbitrary zero point whereas the ratio scale exhibits an absolute zero point.

Interval and ratio scales allow for parametric tests to be conducted, whereas only non-parametric tests can be conducted when utilising a nominal or ordinal scale. The raw data yielded by the scale items (the numerical value of the responses) will be ordinal in nature, but collection of activities within SEM will ensure that the data will assume the characteristics of interval data type, referring specifically to the coefficients between the variables. This ensures that the dangers associated with a pragmatic approach (Diamantopulos & Schlegelmich, 2000:29), where ordinal data is treated as if it is interval data, are circumvented to a large degree.

The raw item scores in terms of the third order constructs will be ordinal in nature. Due to the Central Limit Theorem, a normal distribution will be assumed in terms of the sample. By conducting factor analysis, and the subsequent regression analyses, the nature of the data will change from ordinal to interval data (Harwell & Gatti, 2001:105).

3.4.6 Data analysis

As stated, SEM will be conducted once all data are collected. SEM refers to a collection of related statistical procedures, and although path dependence and correlation can be proven, causality cannot (Kline, 2011:7). The following statistical tests are foreseen to be utilised:

- *Item / variable screening*. This will include descriptive statistics relating to the third order sub-dimensions. The mean, standard deviation, kurtosis and skewness will be reported.
- *Independent t-tests*. Provides information about the sample size, sample mean, sample standard deviation and standard error of the mean (Diamantopulos & Schlegelmich, 2000:162).
- *Pearson's product moment correlation*. Used to examine the linear relationships between variables - a coefficient of -1.0 means a strong, but negative correlation between variables, and a coefficient of +1.0 refers to a strong, positive linear relationship between variables (Diamantopulos & Schlegelmich, 2000:203).
- *Multi-variate analysis of variance (MANOVA)*. Allows for the comparison of various variables (Diamantopulos & Schlegelmich, 2000:209).
- *Exploratory factor analysis (EFA)*. A statistical procedure used to assess the measurement model of a single construct. This differs from CFA, as there is no hypothesis relating to the latent factors and observed variables (Hox & Bechger, 1999:2-3).
- *Standardised regression coefficient*. Coefficients that are derived when the equation is fitted to standardised variables. Variation is measured in terms of standard deviation (Freedman, 2009:85-86).

The value of SEM lies in its confirmatory nature relating to hypothesis testing, unless the data are inconsistent with the model, which means that the model could be amended (Kline, 2011:8). The iterative process of the basic steps relating to SEM is depicted below (Kline, 2011:92):

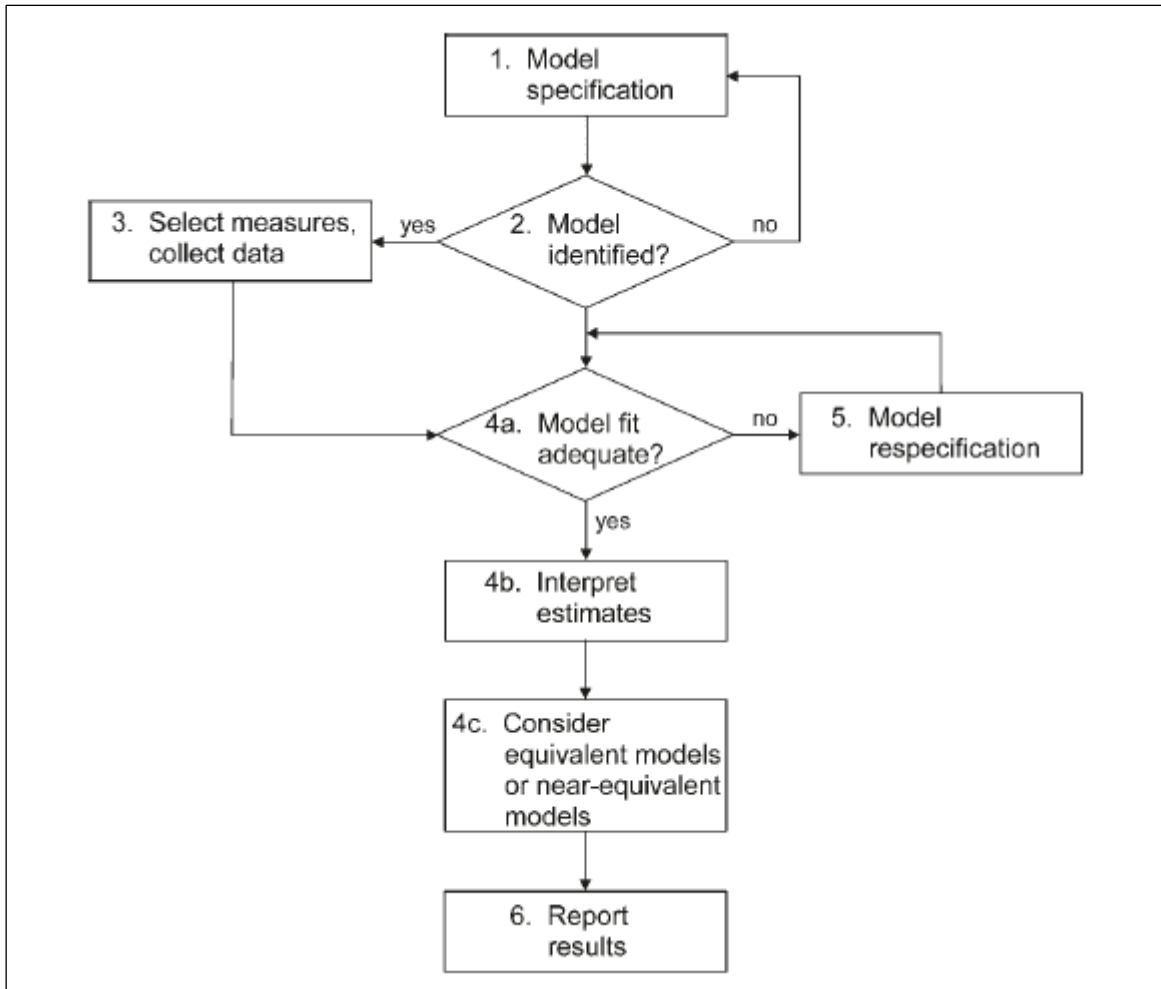


Figure 3.1: *Flowchart of the basic steps relating SEM (Kline 2011:92).*

This method of analysis is therefore suited to the research purpose and research design. It should be noted that SEM could determine directionality between constructs but warns that correlation does not imply causality (Kline, 2011:100).

3.5 Scale design

The following section and related subsections will indicate that a systematic, methodical and iterative approach was followed, relating to the design of a scale.

A general background relating to scale design will indicate the importance of observation and how a scale is used to bridge the gap between mere observations and the inferential reporting of those results. The anatomy of a scale will be discussed, articulating the various parts thereof, after which an argument will be formed in favour of scale design for this research.

Considerations relating to scale design will be thoroughly tabulated, indicating various overlapping considerations from authors on the subject of scale design. Outlines of the constructs will be graphically depicted, followed by the design of the scale structure, which will show how the scale was carefully extrapolated from the constructs.

The creation of the scale items will be discussed, and the connection between the sub-dimensions and the scale items (questions) clearly drawn. The performance as the dependent variable and how it will be observed will be discussed, culminating in a discussion and graphical illustration relating to the steps followed in terms of scale design.

3.5.1 Background to scale design

For research to adhere to the scientific method of inquiry, it must be supported empirically and logically, which in turn allows for observations to make sense, to be replicable and to be founded on accepted theory (Babbie, 2008:6). Research more rigorous and complex than mere casual human inquiry is thus crafted, which in turn aids in eliminating certain errors. These errors include inaccurate observations, overgeneralisation, selective observation and illogical reasoning (Babbie, 2008:8-10).

In order to adhere to the scientific method of inquiry, the rigorous, methodical and systematic approach related to research design as a whole is dependent on the quality and characteristics concerning the research scale. This allows for observations of reality to be compartmentalised in such a way as to describe how things are, not how they ought to be (Babbie, 2008:13). It also enables the researcher to

be able to quantify the observations in order to make sense of the observations and their underlying constructs (DeVellis, 2003:3). According to Babbie (2008:135), a construct could be described as “...*theoretical creations that are based on observations but that cannot be observed directly or indirectly,*”.

3.5.2 The anatomy of a scale

All scales consist of various conventional parts, each part having a specific, definitive meaning. This ensures adherence to the scientific method of inquiry, especially relating to replicability of research. Of greater import is the gratification of the basic scientific underpinning of knowledge – agreement (Babbie, 2008:5).

All measurements are initially qualitative. Quantification of a measurement unlocks the possibility of statistically deriving further meaning from a set of observations (Babbie, 2008:25).

Higher-order, abstract or complex facets cannot be observed in the same manner as the amount of water in a chemical beaker, or the growth rate of an array of plants in a greenhouse. Yet the scientific method of inquiry offers a conventional approach to address this challenge by utilising constructs, dimensions, sub-dimensions and scale items.

A construct is nothing more than some mental creation serving as an intellectual vessel, carrying with it certain agreed-upon theory and observations. It has no intrinsic value, but it does aid in categorising, and transferring comprehension related to abstract concepts (Babbie, 2008:136). The causeway between the construct and observables (indirect and direct) is known as conceptualisation – described as the way in which we define the meaning of what we research. According to Babbie (2008:136):

“[Conceptualisation is] the mental process whereby fuzzy and imprecise notions (concepts) are made more specific and precise.”

Closely related to conceptualisation is the concept of operationalisation, which is the development of operations which allow the empirical observation of specific concepts and defining the range of variation among concepts applicable to the specific research (Babbie, 2008:147).

Conceptualisation and operationalisation lead to the creation of variables and the determination of the attributes which underpin them. Attributes are defined as the trait of something, and variables are defined as a logical set of attributes (Babbie, 2008:149). Furthermore, variables must adhere to two strict requirements. Firstly, one must be able to categorise every observation related to that variable to an attribute underpinning that variable. Secondly, the attributes constituting a variable must be mutually exclusive (Babbie, 2008:149).

With complex concepts, certain attributes could be termed ‘indicators’, which could be categorised into ‘dimensions’ of a variable (Babbie, 2008:137).

3.5.3 Need for designing a scale

The aforementioned constraints imposed on a multi-item scale indicate that the design thereof is intricate, time-consuming and pervasive (Barry, Chaney, Steffelson & Chaney, 2011:97). Various authoritative authors on scientific scale development, such as DeVellis (2003:11) laments the nonchalance exhibited by researchers during such endeavours. Others, such as Barry et al. (2011:97), propose that existing scales which have been proven reliable and valid should be sought prior to the development of a new scale.

However, in the absence of existing scales, it should be borne in mind that any newly-constructed scale must measure the specific constructs related to the research in question, in which case the researcher has no other choice but to develop a unique, suitable scale (Barry et al., 2011:97).

The research currently conducted (being that of Reformed Curatorship) needs a uniquely designed scale for two reasons. Firstly, the original concept of Le Breton-Miller and Miller (2015) was conceptual and no instrument could be found resembling the original constructs. Secondly, some of the theory from Le Breton-Miller and Miller was not only found to be dubious, but in certain cases flawed or the opposite of what was stated – to such an extent that the overall concept had to be changed sufficiently for the concept to be renamed.

3.5.4 Considerations relating to scale design

In a situation where scale development must take place, numerous considerations need to be heeded. Due to the number of considerations, a table was constructed, indicating the various considerations and the associated references (see Table 3.1). The critical element within each consideration has been highlighted for ease of reference. The considerations are presented randomly; thus, the order in which they appear has no bearing on their importance.

#	Consideration	Reference
1.	Imperfect measurement must be declared and worked into the understanding of the conclusions which could be drawn from the data.	DeVellis, 2003:10
2.	Brevity should never take precedence over completeness in order to make the survey experience shorter or more enjoyable for the respondent, as this has a destructive effect on the validity of the scale employed.	DeVellis, 2009:10
3.	If the scale is a questionnaire, the questions must reflect the fact that the unit of observation is an individual , even though the unit of analysis might be an entity, which is the case with the current research.	Babbie, 2008: 270
4.	Close-ended questions provide ease of computation and homogeneity in responses, but the different ‘options’ must not overlook a possible response within the range tested.	Babbie, 2008:273
5.	The ‘options’ within the close-ended questions should include all possible answers, and they need to be mutually exclusive.	Babbie, 2008:273
6.	Individual questions should be unambiguous to avoid misinterpretation from the respondent.	Babbie, 2008:273 Hofstee, 2006:133 Mouton, 2001:103

7.	The question should evoke only one possible answer, and not fall into the category of ' double-barrelled questions '. The presence of the conjunction 'and' in a question indicates a possible 'double-barrelled' question.	Babbie, 2008:274 DeVellis, 2003:68 Mouton, 2001:103
8.	Respondents must be capable of answering the questions dependably.	Babbie, 2008:274 Mouton, 2001:103
9.	None of the questions should impose a prohibition onto the respondent to answer – this normally refers to sensitive information or industry secrets.	Babbie, 2008:274
10.	Each question should be short in order for the respondent to select a choice quickly. This will aid clarity and facilitate speed of completion of the questionnaire.	Babbie, 2008:276 DeVellis, 2003:67
11.	Negation should be avoided. A negation might lead to misinterpretation of the question.	Babbie, 2008:276
12.	Avoid bias in a question. This refers to a question which is worded in such a way as to evoke an undesirable emotional response (such as humiliation) or could subjectively influence the choice of the respondent.	Babbie, 2008: 277 DeVellis, 2003:68
13.	The format of the questionnaire should lean towards spaciousness and not be cluttered.	Babbie, 2008:278 Hofstee, 2006:133 Mouton, 2001:104
14.	The use of contingency questions should be considered. This refers to questions which could indicate to respondents that, based on their first answer, no subsequent questions have to be answered.	Babbie, 2008:279

15.	The sequence of the questions should not lead to biased answers within each construct.	Babbie, 2008:281
16.	The questionnaire instructions should be brief, but clear. Also, any subsections must be introduced with an introductory sentence . These sentences aid the respondent in making sense of the questionnaire.	Babbie, 2008:282 DeVellis, 2003:62-63 Barry et al. 2011:101
17.	Representativeness for online surveys should be established beforehand.	Babbie, 2008:300
18.	Use consistent terminology throughout the survey.	Babbie, 2008:301
19.	Utilise language that is simple and plain.	Babbie, 2008:301 DeVellis, 2003:67
20.	Ensure that the respondent does not have to scroll down to an URL.	Babbie, 2008:301
21.	Offer the results of the study to prospective respondents.	Babbie, 2008:301
22.	Avoid sending the invitations of online surveys over weekends or after-hours .	Babbie, 2008:301
23.	Be aware of technological limitations (such as interchangeability between Android and PC browsers to view the questionnaire).	Babbie, 2008:301
24.	Theory should aid clarity of the questions and the way in which the questions are asked. Theoretical bounds of the construct should be ascertained beforehand.	DeVellis, 2003:60 Barry et al. 2011:98
25.	The level of specificity or generality within each construct should be similar.	DeVellis, 2003:60
26.	There is no hard and fast rule related to the number of items (questions) within a construct . Should there be an unusual number of questions in a construct, it could be reduced at a later stage or during pilot-testing.	DeVellis, 2003:66

27.	Respondents must be able to make a meaningful discrimination between the various ‘options’ in close-ended questions.	DeVellis, 2003:75
28.	Mild statements should be avoided when using the Likert scale, as it evokes too much concurrence from the respondent.	DeVellis, 2003:79
29.	Reverse-scoring could confuse respondents.	DeVellis, 2003:92
30.	Anonymity should be offered to the respondent, along with how it will be ensured.	Hofstee, 2006:133
31.	For a long questionnaire, let the respondents know how far they are at certain intervals .	Hofstee, 2006:133
32.	The questions should not be phrased in a way to ‘lead’ the respondent to a specific response (this is slightly different from bias which has already been addressed, as ‘leading’ refers to specific, directional bias).	Hofstee, 2006:134 Mouton, 2001:103
33.	Have a section where the respondent can make an open-ended statement , especially at the end of the questionnaire if the scale chosen is confined to open-ended questions.	Hofstee, 2006:134
34.	Mono-operational bias should be circumvented . A construct should not be measured by a single question.	Mouton, 2001:104

Table 3.1: *Various considerations to consider during scale development (researcher’s compilation derived from Babbie (2008), DeVellis (2003), Hofstee (2006) and Mouton (2001)).*

There are certain techniques which yielded greater response rates with mail-based surveys, which differ from online survey dissemination. Reference to the status of the researcher to the respondent, or that the respondent was specifically chosen to participate in the research, have had little impact on the response rates of online surveys (Babbie, 2008:301). The advantage of online surveys is that they are generally cheaper and quicker to administer, as long as the representativity of the respondent cannot be taken into question (Babbie, 2008:302).

3.5.5 Outlines of the constructs

The overall outline of the constructs can best be described by its graphical depiction, as can be seen in Fig. 3.2 below.

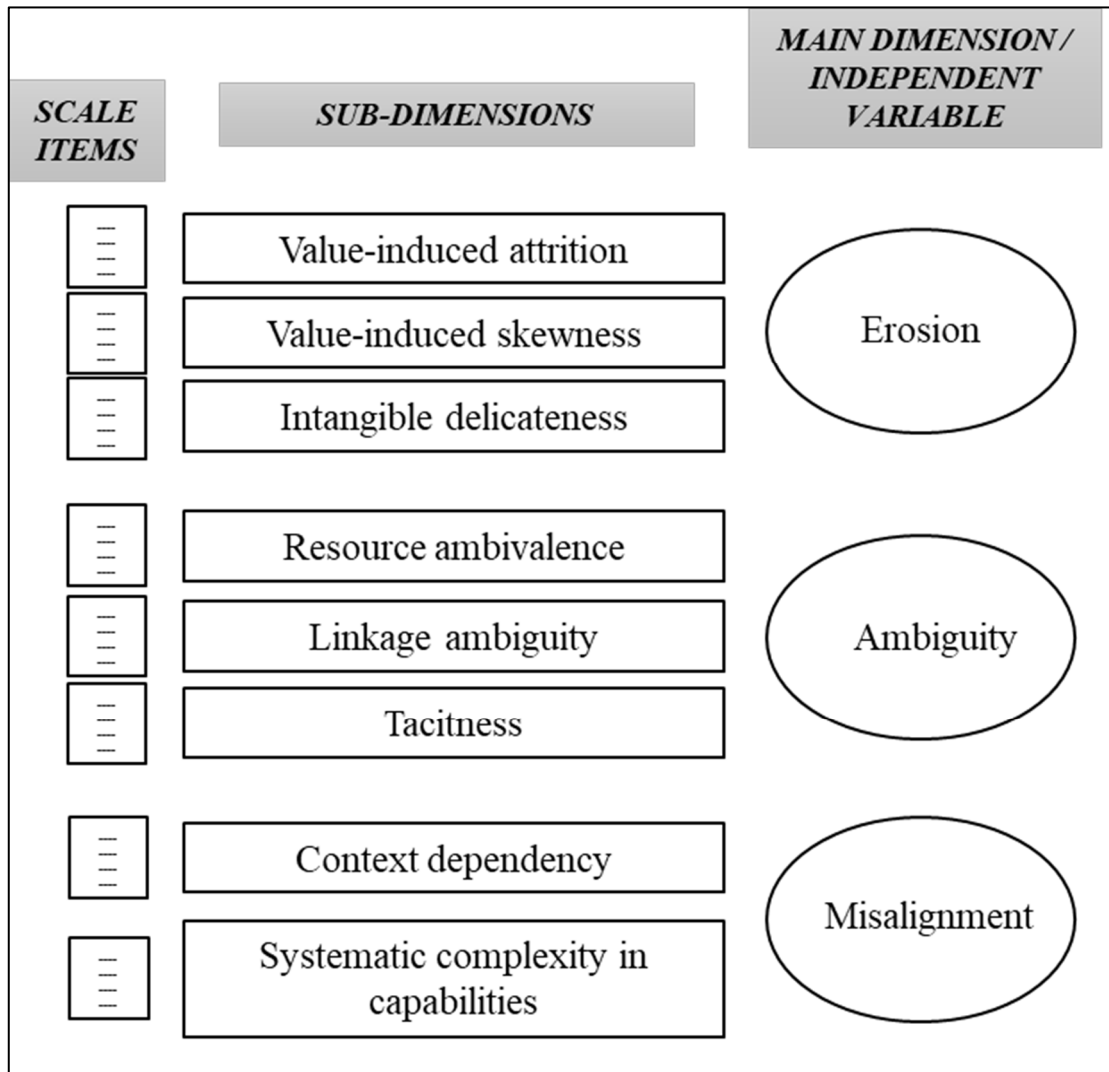


Figure 3.2: *Basic outline of constructs*

The constructs (main dimensions and sub-dimensions) are identical to the constructs redeveloped during the literature review and displayed in Fig. 3.2. During the review of literature and redevelopment of the constructs, erosion, ambiguity and misalignment were grouped under the term ‘challenge’, which becomes a construct in its own right. The term ‘challenge’ is deemed too vague, therefore the more

specific term ‘prevalence to resource vulnerability’ will be used forthwith. In keeping faith with the scientific method of inquiry, these independent (latent) variables can thus be categorised as third order, second order and first order dimensions (see Fig. 3.3).

It is necessary to link these constructs against a dependent variable. The variable chosen was ‘performance’, which will be discussed in detail in section 3.5.7.4. It should be noted that ‘performance’ is also a construct in its own right.

3.5.6 Development of the scale structure

The entire scale can be represented by the following figure (Fig. 3.3). The construct ‘prevalence to resource vulnerability’ will act as a mediator between the independent variables and the dependent variable, ‘performance’.

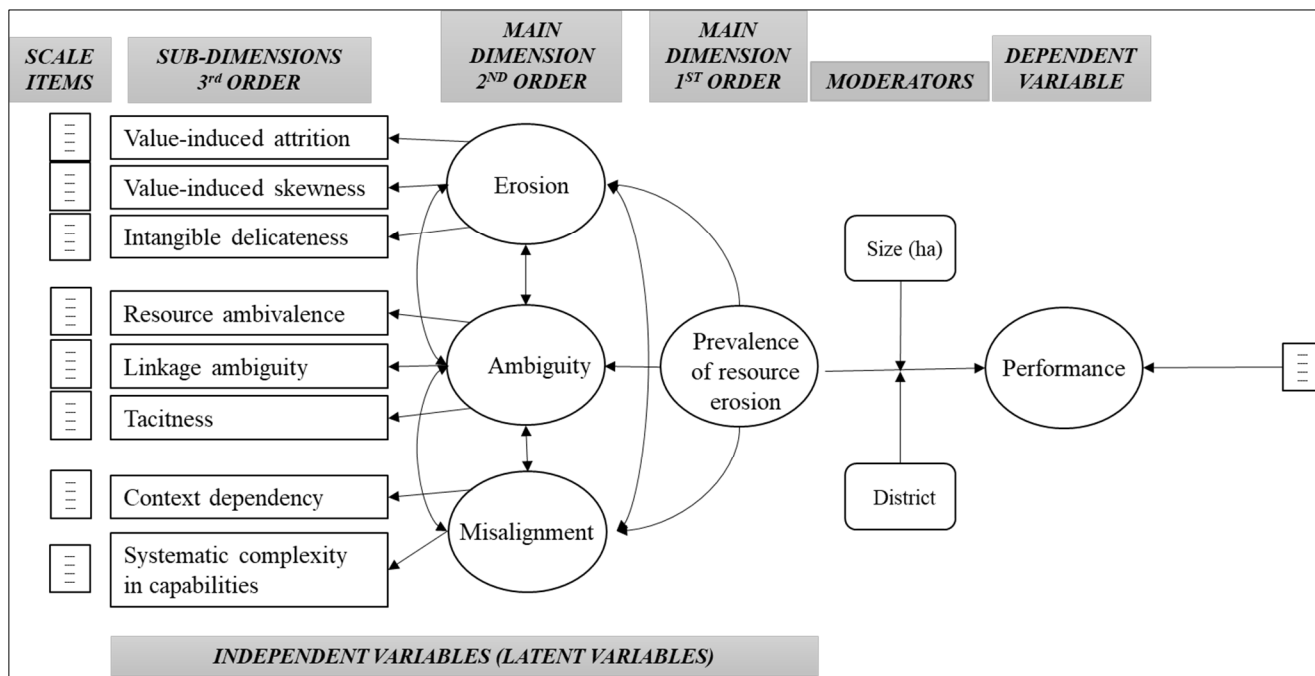


Figure 3.3: *The design and structure of the entire scale.*

The reason for the structure chosen is to fit in with what is being measured by using structural equation modelling. This will facilitate the graphic depiction of model fit and path coefficients, as well as the interpretation of all the foreseen analyses.

3.5.7 Generation of scale items.

This section will articulate the indicators underpinning each sub-dimension and dimension. It should be noted that the phrasing used is not the same as that which is found in the questionnaire, as the purpose of this section is to methodically and systematically explain which attributes were used. In all cases, the presence of the attribute is measured, not its frequency. It should be noted that all the considerations necessary for scale design, as noted in Table 3.1, were followed.

For sub-sections 3.5.7.1 - 3.5.7.3, the combination of phenomena present will create an environment in which resource vulnerability will be prevalent (see Sub-section 3.5.7.4), according to the concept of Reformed Curatorship.

The five-point Likert scale wording was standardised, the options ('not at all'; 'to a lesser degree'; 'to some degree'; 'to a large degree' and 'definitely') corresponding to values 1 to 5 respectively.

3.5.7.1 *Erosion*

The dimension of erosion, as well as its related sub-dimensions (value-induced attrition, value-induced skewness and intangible delicateness) were critically redeveloped in Chapter 2, from whence the relevant scale items were developed (Table 3.2 below). One indicator related to value-induced attrition – hubris - was discarded, as it was established that it could only be measured retroactively. Also, any question relating to poor governance or board oversight contravenes the ninth and twelfth considerations (prohibition and bias) and could not be asked.

3.5.7.2 *Ambiguity*

Ambiguity and its related sub-dimensions (resource ambivalence, linkage ambiguity and tacitness) were critically redeveloped in Chapter 2, from whence the relevant scale items were developed (Table 3.3 below). In terms of the sub-dimension 'linkage ambiguity', no formal definitions were set out to

differentiate between ‘information’ and ‘knowledge’, nor was the concept of knowledge divided into categories of explicitness and implicitness. The terms were kept simple on purpose, and the subdivisions would only have served to confuse the respondent. Furthermore, no distinction was made between ‘information’ and ‘knowledge’ in the last scale item of ‘linkage ambiguity’, as an overall presence of complexity is being measured.

3.5.7.3 *Misalignment*

The sub-dimensions of misalignment include ‘context dependency’ and ‘systematic complexity in capabilities’, also redeveloped in Chapter 2. Table 3.4 below depicts the indicators and their conversion to scale items. In terms of ‘context dependency’, the phrasing of the first scale item was deemed ambivalent, or easy to misunderstand. To mitigate this, the words ‘other than that...’ was put in bold and underlined in the physical questionnaire.

Sub-dimension	Indicator as derived from literature review	Phrasing as a scale item
Value-induced attrition <i>[relates to specialists, supervisors or managers as individuals]</i>	Display of self-promoting behaviour.	<i>These individuals exhibit self-promoting behaviour.</i>
	Approached by rival firms.	<i>These individuals have been approached by another organisation.</i>
	Bargaining for remuneration and other benefits.	<i>These individuals bargain for better remuneration or any other benefits.</i>
	Salaries versus industry norm.	<i>These individuals enjoy inflated salaries compared to the industry standard.</i>
	Media attention.	<i>Some of these individuals enjoyed above-average media attention due to their performance within the organisation.</i>
	Aside from good performance, trouble is caused somewhere else in the organisation.	<i>Apart from their work-related contribution, these individuals cause trouble within their departments or within the organisation.</i>
Value-induced skewness <i>[relates to departments or divisions within the firm]</i>	Subjective allocation of resources per department.	<i>Some departments enjoy a greater allocation of resources at the expense of other departments.</i>
	Need to fight or earn resources by each department.	<i>Departments feel that they need to 'fight' for, or 'earn' their resources or budgets.</i>
	Destructive adaptability to resource allocation (competency trap).	<i>Departments adjust to their resources or budgets instead of 'fighting' for more.</i>
	Established way of doing things in a department contextually describing inability to self-correct.	<i>Departments do things in an established way.</i>

	Resources allocated to departments that perform better.	‘Successful’ or ‘well-performing’ departments receive the lion’s share of resources or budget.
Intangible delicateness	Misperception of reputation as an asymmetric resource.	<i>It takes an organisation a short time to establish a good reputation.</i>
<i>[relates to abstract facets, such as the organisation’s reputation or morale of the employees]</i>	Misperception relating to the fragility of reputation.	<i>The organisation’s reputation is resilient and cannot be damaged easily.</i>
	Misperception about the intensity of morale sustainment.	<i>Establishing and maintaining high morale of employees requires little attention and focus.</i>
	Presence of morale erosion.	<i>With the way things are going, morale could be eroded quickly.</i>
	Misperception of morale and fragility.	<i>In our organisation, morale could be described as robust and resistant to change.</i>

Table 3.2: Scale item generation relating to erosion.

Sub-dimension	Indicator as derived from literature review	Phrasing as a scale item
Resource ambivalence [relates to people as resources]	Subjective evaluations from managers.	<i>Employees are evaluated subjectively.</i>
	Destructive ambivalence exhibited by employees.	<i>Employees create value in one part of the firm, whilst destroying value somewhere else.</i>
	Wrong value assigned to an employee.	<i>Employees who have exited the organisation did so because they felt under-valued.</i>
	Misaligned employee evaluations	<i>Overall, evaluations from managers are inaccurate.</i>
	Discontent related to evaluations	<i>Employees discontent with their evaluation would have been better off had they not been evaluated in the first place.</i>
Linkage ambiguity [relates to the linkages between departments concerning information and knowledge within the organisation]	Difficulty of information transfer.	<i>To transfer information within the organisation is complicated or difficult.</i>
	Difficulty of knowledge transfer.	<i>To transfer knowledge or 'know-how' is difficult.</i>
	Presence of formal processes relating to information.	<i>The organisation lacks processes which facilitate the transfer of information.</i>
	Presence of formal processes relating to knowledge.	<i>The organisation lacks processes which facilitate the transfer of knowledge.</i>
	Presence of complexity in an implied horizontal and vertical transfer system.	<i>Any process used to transfer knowledge or information within the organisation could best be described as being complex.</i>

Tacitness [relates to unspoken, intangible facets such as knowledge, communication and ambiguity within the organisation]	The degree to which tacit knowledge is being held within individuals.	<i>Work-related knowledge or 'know-how' resides within certain individuals.</i>
	The prevalence of tacit knowledge overall.	<i>Knowledge or 'know-how' in the organisation is unwritten or uncodified.</i>
	Difficulty in transfer of knowledge.	<i>Employees have difficulty in transferring knowledge to juniors or to peers.</i>
	Presence of general ambiguity.	<i>There seems to be ambiguity or ambivalence within the organisation.</i>
	Presence of misunderstandings.	<i>Misunderstandings arise when communication between individuals or departments take place.</i>

Table 3.3: *Scale item generation relating to ambiguity.*

Sub-dimension	Indicator as derived from literature review	Phrasing as a scale item
Context dependency [relates to the context within the organisation in which resources are utilised]	Wrong usage of resources.	<i>Resources are used for the purpose <u>other than that</u> for which they are intended.</i>
	Disruptive internal environment.	<i>The circumstances within the organisation or departments change often enough to be disruptive.</i>
	Prevalence of wrongful justification of wrongful resource application.	<i>Circumstances determine how resources should be used, regardless of whether a resource is utilised for an unintended purpose.</i>
Systematic complexity in capabilities [relates to the degree of complexity within the organisation]	Degree to which resource bundling is present.	<i>Resources are mixed with capabilities in order to produce results.</i>
	Complexity of value chain.	<i>There is a vast range of resources and capabilities needed to achieve results.</i>
	Complexity of resources, or resource bundles.	<i>Resources and capabilities employed throughout the organisation could be described as complex.</i>

Table 3.4: Scale item generation relating to misalignment.

3.5.7.4 Prevalence of resource erosion

As discussed in Section 3.5.5, the first order main dimension has been renamed as ‘prevalence of resource erosion’. This is done to provide context and eliminate any ambiguity. As the first order main dimension, this latent variable is the underlying construct which aligns with ‘challenges’ as laid out in Chapter 2, Section 2.7.

3.5.7.5 *Moderators*

According to Frazier, Tix and Barron (2004:116), moderators are variables which could alter strength or direction between independent and dependent variables. It normally involves some categorical attribute, such as gender, but can be coded as a continuous variable. The two moderators entrenched in the Reformed Curatorship relate to size (hectares under vine) and district (location) respectively. This information is publicly available and thus will be obtained from a secondary source – Platter’s 2019 South African Wine Guide.

The reason for including moderators is two-fold. Firstly, it provides greater gravitas and sophistication to the study as a whole. Secondly, from literature related to the South African wine industry, the size of a wine-producing entity and its location cropped up constantly as important variables relating to performance and resource utilisation challenges (see Chapter 2, Section 2.8.1).

It is expected that size would play a small part as a moderator, and that location would moderate the relationship between the first order dimension and the dependent variable to some degree. This expectation is due to the universal, generic principles from which Reformed Curatorship was derived. Low moderation would indicate that the framework (and ultimately, the model) has a universal character, and that few (if any) amendments would be needed if the model is to be used in other industries. Should a significant moderation effect be detected, it would imply that the model would need some adaptation relating to the industry in which it is used. Either way, the inclusion of moderators would add significant value to the study.

Three moderation effects are possible: antagonistic, enhancing and buffering (Frazier et al., 2004:117-118). An antagonistic effect relates to a strong moderation effect but in the opposite direction of the latent variable, an enhancing effect relates to strong moderation in the direction between the latent variable and dependent variable, and buffering relates to a weakening effect between the latent and dependent variables.

The two most important facets relating to moderators are reliability and sample size (Frazier et al., 2004:118-119). The reliability of both moderators cannot be taken into question, as it will be derived from a reputable source. It is advised that the sample size be larger than 180 for accurate moderation

effects to be derived. As a sample size of 400 is foreseen to be obtained, a ‘too small sample’ will not negatively contribute to the accuracy of the findings.

3.5.7.6 *Firm performance*

How does the construct of ‘performance’ relate to Reformed Curatorship? Reformed Curatorship consists of two ‘silos’ – three constructs indicating the prevalence of resource vulnerability (erosion, ambiguity and misalignment) and three opposing constructs as respective, contextual antidotes (preservation, connoisseurship and orchestration).

Ideally, the measuring instrument should test both ‘silos’, and their relationships with firm performance (as well as with each other) should be established. There are two impactful hindrances – the impact of any one hindrance disqualifies the method of testing both ‘silos’ simultaneously.

Firstly, the questions pertaining to the first ‘silo’, together with the performance construct, are already in the region of fifty individual questions. This number would increase to approximately ninety questions, which would negatively impact the response rate. This practical consideration alone is of high importance due to the high number of responses needed for the structural equation modelling integral to this research.

Secondly, although a rigorous and aggressive review of the literature aligned the theoretical constructs, this alignment of the first ‘silo’ to the second ‘silo’ has not been empirically tested before. Thus, should the first ‘silo’ not negatively correlate with positive firm performance, but some second ‘silo’ constructs do correlate positively with firm performance, all results of this study will be rendered causally ambiguous at the expense of the research problem.

Once the first ‘silo’ has been correctly and scientifically measured against firm performance and the implications of the results understood, the second ‘silo’ of constructs (the preventative measures relating to resource vulnerability) would enjoy a fundamentally strong base to be measured against performance in a replicable future study.

Although this places an additional limitation on this research, it is in line with previous research (such as Newbert, 2008) within the related field of research where SEM was used. It should be noted that in no way is the research problem, nor the research objectives, compromised.

The literature reviewed, relating to firm performance, articulated numerous possible underlying attributes of performance, and substantiated arguments were made why they were unsuitable to this study. The choice made in terms of developing scale items for the 'performance' construct will hereby be reiterated.

The indicators which could be used to measure firm performance will be substantiated, based on support they have received in RBV literature, as well as their presence in studies related to Reformed Curatorship and its research design. Of all the previous literature, the study conducted by Newbert (2008) relates the closest to Reformed Curatorship – Firm Performance was also parameterised as a construct, and SEM was used to obtain results. These indicators were objective financial performance, subjective financial performance, subjective non-financial performance, hostile environment and novel combinations of resource bundling.

In the study of Newbert (2008), performance was solely measured by utilising an already-developed scale from Delaney and Huselid (1996, as cited in Newbert, 2008:753) which measured only subjective financial performance (profitability and sales) and subjective non-financial performance (marketing and market share).

The motivation for using this scale was three-fold (Newbert, 2008:753): Firstly, due to the large sample needed, objective and verified financial documents would have been difficult to obtain. Secondly, the scale has a well-documented reliability ($\alpha = 0.86$; (Newbert (2008:767) reported $\alpha = 0.821$). Thirdly, previous research indicates that subjective measures of performance correlate extremely well with objective measurements thereof (Powell, 1992a, as cited in Newbert, 2008:753).

The scale items developed for this construct can be seen in Table 3.5 below. It should be noted that as this is a previously designed scale which utilises a four-point Likert scale coding, whereas the rest of the scale will be using a five-point Likert-type format scale coding. The possible options are 'much worse',

‘slightly worse’, ‘slightly better’ and ‘much better’ – this is to force the respondent to provide a response of substance and to avoid the possibility of a vague answer such as ‘more or less the same’.

Furthermore, Table 3.5 differs in format relating to the three preceding tables. There is no separate column to display the indicators, as these are obvious from the phrasing of the scale items themselves.

Construct	Phrasing as a scale item
Performance	Compared to other organisations that do the same kind of work, how would you compare the organisation’s performance over the past three years in terms of...?
	Marketing?
	Growth in sales?
	Profitability?
	Market share?

Table 3.5: *Scale item generation relating to performance.*

3.5.8 Procedure followed in designing the questionnaire

Barry et al. (2011) provides a methodical but succinct four-phase blueprint of scale design. This blueprint forms part of a decision tree which aids the researcher to decide if a scale has to be developed, and if so, which systematic steps should be followed. The figure below (Fig. 3.4) depicts the four phases depicted within the decision tree.

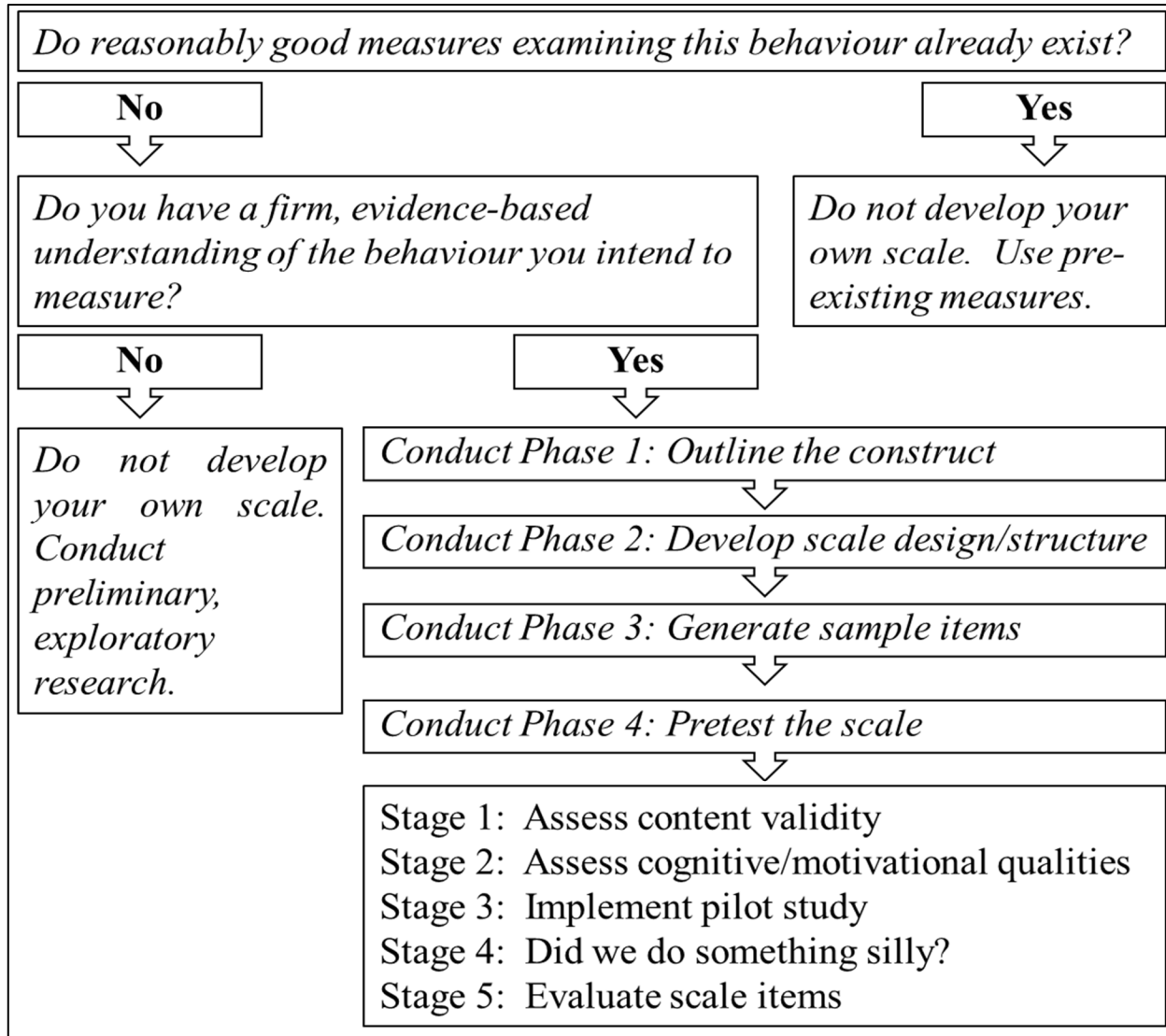


Figure 3.4: Scale development decision tree (Barry et al., 2011:98).

Although the need for developing a scale has already been established in Section 3.5.3, the pursuit of the methodical, systematic (and in this case, iterative) approach depicted by Barry et al. (2011:98) needs to be articulated. Firstly, as the concept was new, encompassing specific constructs, no measures which examine the various constructs exist. The behaviour that needs to be measured is extremely well researched, and the concept of Reformed Curatorship, along with the various constructs of erosion, ambiguity and misalignment (and the sub-dimensions of these constructs) were adapted accordingly.

The constructs were outlined in such a way that the attributes and dimensions were structured during the review of the related literature. This was graphically depicted in Section 3.5.5. Thus, following the decision tree as depicted in Fig 3.3, the path taken by the researcher reaches Phase 1. Phase 2, the development of the scale design and its related structure, was discussed from Sections 3.5.2 through to 3.5.6. Special notice should be taken of Fig. 3.3, which graphically depicts the entire structure of the scale. Section 3.5.7 articulated in tabulated form the conversion of attributes to scale items, thus marking the attainment of Phase 3.

Special attention should be drawn to the iterative nature experienced during Phases 1 to 3. The scale items were re-worded approximately five times to produce scale items which relate accurately to the attributes being measured.

Note should be taken that a clear distinction is drawn between pilot testing and pre-testing. Pre-testing refers to a handful of experts (either in terms of the academic discipline or the industry) to comment on the practicality and functionality of the scale items. Pilot testing refers to a specified sample after the corrections from pre-testing have been brought on.

The following section relates to the pretesting of the scale.

3.5.9 Pre-testing the scale

Four individuals were selected to pre-test the scale. Two individuals are industry experts, one individual an academic with knowledge of the academic field of research, and one individual a part-time academic (with doctorate) specialising in corporate measurement of internal, firm-based constructs.

The feedback was positive, and numerous small alterations to the questions were made. These alterations either enhanced the clarity of the questions, or the clarity of the instructions.

All questions asked by the individuals involved with the pre-testing was answered satisfactorily. It should be noted that no severe alterations were made which disturbed any fundamental aspects of the research, the scale, the constructs or the scale items.

Lastly, in consultation with a statistician, the scale was calibrated numerous times to ensure that on the 5-point Likert scale, the '3' value is the midpoint of each scale item. In toto, the scale was calibrated seven times prior to the fieldwork phase.

3.5.10 Mitigating possible weaknesses of scale

Some actions have been taken to mitigate possible weaknesses of the scale. Firstly, the questions and the dimensions they are supposed to measure have been through several iterations. Secondly, the response format was standardised throughout the questionnaire. Thirdly, all the considerations (as articulated in Table 3.1) were iteratively applied. Fourthly, the feedback from the pre-testing has been articulated and incorporated in any amendments to the scale.

3.6 Limitations

Several limitations relating to the research methodology have been identified and will be acknowledged.

Firstly, the ultimate sample size will place a limitation on the study, specifically a sample smaller than 200 (see Section 3.4.1). Should the response rate be low despite different interventions, all thresholds for all statistical analyses will be reported, along with their contextual limitations.

The second limitation relates to non-probability sampling method which will be treated as if it is a probability sampling method. Although an argument relating to the sampling technique was formed, the limitation of utilising convenience sampling should still be acknowledged. Any skewed distributions will be reported, along with the related consequences.

The third limitation relates to the cross-sectional design of the study, which treats all responses as if they were provided within the same point in time. Should a disruptive external factor emerge during the data-collection period, this will be reported. It is foreseen that all data will be collected within one cycle of operation of the South African wine industry, in order to limit the effects of the cross-sectional nature of the research.

The fourth limitation relates to poor response rates, specifically associated with the questionnaire being English. Should there be any lack of understanding relating to the usage of English, the researcher is fluent in Afrikaans and French. This should offset any foreseen limitation imposed by language.

The fifth limitation relates to the survey format of the research. Babbie (2008:309) indicates that survey research is normally weak in validity and strong in reliability. Furthermore, surveys are deemed by Babbie (2008:309) to be

“...somewhat artificial, potentially superficial, and relatively inflexible... [and difficult to] gain a full sense of social processes in their natural settings,”

The pre-testing of the questionnaire, as well as the pilot study, mitigated the artificiality and inflexibility to some degree, but not completely so. The design of the scale and proposed statistical tests (along with contextual interpretations thereof) mitigated the inability to understand the social processes within the correct context.

Sixthly, the industry in which the research is being conducted leads to a limitation. The questions, scale and constructs were phrased specifically to be generic. Thus, the questions have not been specifically designed to relate only to the South African wine industry, but in such a way that they could be used later in similar industries. This places a limitation on the expectation of applicability to the South African wine industry. Again, the pre-testing provided valuable insights relating to the understandability and applicability of the questions, specifically phrased so that the units of observation can answer it with ease.

Lastly, the method of bootstrapping was considered during the SEM part of the analysis. Bootstrapping is a method of artificial resampling with the aid of computer software (Kline, 2011:42). Parametric bootstrapping would be considered only as a last resort and acknowledged along with all the associated limitations thereof, and only be applicable to the SEM part of the analysis phase.

3.7 Ethical considerations

Chapter 1 outlined ethical considerations which will be taken into account. These considerations will be reiterated and expanded upon where necessary.

Leedy and Ormrod (2010:101) point to several ethical principles which a researcher should adhere to. These include protection from harm, informed consent, right to privacy, honesty with professional colleagues, internal review boards and a professional code of ethics.

All these principles were adhered to. The nature of the study precludes any protection from harm, and the electronic survey form will include a section relating to informed consent. Confidentiality was assured by means of encoding the data and storing the raw data with password protection. Not committing plagiarism and truthful reporting of the results, along with replicability of the study, ensured honesty with colleagues. The ethical clearance process and associated certificate needed prior to the pilot testing phase, as well as the required colloquia, address the internal review boards and adherence to a professional code of ethics.

Leedy and Ormrod (2010:102) advocate specific inclusions relating to a consent form signed by the respondents, containing the following:

- Brief explanation relating to the research.
- Portrayal of activities required and associated time span.
- The right of non-participation.
- Potential risks.
- Anonymity guarantee.
- Contact details of researcher.
- Contact details of an organisation should there be a complaint.
- An offer to see the end result of the findings.
- Place to sign and date.

All these considerations were met during any form of data collection and included as part of the electronic survey instrument.

Babbie (2008:238) indicates that it is paramount for a researcher to indicate errors in the sampling, non-response errors or any errors which, if omitted, would be misleading. Furthermore, any psychological damage which may be caused by the questions asked of the respondent should be carefully considered (Babbie, 2008:307).

Careful consideration revealed no foreseen damage which could befall a respondent, and no ethical problems revealed themselves during the pre-testing. However, the pilot study should be a good litmus test – should any ethical considerations be contravened, it would be reported along with any associated corrective action. To aid the researcher to identify any ethical problems experienced by the respondents, a section of the survey questionnaire will be open for comments from the respondents. To underscore the importance of ethical considerations, Babbie (2008:494) opines:

“Research ethics is a fundamental component of social science, not a nice afterthought.”

All the requirements for ethical clearance have been complied with, and ethical clearance is being awaited, prior to the commencement of the pilot study. The application of ethical clearance required the researcher to provide a detailed account of the following facets:

- Details of the researcher
- Risk assessment and mitigation
- Details of proposed research
- Summary of proposal
- Data management, analysis and design quality
- Ethical considerations

In addition to the above-listed facets, the wording of the consent form, the questionnaire and the information sheet to participants was finalised.

3.8 Conclusion

The purpose of Chapter 3 was two-fold. It confirmed the systematic, scientific and methodical approach to the study of Reformed Curatorship and indicated how the research scale was designed and constructed, thereby achieving the second research objective. It provided an overview of the three remaining research objectives - performing rigorous pilot testing of these constructs before the actual data collection, the scientific, methodical determination of the correlation between the presence of constructs amongst the units of analysis, and the relationship determination between the constructs from the data collected.

This chapter consisted of several sections. Within the first section, hypotheses and definitions were articulated. The second section provided a structured breakdown of the research context and design, which in turn provided a scientific outline of the research. The third section related to the research method. Technical issues such as the population, sample size, levels of measurement, planned fieldwork and data capturing, reliability, validity and data analysis were articulated. The fourth section consisted exclusively of the research scale and all the facets relating to the design and construction thereof. The fifth section articulated limitations of the research, and the final section commented on ethical considerations which will be upheld throughout the research.

4 CHAPTER 4: RESEARCH RESULTS

4.1 Introduction

The chapter will commence with a reflection on the nature of the population, sampling frame and sample size. The pragmatic reasons for sample size determination will be discussed, along with anomalies, challenges and positive salient features of the data collection process.

Scale assessment will commence with a reiteration of all hypotheses, as developed in Chapter 3, along with the theoretical structure underlying Reformed Curatorship. The coding of the different constructs, along with their segmentation into first, second and third order dimensions will be discussed, followed by a report on case screening.

A theoretical overview of exploratory factor analysis (EFA), along with an overview of descriptive statistics preceding the actual EFA, in turn will be followed by a reliability assessment.

The descriptive statistics related to the constructs will serve to provide context of the actual sample, after which the sample will be split twice into two distinct groups, where the data will be compared, and significance sought.

Correlation analysis will form the basis for hypothesis testing, followed by regression analysis and PLS-SEM, followed by moderation analysis of the same two exogenous variables used in the group differences analysis.

Null hypotheses could be accepted or rejected. Eight null hypotheses were accepted, and six were rejected.

Throughout the analysis phase, a very incremental, stepwise procedure will be followed in congruence with the scientific method of inquiry. Ultimately, anomalies and salient findings will be reported.

4.2 Population and Sample size

Although it was envisioned that a sample of 200 responses would be collected (see Chapter 3), a decision was made to continue with the data analysis after approximately 100 responses. The data analysis commenced after 104 responses had been received. This decision was made as a result of several influences and circumstances.

Firstly, it was originally foreseen that the entire data collection would occur within one operational cycle of the wine industry, in order to conform to the cross-sectional nature of the intended research. By the end of the second operational cycle of the wine industry, only 100 responses seemed attainable. The argument that the study maintained a cross-sectional nature would have increased exponentially if a third operational cycle could have been used in return for a sample of 150 or 200 responses.

Secondly, the estimate of the initial population (wine-producing entities) was approximately 3200 (see Chapter 1 and Chapter 3). The initial non-discriminatory use of the term 'wine-producing entity' included various stand-alone 'labels' or brands of wine from the same wine estate. In some cases, several labels could be traced back to one wine estate or producer. Furthermore, some wine estates shared a winemaker or cellar master, which would have led to the unnecessary (and therefore valueless) duplication of responses. The source used to contact the estates, Platter's Online 2021 (Platter's Online 2021), only listed approximately 1800 wine-producing entities, but these included middlemen traders (called 'negociants' in wine-making vernacular) as well as various stand-alone labels from the same wine estates. The informal database used for the fieldwork consisted of approximately 530 possible respondents, thus forming the sampling frame. A couple of wine estates ceased operation during the 2020-2021 period, but the population estimate of 530 will be used as a much more accurate measure within the context of this research. For similar studies, the estimated population of wine-producing entities would probably number between 500 and 600.

Thirdly, the response rate within the context of the data collection plan was extremely low. Looking at the sampling frame of 530, the response rate was 19,6%, and as the sample represents almost a fifth of the estimated population, it was deemed suitable to continue with the data analysis. A response rate of 19,6% might seem high for a study of this nature. Unfortunately, the number of resources, amount of

time, energy and administration required made any venture to 200 responses unfeasible within the context of the cross-sectional nature of the study. As a general measure, every 40 individual phone calls yielded 20 conversations, of which 10 led to a direct conversation with a possible respondent. Most respondents agreed verbally to partake in the study, but out of approximately 10 agreements only one or two completed surveys would be submitted. The ‘first-contact’ response rate could thus be calculated to be 2,5%. It is only with repeated attempts to contact possible respondents - in most cases several attempts to contact a *single* respondent – that it culminated in the reported 19,6% response rate.

The response rate dropped to less than 1% during the COVID-19 pandemic (between April 2020 and August 2020). This low response rate was in spite of all the measures employed to make the scale as accessible and easy-to-use, as discussed in Chapter 3, Section 3.4.2. This low response rate, primarily, but not exclusively, was caused by the closure of the wine industry during any government-sanctioned lockdown periods. Other contributing factors to the low response rate seemed to be:

- A disconnect between the questions and any culminating value of the study for the respondent. Although the first ‘page’ of the online survey clearly explained the nature and themes related to the research, respondents were unable to derive any perceived value from responding to the questions
- Specific terms with which respondents were unfamiliar dissuaded possible respondents from doing the survey. Some respondents commented on terms used within the context of strategy and RBV, but outside the nomenclature of winemaking
- The significant differences between the various types of wine-producing entities – in terms of structure, capabilities, size and outlook on winemaking - caused respondents to comment on how ‘different’ they were in relation to other producers
- The availability of a winemaker or cellar master – possible respondents were not always near a phone, or they were within the cellar where there was poor reception

Fourthly, a sample size of 104 was deemed suitable due to the *nature of respondents* (‘experts’ or managerial-level employees or owners) along with the *nature of the population* - a delineated industry with strong homogenic commerce and managerial characteristics. A resultant benefit of the calibre of respondents was that the data set were accurate from the start of the data analysis phase. For instance,

not one single response was incomplete, and during the data preparation and screening phase, *not a single incident* of an unengaged respondent was identified.

Fifthly, the sample size of 104 is scientifically justified:

- It is sufficient for this study as exploratory factor analysis will be utilised as the initial statistical procedure once case screening is completed (Hair, Black, Babin & Anderson, 2019:132-133)
- A minimum acceptable threshold for sample size is a 5:1 ratio of observations to variables, although a 10:1 ratio would be preferred (Hair et al., 2019:133; Field, 2009:647). For this study, a ratio of 8:1 was achieved: 104 observations to 13 variables *in toto*. The smallest ‘observations to variables’ ratio for the second order dimension is 6.5:1: 104 observations to 16 variables. Thus, on every level, an observation to variable ratio is larger than the prescribed minimum and leaning towards an adequate sample size

4.3 Scale assessment

The process of assessing the scale was systematic and incremental, consisting of the following steps:

- An overview of the hypotheses, theoretical structure and coding of scale items. This serves as a logical link between the theoretical structure of reformed curatorship and the start of the data analysis process.
- Case screening. This process ensures that, prior to the commencement of the data analysis, the data are checked for errors or missing values, which if left untreated, might cause faulty assumptions or faulty rejections during the analysis process.
- An overview of descriptive statistics of each scale item. This is the first step in the data analysis process in order to determine to what degree each scale item adheres to a normal distribution.
- An overview of exploratory factor analysis (EFA). The exact purpose of EFA, within the context of multivariate analysis, along with each incremental step in the EFA process, will be articulated.
- Scale profile. The profile of the scale will be interrogated in detail. It would include a descriptive statistics analysis for each scale item, followed by all the steps involved in EFA.

The overall analysis (descriptive statistics followed by EFA) will be done in four separate sections – each section dedicated to each of the three dependent variables, and the one independent variable.

- Final reliability assessment of scale. The reliability of the constructs would be subjected to analysis, specifically to determine internal consistency. The analysis might result in some of the constructs being discarded.

4.3.1 Overview of study: Hypotheses, structure and coding

Table 4.1 indicates the propositions from the theory and how the hypotheses were derived. Note that the variables (dependant and independent) are indicated in brackets.

Proposition	Hypothesis
1. Resource vulnerability is negatively correlated with [firm performance].	H1(a) - There is a strong, but negative relationship between the prevalence of resource vulnerability and firm performance.
2. Erosion is negatively correlated with firm performance.	<p>H1(b) - There is a strong, but negative relationship between erosion and firm performance.</p> <p>H1(c) – There is a strong, but negative relationship between value-induced attrition and firm performance.</p> <p>H1(d) – There is a strong, but negative relationship between value-induced skewness and firm performance.</p> <p>H1(e) - There is a strong, but negative relationship between intangible delicateness and firm performance.</p>
3. Ambiguity is negatively correlated with firm performance.	<p>H1(f) - There is a strong, but negative relationship between ambiguity and firm performance.</p> <p>H1(g) - There is a strong, but negative relationship between resource ambivalence and firm performance.</p> <p>H1(h) - There is a strong, but negative relationship between linkage ambiguity and firm performance.</p> <p>H1(i) - There is a strong, but negative relationship between tacitness and firm performance.</p>
4. Misalignment is negatively correlated with firm performance.	<p>H1(j) - There is a strong, but negative relationship between misalignment and firm performance.</p> <p>H1(k) - There is a strong, but negative relationship between context dependency and firm performance.</p> <p>H1(l) - There is a strong, but negative relationship between systematic complexity of capabilities and firm performance.</p>
5. Size (expressed as total hectares under vine) has a moderating effect on the relationship between resource vulnerability and firm performance.	H1(m) – Size as a moderator will have a low moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.
6. District has a moderating effect on the relationship between resource vulnerability and firm performance.	H1(n) – District as a moderator will have a low-to-medium moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.

Table 4.1: *Tabulated propositions and derived hypotheses.*

Fig. 4.1 is a graphic depiction of the Reformed Curatorship model, clearly indicating the independent and dependant variables, along with all associated dimensions, sub-dimensions and moderators.

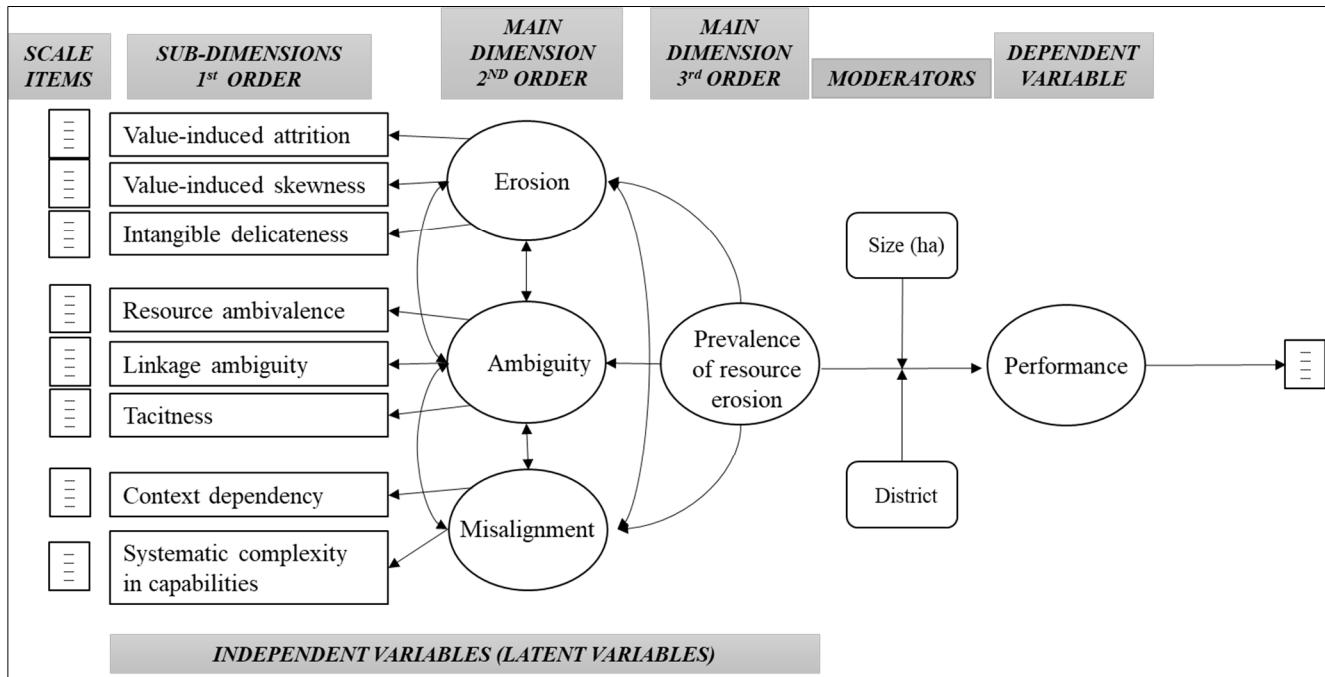


Figure 4.1: *Graphic depiction of the Reformed Curatorship model.*

The coding of the different measures is articulated in Table 4.2.

#	INDEPENDENT VARIABLE		DIMENSION ORDER	SCALE ITEMS	CODE ASSIGNED
1.	Erosion		2nd order	16	ER [ER.VIA, ER.VIS, ER.ID]
	1.1	Value-induced attrition	1 st order	6	ER.VIA [ER.1, ER.2, ER.3, ER.4, ER.5, ER.6]
	1.2	Value-induced attrition		5	ER.VIS [ER.7, ER.8, ER.9, ER.10, ER.11]
	1.3	Intangible delicateness		6	ER.ID [ER.12, ER.13, ER.14, ER.15, ER.16]
2.	Ambiguity		2nd order	15	AM [AM.RA, AM.LA, AM.T]
	2.1	Resource ambivalence	1 st order	5	AM_RA [AM.1, AM.2, AM.3, AM.4, AM.5]
	2.2	Linkage ambiguity		5	AM_LA [AM.6, AM.7, AM.8, AM.9, AM.10]
	2.3	Tacitness		5	AM.T [AM.11, AM.12, AM.13, AM.14, AM.15]
3.	Misalignment		2nd order	6	MA [MA_CD, MA_SC]
	3.1	Context dependency	1 st order	3	MA_CD [MA.1, MA.2, MA.3]
	3.2	Systematic complexity in capabilities		3	MA.SC [MA.4, MA.5, MA.6]
4.	Prevalence of resource erosion		3rd order		PREV [ER, AM, MA]
#	DEPENDENT VARIABLE			NUMBER OF SCALE ITEMS	CODE
1.	Firm Performance			4	FP [FP.1, FP.2, FP.3, FP.4]

Table 4.2: Coding of different measures – independent and dependent variables.

4.3.2 Case screening

Pallant (2016:61) advises that, prior to any analysis, the data should be checked for any errors and any errors encountered should be corrected. This pre-analysis process will be termed case screening.

Case screening was conducted to determine the prevalence of any missing values, as well as any response which indicated an unengaged respondent. All 104 responses were complete, and there were no missing values in any of the questionnaires. During the data collection phase, the respondents filled in an online survey (LimeSurvey) which aided them in not leaving out any responses by mistake. Pallant (2018:61) counsels a rigorous check to ensure that there are no responses outside of the possible range of scores. The online survey software, LimeSurvey, made any 'scoring' outside the parameters impossible, therefore no single answer resulted in an error.

As the researcher engaged with each respondent individually, it was impressed on the possible respondent that only fully completed questionnaires would be of use. This was also articulated in the survey preamble the respondent had to read through prior to commencing the survey. The data collection method - although slow, cumbersome and energy-intensive – led to a data set without any missing values. This could be viewed in contrast to other fieldwork or data collection procedures, where data collection is outsourced, and data collection quality assurance becomes watered down.

Unengaged responses were screened for by evaluating the standard deviation (SD) across all scale items on a case-by-case basis. Typically, a SD of 0 could suggest an unengaged respondent. This is given the underlying purpose of a scale, which is to illicit a response variation. Any $SD < 0.5$ would have been assessed. However, the minimum SD value reported was 0,67, thus indicative of engaged respondents. Therefore, no cases were excluded.

The case screening activity ascertained that no responses were erroneous (a score outside the possible range of scores), incomplete or deemed suspicious in terms of unengaged responses. Thus all 104 responses would be used for the analyses ($n = 104$).

In subsections 4.3.5 – 4.3.8, the descriptive statistics of each first order and second order dimensions will be discussed.

4.3.3 Descriptive statistics – an overview

Should one be able to ascertain an acceptable degree of normality, parametric statistics can be utilised. For instance, should normality not be assumed, the median should be used instead of the mean (Pallant, 2016:73).

Pallant (2016:75) indicates that normality can be assessed to some degree by inspecting the kurtosis and skewness of each scale item. The skewness indicates the degree of symmetry of each distribution for each scale item, whereas the kurtosis relates to the shape (flatness or peakedness) of the distribution for each scale item (Pallant, 2016:72-73). Perfect normality is indicated when both skewness and kurtosis are 0 – a phenomenon which is extremely rare in the social sciences (Pallant, 2016:73). As this study harbours a self-developed scale reflective of scales used in the social sciences, a skewness and kurtosis of 0 is therefore not expected. Pallant (2016:81) elaborates on the phenomenon of a non-zero value for skewness and kurtosis:

“This does not necessarily indicate a problem with the scale, but rather reflects the underlying nature of the construct being measured.”

Positive skewness values indicate that scores are more numerous at the left-hand side of a distribution, and a negative skewness value will indicate that scores are more populous at the right-hand side of the graph (Pallant, 2016:73). The skewness standard error ratio (S/SE) could be utilised as a test for normality - a negative or positive ratio of 2 means that one could reject normality (IBM SPSS Statistics, n.d.).

Positive kurtosis values relate to a more ‘peaked’ distribution at the centre, with long thin tails, whereas a kurtosis of 0 indicates ‘flatness’ of the distribution with long tails (Pallant, 2016:73).

The kurtosis/standard error ratio (K/SE) can be utilised as a test for normality – a negative or positive ratio of 2 means that one could reject normality (IBM SPSS Statistics, n.d.).

For the purpose of this study, the K/SE will be interrogated along with the kurtosis statistic, as well as the S/SE. Should the K/SE be larger than 2 or less than -2, in conjunction with a large value of the kurtosis statistic and S/SE, this will be reported accordingly.

Ultimately, use of exploratory factor analysis will be used to explore the underlying structures of the data, whilst serving to reduce the number of independent variables. As such, a digression from normality merely indicates that the observed correlations will be reduced (Hair et al., 2019:135).

4.3.4 Exploratory factor analysis – an overview

The purpose of this section is to provide an overview of exploratory factor analysis – what it is, why it is suitable for this specific study and how it is used to analyse the data. However, Sections 4.3.5 - 4.3.8 will articulate the actual analyses for each second order dimension (erosion, ambiguity and misalignment).

The need to measure something which cannot be directly measured, called a latent variable, is inherent to the field of business management (Field, 2009:628). There is an increasing need to measure the interrelationships between variables in order to understand the underlying structure of a set of variables (Hair et al., 2019:121). Exploratory factor analysis has three uses – the understanding of an underlying structure to a large set of variables, to evaluate scales and to reduce the number of variables needed within a specific structure (Hair et al., 2019:121; Pallant, 2016:202 and Field, 2009:628). Hair et al. (2019:124) argue that the primary purpose of EFA is to accurately determine the underlying structures to a set of variables.

For the purpose of this study, our primary concern will be with exploring the underlying structure of all the variables and comparing it to the theoretical structure, as derived in Chapters 2 and 3. The reduction of variables, or rather the ‘simplification’ of the model would be a resultant benefit, along with the evaluation of the scale, paving the way for articulating specific facets pertaining to future research within the field of RBV.

Pallant (2016:202) refers to EFA as a set of different techniques grouped as a ‘family’. In employing EFA, there are three distinct steps (Pallant, 2016:204) – determining the suitability of the data, factor

extraction and factor rotation and interpretation. These three steps will be explained in detail in Sections 4.3.4.1 - 4.3.4.3, along with assumptions associated with EFA (Pallant, 2016:204-209):

4.3.4.1 *Step 1: Suitability of data*

This is dependent on sample size, along with intercorrelations between items.

In terms of the sample size, the requirements are met with the observations / variables ratio of 8:1. Hair et al. (2019:134) provide two rules of thumb relating to sample size – that there should be more observations than variables, and that a minimum absolute sample size consist of 50 responses, with a preferred minimum of 100 responses. This study crosses both these thresholds.

Relating to intercorrelations, should there be too few intercorrelations between scale items lower than 0.3, EFA should not be utilised. In Sections 4.3.5 - 4.3.8, we will indicate that there are enough coefficients above 0.3 in the correlation matrix. In addition to inspecting the correlation matrix, the Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy should indicate a minimum value of 0.6. Hair et al. (2019:136) provide the following values as a guideline: values above 0.8 are meritorious, above 0.7 moderate, above 0.6 mediocre, above 0.5 mediocre and below 0.5 unacceptable. Bartlett's test of sphericity should be significant ($p < 0.05$) for EFA to be suitably applied.

4.3.4.2 *Step 2: Factor extraction*

This process is used to establish the least number of factors necessary to accurately represent the interrelationships among variables. In order to decide which factors to retain, three techniques will be employed to aid the researcher – the Kaiser's criterion, the scree test and a parallel analysis. These techniques are also called 'stopping rules' due to their function to 'stop' one from attributing too many factors which represent interrelationships among variables (Hair et al., 2019:124).

The Kaiser's criterion, also known as the latent root criterion, according to Hair et al. (2019:122), refers to a rule where only factors with an eigenvalue of 1.0 or more will be kept for further analysis. The eigenvalue of a factor signifies the amount of total variance explained by that factor. The eigenvalue is also known as the 'latent root' and is calculated as the column sum of squared loadings for a factor (Hair

et al., 2019:122). Eigenvalues which are negative are indicative of an underlying model which is not well-considered (UCLA Institute of Digital Research & Education: Statistical Consulting, n.d.).

The Kaiser's criterion has been critically shown to indicate the retention of too many factors. As such, the scree test and parallel analysis will be used when making decisions on which factors to keep.

Also known as Catell's Scree Test, the scree test is a graphic depiction of eigenvalues plotted against factors. On inspection, one can then determine at which number of factors the vertical plot inflects towards the horizontal. As with the Kaiser's criterion, the scree test has received criticism of overestimating the number of factors.

The parallel analysis (also known as Horn's parallel analysis) contrasts the eigenvalues from the data set with a randomly generated data set of identical size. According to Hair et al. (2019:123), the number of factors retained are those factors which have larger eigenvalues than the randomly generated data. The parallel analysis has been lauded as an accurate test for factor determination, especially used in conjunction with the Kaiser's criterion and scree test.

4.3.4.3 *Step 3: Factor rotation and interpretation*

Following factor extraction, it becomes necessary to determine how variables are loaded in terms of the factors. It is normal for variables to have the high loadings on the most important factors, but this makes interpretation problematic. The axes of the different factors are thus rotated through the various clusters of variables, ensuring that the variables are loaded maximally to one factor (Field, 2009:642-643). There are two factor rotation techniques – orthogonal rotation, where the factors are assumed to be independent, and oblique factor solutions, where correlation between factors could be possible. Orthogonal rotation involves the axes of the factors to remain at 90°, which is not the case with oblique rotation (Field, 2009:642). Pallant (2016:206-207) indicates that the two rotation methods seem to produce results which are alike, but nonetheless suggests that the oblique rotation be used first. For the purpose of this study, oblique rotation was used, specifically the Direct Oblimin technique within SPSS.

Hair et al. (2019:152) assert that factor loadings exhibit larger standard errors than mere correlations, therefore much stricter thresholds should be utilised when interpreting factor loadings. For a sample

size of 100, factor loadings of 0.55 are necessary to be statistically significant. Although smaller loadings could be allowed, it would be for practical considerations at the expense of statistical significance (Hair et al., 2019:152). For the purpose of this study, with a sample size of 104, the factor loading threshold of 0.55 will be applied.

4.3.4.4 *Assumptions underlying EFA*

Pallant (2016:208-209) indicates four underlying assumptions prior to the commencement of EFA – sample size, linearity, factorability of correlation matrix and outliers. Although a ‘safe’ sample size of 150 samples is advised, the arguments in Section 4.2. shows that the research sample of 104 is sufficient. It is assumed that all correlations between variables are linear. Pallant (2016:208) advises to seek out any curvilinear relationship, but none could be found upon inspection. In terms of factorability of the correlation matrix, three requirements should be met – the prevalence of correlations larger than 0.3 in the initial correlation matrix, the KMO measure of sampling adequacy should be larger than 0.6, and Bartlett’s test of sphericity should be statistically significant at ($p < 0.05$). Lastly, Pallant (2016: 208-209) advises that any outliers should be noted during the screening phase. No outliers were noted in this study, as the Likert-scale used only had a maximum of 5 intervals.

4.3.5 Scale profile: Erosion

Sections 4.3.5.1 – 4.3.5.3 will indicate the exploratory factor analysis findings for the second order dimension ‘erosion’.

4.3.5.1 *Descriptive statistics – ‘erosion’*

Fig. 4.2 depicts the first order dimensions associated with the first order dimension of ‘erosion’.

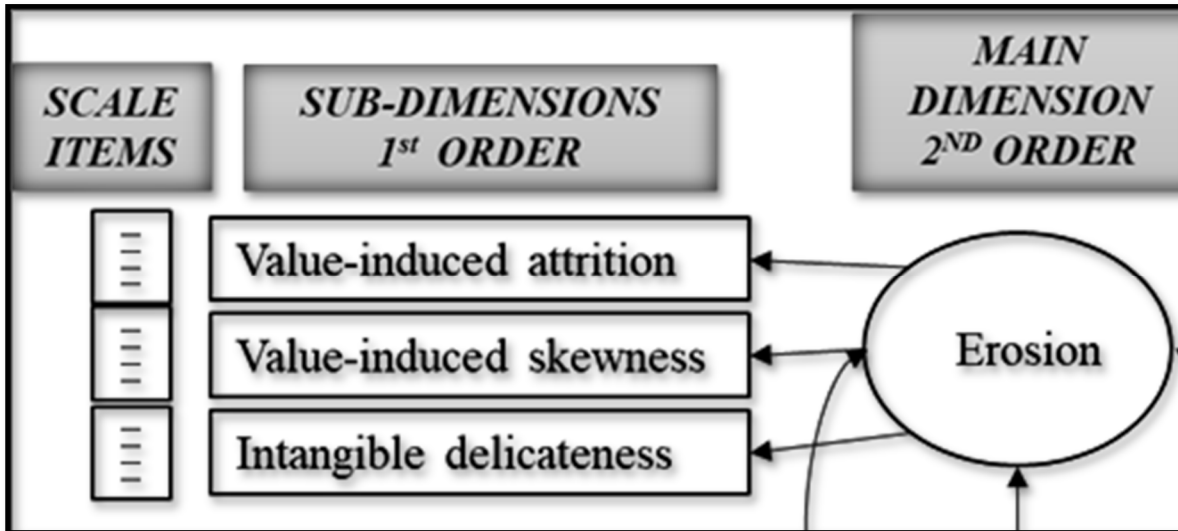


Figure 4.2: First order dimensions associated with second order dimension 'erosion'.

As stated in Table 4.2, the first order dimension 'erosion' consists of 16 scale items [ER.1] – [ER.16]. Table 4.3 is an excerpt from Table 4.2 which merely indicates the dimensions, whereas Table 4.4 indicates the descriptive statistics for each of these scale items.

#	INDEPENDENT VARIABLE		DIMENSION ORDER	SCALE ITEMS	CODE ASSIGNED
1.	Erosion		2 nd order	16	ER [ER.VIA, ER.VIS, ER.ID]
	1.1	Value-induced attrition	1 st order	6	ER.VIA [ER.1, ER.2, ER.3, ER.4, ER.5, ER.6]
	1.2	Value-induced attrition		5	ER.VIS [ER.7, ER.8, ER.9, ER.10, ER.11]
	1.3	Intangible delicateness		6	ER.ID [ER.12, ER.13, ER.14, ER.15, ER.16]

Table 4.3: Excerpt from Table 4.2 relating to the second order dimension 'erosion'.

DESCRIPTIVE STATISTICS											
Scale item	n	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis		S/SE	K/SE
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error		
[ER.1]	104	1	5	2.97	1.265	-0.179	0.237	-1.002	0.469	-0.76	2.1
[ER.2]	104	1	5	2.58	1.146	0.340	0.237	-0.535	0.469	1.43	1.1
[ER.3]	104	1	5	2.44	1.069	0.153	0.237	-0.640	0.469	0.65	1.4
[ER.4]	104	1	5	2.15	1.104	0.571	0.237	-0.496	0.469	2.41	1.1
[ER.5]	104	1	5	2.43	1.205	0.433	0.237	-0.760	0.469	1.83	1.6
[ER.6]	104	1	4	1.48	0.800	1.686	0.237	2.157	0.469	7.12	4.6
[ER.7]	104	1	5	2.16	1.158	0.591	0.237	-0.700	0.469	2.49	1.5
[ER.8]	104	1	5	2.11	1.148	0.731	0.237	-0.340	0.469	3.08	0.7
[ER.9]	104	1	5	3.00	1.351	-0.217	0.237	-1.211	0.469	-0.92	2.6
[ER.10]	104	1	5	3.56	1.041	-0.920	0.237	0.724	0.469	-3.88	1.5
[ER.11]	104	1	5	2.37	1.158	0.469	0.237	-0.594	0.469	1.98	1.3
[ER.12]	104	1	5	2.05	1.101	0.750	0.237	-0.425	0.469	3.17	0.9
[ER.13]	104	1	5	2.41	1.259	0.423	0.237	-0.968	0.469	1.79	2.1
[ER.14]	104	1	5	2.03	1.144	0.894	0.237	-0.074	0.469	3.77	0.2
[ER.15]	104	1	5	2.73	1.264	0.348	0.237	-0.828	0.469	1.47	1.8
[ER.16]	104	1	5	2.78	1.061	0.257	0.237	-0.406	0.469	1.09	0.9

Table 4.4: Descriptive statistics associated with the second order dimension ‘erosion’.

As can be seen from Table 4.4, scale items [ER.1], [ER.6], [ER.9] and [ER.13] have K/SEs larger than 2, but only [ER.6] has a KSE larger than 2 (4.6) *in conjunction with* a large kurtosis statistic (2.157) and large S/SE (7.12). Thus [ER.6] is being noted in terms of its ‘normality’. However, it should be noted that overall, on a granular, scale item level, there seems to be acceptable variation when taking into account the sample size and frequency distribution of all scale items in this second order dimension.

4.3.5.2 Exploratory factor analysis – ‘erosion’

Suitability of data for factor analysis. The second order dimension ‘erosion’ indicated an acceptable number of coefficients above 0.3 in the correlation matrix. Table 4.5 is a minimised version of the correlation matrix for the second order dimension ‘erosion’, with the coefficients equal or above 0.3 indicated in bold.

Correlation Matrix																
	[ER.1]	[ER.2]	[ER.3]	[ER.4]	[ER.5]	[ER.6]	[ER.7]	[ER.8]	[ER.9]	[ER.10]	[ER.11]	[ER.12]	[ER.13]	[ER.14]	[ER.15]	[ER.16]
[ER.1]	1.000	0.480	0.491	0.295	0.422	0.158	0.288	0.156	0.244	0.123	0.272	-0.131	0.117	-0.006	0.238	0.053
[ER.2]	0.480	1.000	0.471	0.175	0.401	-0.062	0.177	0.123	0.157	0.232	0.264	-0.115	0.062	0.054	0.095	-0.014
[ER.3]	0.491	0.471	1.000	0.296	0.355	0.055	0.215	0.151	0.128	0.204	0.300	0.007	-0.022	0.156	0.168	0.044
[ER.4]	0.295	0.175	0.296	1.000	0.271	0.146	0.200	0.048	0.234	0.229	0.123	0.106	0.100	-0.050	-0.005	0.054
[ER.5]	0.422	0.401	0.355	0.271	1.000	0.155	0.269	0.156	0.274	0.177	0.296	0.021	0.099	-0.030	0.211	0.038
[ER.6]	0.158	-0.062	0.055	0.146	0.155	1.000	0.344	0.420	0.153	0.095	0.291	0.106	-0.122	-0.036	0.475	-0.102
[ER.7]	0.288	0.177	0.215	0.200	0.269	0.344	1.000	0.607	0.422	0.197	0.404	0.055	-0.053	-0.055	0.375	-0.041
[ER.8]	0.156	0.123	0.151	0.048	0.156	0.420	0.607	1.000	0.294	0.088	0.401	0.019	-0.084	-0.076	0.502	-0.172
[ER.9]	0.244	0.157	0.128	0.234	0.274	0.153	0.422	0.294	1.000	0.393	0.230	-0.013	0.057	-0.195	0.245	-0.075
[ER.10]	0.123	0.232	0.204	0.229	0.177	0.095	0.197	0.088	0.393	1.000	0.208	0.112	0.133	0.149	0.248	0.086
[ER.11]	0.272	0.264	0.300	0.123	0.296	0.291	0.404	0.401	0.230	0.208	1.000	0.077	-0.091	-0.030	0.300	-0.021
[ER.12]	-0.131	-0.115	0.007	0.106	0.021	0.106	0.055	0.019	-0.013	0.112	0.077	1.000	0.385	0.269	-0.130	0.059
[ER.13]	0.117	0.062	-0.022	0.100	0.099	-0.122	-0.053	-0.084	0.057	0.133	-0.091	0.385	1.000	0.248	-0.186	0.120
[ER.14]	-0.006	0.054	0.156	-0.050	-0.030	-0.036	-0.055	-0.076	-0.195	0.149	-0.030	0.269	0.248	1.000	0.066	-0.067
[ER.15]	0.238	0.095	0.168	-0.005	0.211	0.475	0.375	0.502	0.245	0.248	0.300	-0.130	-0.186	0.066	1.000	-0.153
[ER.16]	0.053	-0.014	0.044	0.054	0.038	-0.102	-0.041	-0.172	-0.075	0.086	-0.021	0.059	0.120	-0.067	-0.153	1.000

Table 4.5: Minimised version of correlation matrix for second order dimension ‘erosion’.

In terms of the KMO measure of sampling adequacy and Bartlett’s test of sphericity, Table 4.6 provides the calculated values. The KMO is 0.721, well above the required minimum threshold of 0.6, and could be described as ‘moderate’ according to Hair et al. (2019:136), whereas Pallant (2016:204) argues that any value larger than 0.6 should result in a good factor analysis. Bartlett’s test of sphericity, which should not be above 0.05, is calculated to be 0.00. Thus, the factorability of the data is deemed satisfactory for the second order dimension of ‘erosion’.

KMO and Bartlett's Test: 'Erosion'		Required thresholds for good 'factorability'.
<i>Kaiser-Meyer-Olkin measure of sampling adequacy</i>	<i>0.721</i>	>0.6
<i>Bartlett's test of sphericity</i>	<i>Approx. Chi-Square</i>	<i>406.385</i>
	<i>df</i>	<i>120</i>
	<i>Sig.</i>	<0.05

Table 4.6: *KMO measure of sampling adequacy and Bartlett's test of sphericity for 'erosion'.*

As all requirements related to the suitability of the data for factor analysis have been met, the second step of factor analysis, factor extraction, will follow.

4.3.5.3 *Factor extraction and rotation – 'erosion'*

The 16 scale items and 104 cases of the second order dimension of 'erosion' of this study were subjected to principal axis factoring and direct oblimin rotation using IBM SPSS version 27.

Kaiser criterion. The Kaiser criterion is the first of three 'stopping rules' (Hair et al., 2019:140), followed by the scree test and the parallel analysis. The purpose of these 'stopping rules' is to provide guidance as to how many underlying factors the data set, in this case for this specific second order dimension, should consist of (Pallant, 2016:205).

Table 4.7 indicates the total variance explained. In terms of the Kaiser's criterion, the eigenvalues above 1 provides a preliminary indication of how many factors need to be retained (Pallant, 2016:213). The eigenvalue could best be described as the sum of squared loadings on a particular factor (Hair et al., 2019:141).

TOTAL VARIANCE EXPLAINED							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.823	23.892	23.892	3.310	20.685	20.685	2.509
2	2.031	12.693	36.584	1.493	9.328	30.013	2.371
3	1.600	9.998	46.583	1.151	7.192	37.206	1.164
4	1.244	7.776	54.359	0.723	4.517	41.722	0.875
5	1.019	6.366	60.725	0.570	3.561	45.283	1.727
6	0.939	5.867	66.591				
7	0.876	5.473	72.064				
8	0.793	4.958	77.022				
9	0.692	4.322	81.345				
10	0.565	3.528	84.873				
11	0.510	3.187	88.060				
12	0.494	3.088	91.147				
13	0.435	2.717	93.864				
14	0.361	2.255	96.119				
15	0.347	2.170	98.289				
16	0.274	1.711	100.000				
Extraction Method: Principal Axis Factoring.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Table 4.7: Total variance explained – second order dimension ‘erosion’ (Kaiser criterion).

From Table 4.7, on inspection, five factors can be retained based on eigenvalues larger than 1. Note should be taken on the cumulative percentages of variance. As the cumulative percentage of variance is less than 50%, it supports a hypothesis for a multi-factor model.

The factor matrix shows the loadings of scale items to factors prior to rotation being performed. From the factor matrix (Table 4.8), it appears that the 16 scale items can be grouped within five factors. However, the various items seem to mostly populate three factors, not five.

FACTOR MATRIX ^A					
<u>Note:</u> Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.	Factor				
	1	2	3	4	5
[ER.7]	0.661				
[ER.8]	0.601	-0.439			
[ER.1]	0.585	0.300			
[ER.15]	0.574	-0.396			
[ER.11]	0.555				
[ER.5]	0.527				
[ER.9]	0.524			-0.454	
[ER.3]	0.521	0.367			
[ER.2]	0.474	0.386	-0.301		
[ER.6]	0.429	-0.344			
[ER.4]	0.343				
[ER.13]		0.434	0.327		
[ER.16]					
[ER.12]			0.721		
[ER.14]		0.314	0.381	0.482	
[ER.10]	0.422				-0.517
<i>Extraction Method: Principal Axis Factoring.</i>					
<i>a. Attempted to extract 5 factors. More than 25 iterations required. (Convergence=,005). Extraction was terminated.</i>					

Table 4.8: Factor matrix – second order dimension ‘erosion’ (Kaiser criterion).

Already it appears as if five factors are too much, and that a maximum of three factors should be considered for ‘erosion’.

A pattern matrix represents, for each scale item, the partial standardised regression coefficients associated with each factor, but the overlap for each factor is excluded (UCLA Institute of Digital Research & Education: Statistical Consulting, n.d.) In Table 4.9 the pattern matrix indicates the specific scale items loading over five factors.

PATTERN MATRIX ^a					
Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.	Factor				
	1	2	3	4	5
[ER.1]	0.736				
[ER.3]	0.715				
[ER.2]	0.698				
[ER.5]	0.522				
[ER.4]					
[ER.8]		-0.765			
[ER.15]		-0.626			
[ER.6]		-0.608			
[ER.7]		-0.587			
[ER.11]		-0.413			
[ER.16]					
[ER.12]			0.825		
[ER.13]			0.468		
[ER.14]				0.682	
[ER.10]					-0.801
[ER.9]				-0.337	-0.513
Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization. ^a					
a. Rotation converged in 13 iterations.					

Table 4.9: Pattern matrix – second order dimension ‘erosion’ (Kaiser criterion).

From Table 4.9, it is evident that two factors are represented fairly well (and with significant factor loadings above 0.55) by scale items [ER.1], [ER.3], [ER.2], [ER.8], [ER.15], [ER.6] and [ER.7]. The third, fourth and fifth factors only indicate significant loadings from one scale item each, which starts to reflect the possibility of an underlying structure less than five factors. In addition to this, it is notable that [ER.4] and [ER.16] does not load well (loading below 0.3) and the loadings for [ER.5], [ER.11], [ER.13] and [ER.9] are not significant (loadings below 0.55).

The structure matrix (Table 4.10) is unique to the oblimin output, and it shows the correlation between the factors and variables. These correlations are simple zero-order correlations between each scale item and each factor (UCLA Institute of Digital Research & Education: Statistical Consulting, n.d.).

STRUCTURE MATRIX					
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>	Factor				
	1	2	3	4	5
[ER.1]	0.726				
[ER.3]	0.685				
[ER.2]	0.675				
[ER.5]	0.582				-0.311
[ER.4]	0.389				-0.304
[ER.8]		-0.771			
[ER.15]		-0.702			-0.310
[ER.7]	0.355	-0.638			-0.347
[ER.6]		-0.596			
[ER.11]	0.396	-0.469			
[ER.16]					
[ER.12]			0.779		
[ER.13]			0.517		
[ER.14]				0.665	
[ER.10]					-0.770
[ER.9]		-0.313		-0.406	-0.593
<i>Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization.</i>					

Table 4.10: Structure matrix for second order dimension 'erosion' (Kaiser criterion).

It is notable that the loadings for [ER.5] and [ER.9] are significant in the structure matrix, but just failed to meet the threshold of 0.55 in the pattern matrix.

In contrast, scale items [ER.4], [ER.11], [ER.16] and [ER.13] failed to breach the threshold of significance in terms of their respective loadings. This is an early indication that these scale items might be discarded as we progress through the factor analysis.

It should be noted that no anomalous loadings were found when comparing the pattern matrix to the structure matrix.

Scree test. Fig 4.3 is the scree plot, where the eigenvalues are plotted against the number of factors.

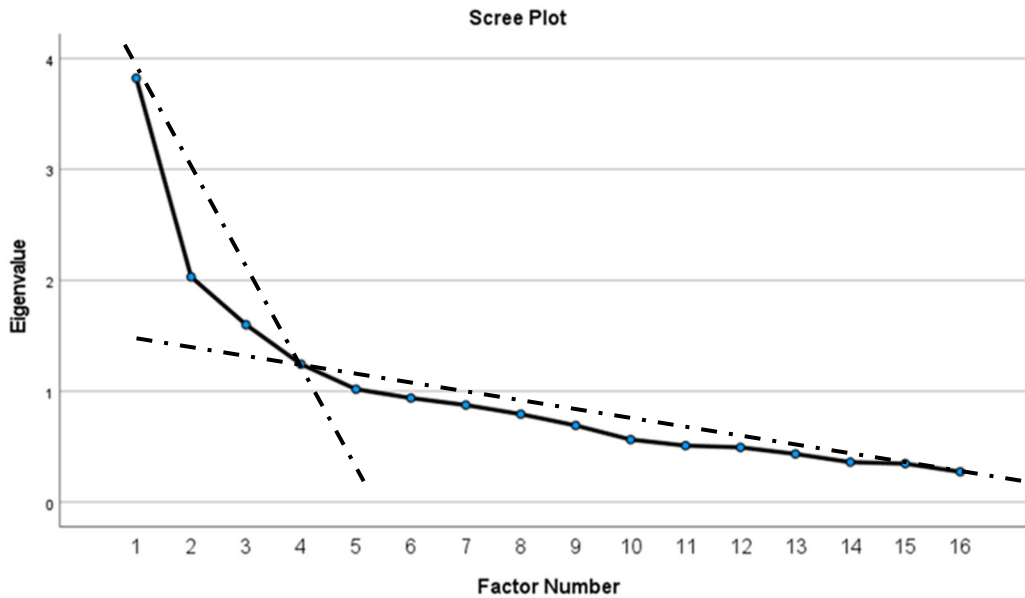


Figure 4.3: *Scree plot of second order dimension ‘erosion’.*

The scree plot is interpreted by noticing the inflection point. There seems to be some variation in the understanding of the inflection point between researchers, specifically with regards to its usage (Hair et al., 2019:142). Some researchers exclude factors below the ‘elbow’ or inflection point, which is the point where the vertical starts normalising towards the horizontal. In Fig. 4.3 it is the point where the dashed lines cross. Field (2009:640) strictly advises that only the factors to the left of the inflection point (or ‘elbow’) are used (thus three factors, as the inflection occurs at Factor 4) and asserts that the scree plot becomes less accurate for sample sizes below 200. However, it provides an indication that five factors are too many for the second order dimension ‘erosion’.

Parallel analysis. A parallel analysis was conducted by making use of the Monte Carlo PCA for Parallel Analysis Ver. 3.0, where 16 variables were simulated for 104 responses, replicated 100 times (see Table 4.11). The number of factors to retain are determined by the number of times the actual eigenvalues are larger than the simulated eigenvalues.

FACTOR NUMBER	ACTUAL EIGENVALUE	CRITERION FROM PARALLEL TEST	DECISION
1	3.823	1,7490	Accept
2	2.031	1,5730	Accept
3	1.600	1,4501	Accept
4	1.244	1,3410	Reject
5	1.019	1,2436	Reject
6	0.939	1,1496	Reject
7	0.876	1,0711	Reject
8	0.793	0,9865	Reject
9	0.692	0,9176	Reject
10	0.565	0,8461	Reject
11	0.510	0,7834	Reject
12	0.494	0,7154	Reject
13	0.435	0,6496	Reject
14	0.361	0,5845	Reject
15	0.347	0,5112	Reject
16	0.274	0,4283	Reject

Table 4.11: *Output from parallel analysis (erosion).*

From Table 4.11 we can see that only three factors should be retained. In conjunction with this finding, *three factors* were also the outcome of the scree plot, and from the preliminary factor analysis done based on Kaiser criterion we found that five factors were too many and thus suboptimal. Furthermore, the theoretical subconstructs of ‘erosion’, or rather the first order sub-dimensions (value-induced attrition, value-induced skewness and intangible delicateness) are *three* in number. Therefore, the factor analysis will continue with three factors – akin to the underlying theoretical structure.

Final factor extraction and rotation for ‘erosion’. Table 4.12 is indicative of the total variances displayed with three factors, revealing that the first factor explains 20% of variances, where all three factors cumulatively explain 35% of variance.

TOTAL VARIANCE EXPLAINED							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.823	23.892	23.892	3.236	20.226	20.226	2.544
2	2.031	12.693	36.584	1.431	8.942	29.168	2.555
3	1.600	9.998	46.583	1.078	6.740	35.908	1.193
4	1.244	7.776	54.359				
5	1.019	6.366	60.725				
6	0.939	5.867	66.591				
7	0.876	5.473	72.064				
8	0.793	4.958	77.022				
9	0.692	4.322	81.345				
10	0.565	3.528	84.873				
11	0.510	3.187	88.060				
12	0.494	3.088	91.147				
13	0.435	2.717	93.864				
14	0.361	2.255	96.119				
15	0.347	2.170	98.289				
16	0.274	1.711	100.000				
Extraction Method: Principal Axis Factoring.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Table 4.12: Total variances explained – second order dimension ‘erosion’ (final).

FACTOR MATRIX^a			
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>			
	Factor		
	1	2	3
[ER.7]	0.665		
[ER.8]	0.607	-0.452	
[ER.1]	0.590	0.330	
[ER.11]	0.562		
[ER.15]	0.548	-0.372	
[ER.5]	0.534		
[ER.3]	0.518	0.364	
[ER.9]	0.484		
[ER.2]	0.480	0.412	
[ER.6]	0.434	-0.363	
[ER.10]	0.368		
[ER.4]	0.341		
[ER.13]		0.424	0.397
[ER.16]			
[ER.12]			0.764
[ER.14]			
Extraction Method: Principal Axis Factoring.			
a. Attempted to extract 3 factors. More than 25 iterations required. (Convergence=.001). Extraction was terminated.			

Table 4.13: *Factor matrix for second order dimension 'erosion' (final).*

Table 4.13 is the factor matrix, which show the factor loadings prior to factor rotation.

PATTERN MATRIX^A			
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>			
	Factor		
	1	2	3
[ER.2]	0.722		
[ER.1]	0.718		
[ER.3]	0.653		
[ER.5]	0.554		
[ER.4]	0.366		
[ER.10]			
[ER.8]		-0.772	
[ER.7]		-0.645	
[ER.15]		-0.618	
[ER.6]		-0.615	
[ER.11]		-0.428	
[ER.9]		-0.351	
[ER.16]			
[ER.12]			0.818
[ER.13]			0.532
[ER.14]			0.327

Extraction Method: Principal Axis Factoring.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 10 iterations.

Table 4.14: *Pattern matrix for second order dimension 'erosion (final).*

STRUCTURE MATRIX			
Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.			
	Factor		
	1	2	3
[ER.1]	0.706		
[ER.2]	0.673		
[ER.3]	0.651		
[ER.5]	0.589		
[ER.4]	0.406		
[ER.10]	0.353		
[ER.8]		-0.771	
[ER.7]	0.363	-0.689	
[ER.15]		-0.649	
[ER.6]		-0.591	
[ER.11]	0.392	-0.498	
[ER.9]	0.353	-0.414	
[ER.16]			
[ER.12]			0.762
[ER.13]			0.560
[ER.14]			0.332

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

Table 4.15: Structure matrix for second order dimension ‘erosion’ (final).

The pattern matrix, Table 4.14, shows four scale items with significant loadings (greater than 0.55) on the first factor, as well as four other scale items the second factor. In terms of the third factor, only [ER.12] shows a high loading on the third factor in the pattern matrix, but looking at the structure matrix, [ER.13] exhibits a loading of significance (0.560), whereas it barely missed the threshold of significance in the pattern matrix (0.532). Thus, for pragmatic reasons, it was decided to include scale item [ER.13] under the third factor. However, with only two scale items associated with the third factor, of which [ER.13] barely so. This is indicative that there might be problems with the third first order sub-dimension ‘intangible delicateness’ [ER.ID].

In terms of the identities of the first order sub-dimensions which underlie ‘erosion’, the first sub-dimension, ‘value-induced attrition’, thus consists of scale items [ER.1], [ER.2], [ER.3] and [ER.5]. is in line with the theoretical construct, as scale items [ER.1] to [ER.6] were foreseen to fall under ‘value-induced attrition’ [ER.VIA]. Thus, the identity [ER.VIA] will remain unchanged. Note that scale item

[ER.4] is discarded from [ER.VIA] as the factor loading is below the threshold of significance, and scale item [ER.6] indicates strong loading under the second factor.

The identity of the second factor, which theoretically should be [ER.VIS], is somewhat problematic, as only four scale items are grouped under this sub-dimension, of which two theoretically belong in the other two factors – [ER.6] in factor 1 and [ER.15] under factor three. From the theory, an argument could be made that [ER.6] should be categorised under [ER.VIS], but less so for [ER.15]. Nonetheless, there is not enough evidence for the identity of the second factor to change, thus the first order sub-dimension will remain [ER.VIS].

The identity of the third factor is not problematic, as scale items [ER.12] and [ER.13] theoretically belong in the same first order sub-dimension.

Factor Correlation Matrix			
Factor	1	2	3
1	1.000	-0.256	0.193
2	-0.256	1.000	0.079
3	0.193	0.079	1.000
Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization.			

Table 4.16: *Factor correlation matrix for second order dimension ‘erosion’ (final).*

From Table 4.16, it is clear that the three factors indicate weak correlations, with Factor 1 indicating a weak, negative correlation with Factor 2 ($r = -0.256$). This is contrary to the theoretical predictions of the three first order sub-dimensions [ER.VIA], [ER.VIS] and [ER.ID].

STRUCTURE OF [ER]			
#	First-order sub-dimension	Scale items	Remarks
1.	[ER.VIA]	[ER.1], [ER.2], [ER.3], [ER.5].	<ul style="list-style-type: none"> • Identity remains the same – scale items grouped as predicted by theory.
2.	[ER.VIS]	[ER.6], [ER.7], [ER.8], [ER.15]	<ul style="list-style-type: none"> • Identity remains the same; some scale items from other sub-dimensions present. • Correlates negatively with [ER.VIA]
3.	[ER.ID]	[ER.12], [ER.13].	<ul style="list-style-type: none"> • Only two scale items. • Identity as predicted. • Potential problems with [ER.ID]

Table 4.17: *Summary of second order dimension ‘erosion’ structure.*

From Table 4.17, the theoretically predicted structure is more or less present after the EFA was conducted. However, the specific grouping of scale items for [ER_VIS] is different from the theoretical model and is therefore a cause of interest, although the identity of [ER_VIS] will remain unchanged. Also, [ER_ID] is a cause of concern as only two scale items are included in the first order sub-dimension, of which one scale item barely adhered to the loading threshold of 0.55 in the structure matrix.

4.3.6 Scale profile: Ambiguity

Sections 4.3.6.1 – 4.3.6.3 will indicate the exploratory factor analysis findings for the second order dimension ‘ambiguity’.

4.3.6.1 *Descriptive statistics – ‘ambiguity’*

Fig. 4.4 depicts the first order dimensions associated with the first order dimension of ‘ambiguity’.

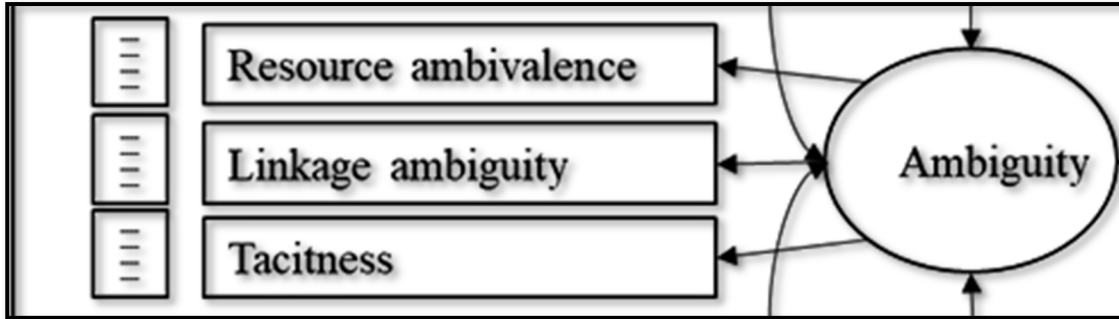


Figure 4.4: *First order dimensions associated with second order dimension ‘ambiguity’.*

As stated in Table 4.2, the first order dimension ‘ambiguity’ consists of 15 scale items [AM_1] – [AM_15]. Table 4.18 is an excerpt from Table 4.2 which merely indicates the dimensions, whereas Table 4.19 indicates the descriptive statistics for each of these scale items.

#	INDEPENDENT VARIABLE		DIMENSION ORDER	SCALE ITEMS	CODE ASSIGNED
2.	Ambiguity		2 nd order	15	AM [AM_RA, AM_LA, AM_T]
	2.1	Resource ambivalence	1 st order	5	AM_RA [AM_1, AM_2, AM_3, AM_4, AM_5]
	2.2	Linkage ambiguity		5	AM_LA [AM_6, AM_7, AM_8, AM_9, AM_10]
	2.3	Tacitness		5	AM_T [AM_11, AM_12, AM_13, AM_14, AM_15]

Table 4.18: *Excerpt from Table 4.2 relating to the second order dimension ‘ambiguity’.*

DESCRIPTIVE STATISTICS											
Scale item	n	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis		S/SE	K/SE
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error		
[AM_1]	104	1	5	3.04	1.269	-0.161	0.237	-0.939	0.469	-0.68	2.0
[AM_2]	104	1	5	1.65	0.868	1.286	0.237	0.946	0.469	5.43	2.0
[AM_3]	104	1	5	2.11	1.088	0.802	0.237	0.079	0.469	3.39	0.2
[AM_4]	104	1	5	1.83	0.960	1.162	0.237	0.800	0.469	4.91	1.7
[AM_5]	104	1	5	1.90	1.102	1.215	0.237	0.781	0.469	5.13	1.7
[AM_6]	104	1	4	1.92	1.163	1.171	0.237	0.352	0.469	4.94	0.7
[AM_7]	104	1	5	2.23	1.134	0.672	0.237	-0.526	0.469	2.84	1.1
[AM_8]	104	1	5	2.14	1.210	0.790	0.237	-0.419	0.469	3.34	0.9
[AM_9]	104	1	5	2.12	1.135	0.867	0.237	-0.083	0.469	3.66	0.2
[AM_10]	104	1	5	2.10	1.093	0.989	0.237	0.336	0.469	4.18	0.7
[AM_11]	104	1	5	3.45	1.032	-0.733	0.237	0.457	0.469	-3.09	1.0
[AM_12]	104	1	5	2.83	1.161	-0.261	0.237	-1.095	0.469	-1.10	2.3
[AM_13]	104	1	5	2.12	1.008	0.635	0.237	-0.143	0.469	2.68	0.3
[AM_14]	104	1	5	2.13	1.030	0.613	0.237	-0.289	0.469	2.59	0.6
[AM_15]	104	1	5	2.80	1.194	0.261	0.237	-0.742	0.469	1.10	1.6

Table 4.19: Descriptive statistics associated with the second order dimension ‘ambiguity’.

As indicated by Table 4.19, [AM_2], [AM_4] and [AM_5] stands out in terms of their respective S/SEs (5.43, 4.91 and 5.13) and K/SEs (2.0, 1.7 and 1.7). However, [AM_2], [AM_4] and [AM_5] exhibit acceptable skewness values (1.286, 1.162 and 1.215) and kurtosis values (0.946 and 0.781) in conjunction with the respective S/SEs and K/SEs. As with the second order dimension of ‘erosion’, it should be noted that overall, on a granular, scale item level, there seems to be acceptable variation when taking into account the sample size and frequency distribution of all scale items in this second order dimension. [AM_2] and [AM_5] associated with them should nonetheless be noted.

4.3.6.2 Exploratory factor analysis – ‘ambiguity’

Suitability of data for factor analysis. The second order dimension ‘ambiguity’ indicated many coefficients above 0.3 in the correlation matrix (see Annexure 5). Table 4.20 is a minimised version of

the correlation matrix for the second order dimension ‘ambiguity’, with the coefficients equal or above 0.3 indicated in bold.

Correlation Matrix															
	[AM.1]	[AM.2]	[AM.3]	[AM.4]	[AM.5]	[AM.6]	[AM.7]	[AM.8]	[AM.9]	[AM.10]	[AM.11]	[AM.12]	[AM.13]	[AM.14]	[AM.15]
[AM.1]	1.000	0.118	-0.052	-0.114	0.100	0.068	0.095	0.173	0.085	0.130	0.120	0.117	0.080	0.226	0.191
[AM.2]	0.118	1.000	0.420	0.475	0.259	0.522	0.417	0.520	0.445	0.302	0.198	0.306	0.524	0.538	0.401
[AM.3]	-0.052	0.420	1.000	0.604	0.422	0.582	0.500	0.468	0.525	0.441	0.147	0.291	0.387	0.456	0.405
[AM.4]	-0.114	0.475	0.604	1.000	0.526	0.553	0.474	0.456	0.544	0.312	0.187	0.304	0.442	0.464	0.376
[AM.5]	0.100	0.259	0.422	0.526	1.000	0.388	0.274	0.222	0.195	0.145	0.329	0.252	0.220	0.353	0.266
[AM.6]	0.068	0.522	0.582	0.553	0.388	1.000	0.735	0.684	0.632	0.640	0.353	0.313	0.604	0.494	0.492
[AM.7]	0.095	0.417	0.500	0.474	0.274	0.735	1.000	0.577	0.696	0.569	0.374	0.274	0.665	0.449	0.530
[AM.8]	0.173	0.520	0.468	0.456	0.222	0.684	0.577	1.000	0.794	0.650	0.297	0.398	0.567	0.476	0.343
[AM.9]	0.085	0.445	0.525	0.544	0.195	0.632	0.696	0.794	1.000	0.688	0.295	0.391	0.617	0.436	0.376
[AM.10]	0.130	0.302	0.441	0.312	0.145	0.640	0.569	0.650	0.688	1.000	0.288	0.258	0.475	0.386	0.380
[AM.11]	0.120	0.198	0.147	0.187	0.329	0.353	0.374	0.297	0.295	0.288	1.000	0.479	0.351	0.220	0.217
[AM.12]	0.117	0.306	0.291	0.304	0.252	0.313	0.274	0.398	0.391	0.258	0.479	1.000	0.366	0.359	0.192
[AM.13]	0.080	0.524	0.387	0.442	0.220	0.604	0.665	0.567	0.617	0.475	0.351	0.366	1.000	0.556	0.423
[AM.14]	0.226	0.538	0.456	0.464	0.353	0.494	0.449	0.476	0.436	0.386	0.220	0.359	0.556	1.000	0.415
[AM.15]	0.191	0.401	0.405	0.376	0.266	0.492	0.530	0.343	0.376	0.380	0.217	0.192	0.423	0.415	1.000

Table 4.20: Minimised version of correlation matrix for second order dimension ‘ambiguity’.

Although the correlation matrix of ‘ambiguity’ exhibits a larger number than the correlation matrix of ‘erosion’ above 0.3, it is notable that [AM.1] does not significantly load well with any of the other scale items.

In terms of the KMO measure of sampling adequacy and Bartlett’s test of sphericity, Table 4.21 provides the calculated values. The KMO is 0.875, well above the required minimum threshold of 0.6, and could be described as ‘moderate’ according to Hair et al. (2019:136), whereas Pallant (2016:204) argues that any value larger than 0.6 should result in a good factor analysis. Bartlett’s test of sphericity, which should not be above 0.05, is calculated to be 0.000. Thus, the factorability of the data is deemed satisfactory for the second order dimension of ‘ambiguity’.

KMO and Bartlett's Test		Required thresholds for good ‘factorability’.	
<i>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</i>		0.875	>0.6
<i>Bartlett's Test of Sphericity</i>	<i>Approx. Chi-Square</i>	816.274	
	<i>df</i>	105	
	<i>Sig.</i>	0.000	<0.05

Table 4.21: KMO measure of sampling adequacy and Bartlett’s test of sphericity for ‘ambiguity’.

As all requirements related to the suitability of the data for factor analysis have been met, the second step of factor analysis, factor extraction, will follow.

4.3.6.3 *Factor extraction and rotation – ‘ambiguity’*

The 15 scale items and 104 cases of the second order dimension of ‘ambiguity’ of this study were subjected to principal axis factoring and direct oblimin rotation using IBM SPSS version 27.

Kaiser criterion. The Kaiser criterion is the first of three ‘stopping rules’ (Hair et al., 2019:140), followed by the scree test and the parallel analysis. The purpose of these ‘stopping rules’ is to provide guidance as to how many underlying factors the data set, for this specific second order dimension, should consist of (Pallant, 2016:205).

Table 4.7 indicates the total variance explained. In terms of the Kaiser’s criterion, the eigenvalues above 1 provide a preliminary indication of how many factors need to be retained (Pallant, 2016:213). The eigenvalue could best be described as the sum of squared loadings on a particular factor (Hair et al., 2019:141).

TOTAL VARIANCE EXPLAINED							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	6.719	44.796	44.796	6.347	42.314	42.314	5.659
2	1.295	8.634	53.431	0.936	6.241	48.555	1.869
3	1.241	8.270	61.701	0.870	5.802	54.357	3.865
4	1.058	7.051	68.752	0.546	3.640	57.997	1.844
5	0.833	5.556	74.308				
6	0.742	4.945	79.253				
7	0.570	3.800	83.053				
8	0.490	3.265	86.318				
9	0.449	2.993	89.311				
10	0.378	2.523	91.834				
11	0.327	2.181	94.014				
12	0.285	1.900	95.914				
13	0.261	1.743	97.658				
14	0.233	1.556	99.213				
15	0.118	0.787	100.000				
Extraction Method: Principal Axis Factoring.							
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Table 4.22: Total variance explained – second order dimension ‘ambiguity’ (Kaiser criterion).

From Table 4.22, on inspection, four factors can be retained based on eigenvalues larger than 1.

The factor matrix shows the loadings of scale items to factors prior to rotation being performed. From the factor matrix (Table 4.23), it appears that the 15 scale items can be grouped within four factors. However, the various items seem to mostly populate one factor, not four.

FACTOR MATRIX ^A				
Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.	Factor			
	1	2	3	4
[AM.6]	0.836			
[AM.9]	0.821		-0.313	
[AM.8]	0.787			
[AM.7]	0.784			
[AM.13]	0.735			
[AM.4]	0.692	-0.333	0.393	
[AM.10]	0.681		-0.352	
[AM.14]	0.669			0.402
[AM.3]	0.668			
[AM.2]	0.628			
[AM.15]	0.562			
[AM.12]	0.473			
[AM.11]	0.465	0.781		
[AM.5]	0.443		0.496	
[AM.1]				0.383
<i>Extraction Method: Principal Axis Factoring.</i>				
<i>a. Attempted to extract 4 factors. More than 25 iterations required. (Convergence=.010). Extraction was terminated.</i>				

Table 4.23: Factor matrix for second order dimension ‘ambiguity’ (Kaiser criterion).

There is some indication that a second factor could possibly be considered, but only [AM.11] loads high with Factor 2, simultaneously loading somewhat moderately on Factor 1. Scale items [AM.12] and [AM.1] is notable, as both only load on one factor without any significance, potentially earmarking them for removal at a later stage.

A pattern matrix represents, for each scale item, the partial standardised regression coefficients associated with each factor, but the overlap for each factor is excluded (UCLA Institute of Digital Research & Education: Statistical Consulting, n.d.). In Table 4.24 the pattern matrix indicates the specific scale items loading over four factors.

On inspection of Table 4.24, the high number of scale items loading on Factor 1 is prominent. Although there is loading over Factors 2 and 3, only [AM.11], [AM.4] and [AM.5] load significantly. It already appears as if a 1-factor structure for the second order dimension of ‘ambiguity’ should be more optimal than four factors.

PATTERN MATRIX ^A				
Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.	Factor			
	1	2	3	4
[AM.9]	0.936			
[AM.10]	0.832			
[AM.8]	0.793			
[AM.7]	0.695			
[AM.6]	0.658			
[AM.13]	0.537			
[AM.15]				
[AM.11]		0.937		
[AM.12]		0.354		
[AM.4]			0.779	
[AM.5]			0.644	
[AM.3]	0.377		0.526	
[AM.2]			0.361	0.316
[AM.14]			0.421	0.502
[AM.1]				0.462
<i>Extraction Method: Principal Axis Factoring.</i>				
<i>Rotation Method: Oblimin with Kaiser Normalization.</i>				
<i>a. Rotation converged in 9 iterations.</i>				

Table 4.24: Pattern matrix for second order dimension ‘ambiguity’ (Kaiser criterion).

STRUCTURE MATRIX				
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>	Factor			
	1	2	3	4
[AM.9]	0.894		0.438	
[AM.8]	0.827		0.416	0.382
[AM.6]	0.810	0.300	0.605	0.321
[AM.7]	0.787	0.310	0.491	0.329
[AM.10]	0.763			
[AM.13]	0.704	0.306	0.468	0.453
[AM.2]	0.539		0.538	0.460
[AM.15]	0.498		0.444	0.390
[AM.11]	0.334	0.955		
[AM.12]	0.383	0.463	0.341	
[AM.4]	0.555		0.856	
[AM.3]	0.594		0.685	
[AM.5]		0.334	0.623	
[AM.14]	0.539		0.584	0.623
[AM.1]				0.450
<i>Extraction Method: Principal Axis Factoring.</i>				
<i>Rotation Method: Oblimin with Kaiser Normalization.</i>				

Table 4.25: Structure matrix for second order dimension ‘ambiguity’ (Kaiser criterion).

The structure matrix (Table 4.25) is unique to the oblimin output, and it shows the correlation between the factors and variables. These correlations are simple zero-order correlations between each scale item and each factor (UCLA Institute of Digital Research & Education: Statistical Consulting, n.d.). While it seems as if Table 4.25 supports two factors (factors 1 and 3) due to the amount of scale items loading significantly on each, scale items [AM.4] and [AM.3] load significantly on both factors, further indicating that a 1-factor structure might be more suitable for this second order dimension ‘ambiguity’.

Factor Correlation Matrix				
Factor	1	2	3	4
1	1.000	0.267	0.513	0.359
2	0.267	1.000	0.225	0.261
3	0.513	0.225	1.000	0.188
4	0.359	0.261	0.188	1.000
<i>Extraction Method: Principal Axis Factoring.</i>				
<i>Rotation Method: Oblimin with Kaiser Normalization.</i>				

Table 4.26: Factor-correlation matrix for second order dimension ‘ambiguity’ (Kaiser criterion)

The factors themselves seem to show some promising correlation between one another, especially Factor 1 with Factor 3 ($r = 0.513$). None of the correlations are negative, which is in line with the theory of the second order dimension of ‘ambiguity’.

Scree test. Fig 4.5 is the scree plot, where the eigenvalues are plotted against the number of factors.

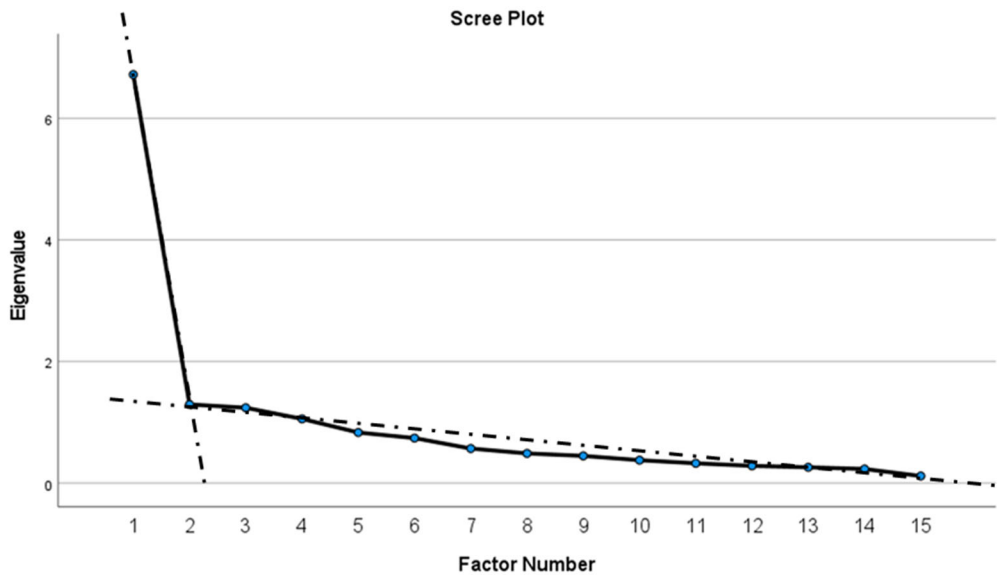


Figure 4.5: *Scree plot for second order dimension ‘ambiguity’.*

The scree plot is interpreted by noticing the inflection point. There seems to be some variation in the understanding of the inflection point between researchers, specifically with regards to its usage (Hair et al., 2019:142). Some researchers exclude factors below the ‘elbow’ or inflection point, which is the point where the vertical starts normalising towards the horizontal. In Fig. 4.5, it is the point where the dashed lines cross. Field (2009:640) strictly advises that only the factors to the left of the inflection point (or ‘elbow’) are used (thus one factor, as the inflection occurs at Factor 2), and asserts that the scree plot becomes less accurate for sample sizes below 200. However, Fig. 4.5 clearly indicates that only one factor should be retained and that four factors are too many for the second order dimension ‘ambiguity’.

Parallel analysis. A parallel analysis was conducted by making use of the Monte Carlo PCA for Parallel Analysis Ver. 3.0, where 15 variables were simulated for 104 responses, replicated 100 times (see Table 168

4.27). The number of factors to retain are determined by the number of times the actual eigenvalues are larger than the simulated eigenvalues.

FACTOR NUMBER	ACTUAL EIGENVALUE	CRITERION FROM PARALLEL TEST	DECISION
1	6.719	1,7147	Accept
2	1.295	1,5322	Reject
3	1.241	1,4037	Reject
4	1.058	1,3077	Reject
5	0.833	1,2117	Reject
6	0.742	1,1188	Reject
7	0.570	1,0381	Reject
8	0.490	0,9582	Reject
9	0.449	0,8806	Reject
10	0.378	0,8171	Reject
11	0.327	0,7459	Reject
12	0.285	0,6750	Reject
13	0.261	0,6073	Reject
14	0.233	0,5381	Reject
15	0.118	0,4509	Reject

Table 4.27: *Output from parallel test (ambiguity).*

From Table 4.27, we can see that only one factor should be retained. In conjunction with this finding, *one factor* retention was also the outcome of the scree plot, and from the preliminary factor analysis, which was based on the Kaiser criterion, it was found that four factors were too many and thus suboptimal. However, from the theoretical structure it was expected to be three factors, as with the second order dimension ‘erosion’. The fact that the second order dimension ‘ambiguity’ cannot be segmented into three underlying factors is remarkable from a theoretical point of view – it indicates that, but there are some immediate implications because of this. The first implication is that there can be no factor rotation with a single factor. Stemming directly from the first implication, the second implication is that due to the retention of only one factor, only a factor matrix will be used to indicate loadings, consequently advising us which of the 15 scale items to retain. There will be no pattern matrix, structure matrix or factor-correlation matrix.

The factor analysis will continue with a single factor.

Final factor extraction and rotation for ‘ambiguity’. Table 4.28 is indicative of the total variances displayed with a single factor, revealing that this first factor explains 41% of variances.

TOTAL VARIANCE EXPLAINED						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.719	44.796	44.796	6.222	41.481	41.481
2	1.295	8.634	53.431			
3	1.241	8.270	61.701			
4	1.058	7.051	68.752			
5	0.833	5.556	74.308			
6	0.742	4.945	79.253			
7	0.570	3.800	83.053			
8	0.490	3.265	86.318			
9	0.449	2.993	89.311			
10	0.378	2.523	91.834			
11	0.327	2.181	94.014			
12	0.285	1.900	95.914			
13	0.261	1.743	97.658			
14	0.233	1.556	99.213			
15	0.118	0.787	100.000			
<i>Extraction Method: Principal Axis Factoring.</i>						

Table 4.28: Total variance explained for the second order dimension ‘ambiguity’ (final).

Table 4.29 is the factor matrix for ambiguity, where scale items with loadings higher than 0.55 are retained. In this specific table, only loadings higher than 0.3 are present, with scale items with significant loadings (>0.55) will be retained and make up the second order dimension of ‘ambiguity’.

FACTOR MATRIX^A	
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>	Factor
	1
[AM.6]	0.845
[AM.9]	0.811
[AM.7]	0.791
[AM.8]	0.786
[AM.13]	0.741
[AM.10]	0.673
[AM.3]	0.661
[AM.4]	0.661
[AM.14]	0.654
[AM.2]	0.627
[AM.15]	0.565
[AM.12]	0.468
[AM.5]	0.426
[AM.11]	0.415
[AM.1]	
<i>Extraction Method: Principal Axis Factoring.</i>	
<i>a. 1 factors extracted. 4 iterations required.</i>	

Table 4.29: Factor matrix for second order dimension ‘ambiguity’ (final).

The scale items [AM.12], [AM.5], [AM.11] and [AM.1] will be discarded in terms of all future analysis. The identity of the second order dimension will subsume the identity of this factor, thus only reference to ‘ambiguity’ will be made, which will consist of 11 scale items (in bold in Table 4.29). By implication, the overall structure of Reformed Curatorship is thus reduced by removing the first order sub-dimensions of ‘resource ambivalence’, ‘linkage ambiguity’ and ‘tacitness’.

4.3.7 Scale profile: Misalignment

Sections 4.3.7.1 – 4.3.7.3 will indicate the exploratory factor analysis findings for the second order dimension ‘misalignment’.

4.3.7.1 Descriptive statistics – ‘misalignment’

Fig. 4.6 depicts the first order dimensions associated with the first order dimension of ‘misalignment’.

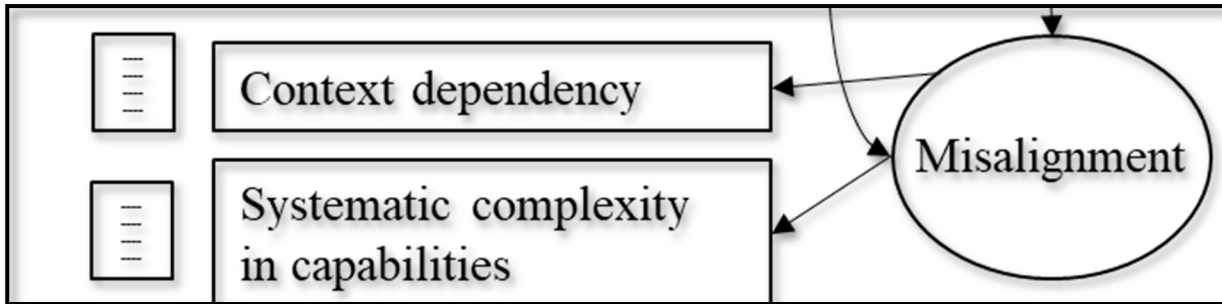


Figure 4.6: First order dimensions associated with second order dimension 'misalignment'.

As stated in Table 4.2, the first order dimension 'misalignment' consists of 6 scale items [MA_1] – [MA_6]. Table 4.30 is an excerpt from Table 4.2 which merely indicates the dimensions, whereas Table 4.31 indicates the descriptive statistics for each of these scale items.

#	INDEPENDENT VARIABLE		DIMENSION ORDER	SCALE ITEMS	CODE ASSIGNED
3.	Misalignment		2nd order	6	MA [MA_CD, MA_SC]
	3.1	Context dependency	1 st order	3	MA_CD [MA_1, MA_2, MA_3]
	3.2	Systematic complexity in capabilities		3	MA_SC [MA_4, MA_5, MA_6]

Table 4.30: Excerpt from Table 4.2 relating to the second order dimension 'misalignment'.

		DESCRIPTIVE STATISTICS									
Scale item	n	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis		S/SE	K/SE
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error		
[MA_1]	104	1	5	1.82	0.963	1.374	0.237	1.964	0.469	5.80	4.2
[MA_2]	104	1	5	1.83	1.009	1.050	0.237	0.211	0.469	4.43	0.4
[MA_3]	104	1	5	2.57	1.164	0.380	0.237	-0.625	0.469	1.61	1.3
[MA_4]	104	1	5	3.38	0.958	-0.372	0.237	0.016	0.469	-1.57	0.0
[MA_5]	104	1	5	3.15	1.147	-0.229	0.237	-0.830	0.469	-0.97	1.8
[MA_6]	104	1	4	2.86	1.144	0.170	0.237	-0.622	0.469	0.72	1.3

Table 4.31: Descriptive statistics associated with the second order dimension 'misalignment'.

Although [MA_2] might seem problematic in terms of its S/SE (4.43), the K/SE is sufficiently low (0.4), along with an acceptably low skewness value (1.050) and extremely low kurtosis value (0.211). However, [MA_1] is of great concern, as it exhibits unacceptably high S/SE and K/SE values (5.80 and 4.2), along with a fairly high skewness value (1.374) and kurtosis value (1.964). As with the previous second order dimensions of ‘erosion’ and ‘ambiguity’, it should be noted that overall, on a granular, scale item level, there seems to be acceptable variation when taking into account the sample size and frequency distribution of all scale items in this second order dimension.

4.3.7.2 *Exploratory factor analysis – ‘misalignment’.*

Suitability of data for factor analysis. The second order dimension ‘misalignment’ indicated several coefficients above 0.3 in the correlation matrix (see Annexure 5). Table 4.32 is a minimised version of the correlation matrix for the second order dimension ‘misalignment’, with the coefficients equal or above 0.3 indicated in bold.

CORRELATION MATRIX						
	[MA.1]	[MA.2]	[MA.3]	[MA.4]	[MA.5]	[MA.6]
[MA.1]	1.000	0.656	0.535	0.077	0.184	0.187
[MA.2]	0.656	1.000	0.481	0.210	0.250	0.331
[MA.3]	0.535	0.481	1.000	0.255	0.247	0.193
[MA.4]	0.077	0.210	0.255	1.000	0.423	0.388
[MA.5]	0.184	0.250	0.247	0.423	1.000	0.631
[MA.6]	0.187	0.331	0.193	0.388	0.631	1.000

Table 4.32: *Minimised version of correlation matrix for second order dimension ‘misalignment’.*

In terms of the KMO measure of sampling adequacy and Bartlett’s test of sphericity, Table 4.33 provides the calculated values. The KMO is 0.695, comfortably above the required minimum threshold of 0.6, and could almost be described as ‘moderate’, according to Hair et al. (2019:136), whereas Pallant (2016:204) argues that any value larger than 0.6 should result in a good factor analysis. Bartlett’s test of sphericity, which should not be above 0.05, is calculated to be 0.00. Thus, the factorability of the data is deemed satisfactory for the second order dimension of ‘misalignment’.

KMO and Bartlett's Test		Required thresholds for good 'factorability'.
<i>Kaiser-Meyer-Olkin measure of sampling adequacy.</i>	<i>0.695</i>	>0.6
<i>Bartlett's test of sphericity</i>	<i>Approx. Chi-Square</i>	<i>188.101</i>
	<i>df</i>	<i>15</i>
	<i>Sig.</i>	<0.05

Table 4.33: *KMO measure of sampling adequacy and Bartlett's test of sphericity for 'misalignment'.*

As all requirements related to the suitability of the data for factor analysis have been met, the second step of factor analysis - factor extraction - will follow.

4.3.7.3 *Factor extraction and rotation – 'misalignment'*

The 6 scale items and 104 cases of the second order dimension of 'erosion' of this study were subjected to principal axis factoring and direct oblimin rotation using IBM SPSS version 27.

Kaiser criterion. The Kaiser criterion is the first of three 'stopping rules' (Hair et al., 2019:140), followed by the scree test and the parallel analysis. The purpose of these 'stopping rules' is to provide guidance as to how many underlying factors the data set, in this case for this specific second order dimension, should consist of (Pallant, 2016:205).

Table 4.34 indicates the total variance explained. In terms of the Kaiser's criterion, the eigenvalues above 1 provides a preliminary indication of how many factors need to be retained (Pallant, 2016:213). The eigenvalue could best be described as the sum of squared loadings on a particular factor (Hair et al., 2019:141).

TOTAL VARIANCE EXPLAINED							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	2.698	44.967	44.967	2.273	37.883	37.883	1.965
2	1.409	23.476	68.442	1.008	16.801	54.684	1.804
3	0.711	11.855	80.298				
4	0.518	8.628	88.926				
5	0.365	6.091	95.017				
6	0.299	4.983	100.000				
<i>Extraction Method: Principal Axis Factoring.</i>							
<i>a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.</i>							

Table 4.34: Total variance explained – second order dimension ‘misalignment’ (Kaiser criterion).

From Table 4.34, on inspection, only two factors can be retained based on eigenvalues larger than 1. Note should be taken of the cumulative percentages of variance, as the cumulative percentage of two factors score higher than both previous second order dimensions.

The factor matrix shows the loadings of scale items to factors prior to rotation being performed. From the factor matrix (Table 4.35), it appears that the 6 scale items can be grouped within only one factor, similar to ‘ambiguity’.

FACTOR MATRIX ^A		
	Factor	
	1	2
[MA.2]	0.706	-0.310
[MA.1]	0.691	-0.541
[MA.5]	0.630	0.514
[MA.6]	0.615	0.452
[MA.3]	0.583	
[MA.4]	0.428	0.307
<i>Extraction Method: Principal Axis Factoring.</i>		
<i>a. 2 factors extracted. 18 iterations required.</i>		

Table 4.35: Factor matrix for second order dimension ‘misalignment’ (Kaiser criterion).

However, the scale items seem to load across both factors, with two scale items, [MA.1] and [MA.5] close to the threshold of significance, indicating some merit in a two-factor structure.

PATTERN MATRIX ^A		
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>	Factor	
	1	2
[MA.1]	0.922	
[MA.2]	0.734	
[MA.3]	0.591	
[MA.5]		0.822
[MA.6]		0.756
[MA.4]		0.519
<i>Extraction Method: Principal Axis Factoring.</i>		
<i>Rotation Method: Oblimin with Kaiser Normalization.</i>		
<i>a. Rotation converged in 5 iterations.</i>		

Table 4.36: Pattern matrix for second order dimension ‘misalignment’ (Kaiser criterion).

STRUCTURE MATRIX		
<i>Note: Only scale items with loadings larger than 0.55 are significant. Scale items with loadings lower than 0.3 are discarded.</i>	Factor	
	1	2
[MA.1]	0.868	
[MA.2]	0.767	0.371
[MA.3]	0.625	0.316
[MA.5]		0.812
[MA.6]	0.311	0.763
[MA.4]		0.526
<i>Extraction Method: Principal Axis Factoring.</i>		
<i>Rotation Method: Oblimin with Kaiser Normalization.</i>		

Table 4.37: Structure matrix for second order dimension 'misalignment' (Kaiser criterion).

From Table 4.36 and Table 4.37, we can see that a two-factor model seems to be supported. Not only do all scale items (except for [MA.4], which barely misses the threshold in both tables) load over two factors with significance, they load according to the theoretical underlying structure.

FACTOR CORRELATION MATRIX		
Factor	1	2
1	1.000	0.389
2	0.389	1.000
Extraction Method: Principal Axis Factoring.		
Rotation Method: Oblimin with Kaiser Normalization.		

Table 4.38: Factor correlation matrix for second order dimension 'misalignment' (Kaiser criterion).

From Table 4.38, we can see that there is some evidence of worthwhile correlation between the factors, although the absolute coefficient is somewhat smaller than predicted by the theory.

Scree test. Fig 4.7 is the scree plot, where the eigenvalues are plotted against the number of factors.

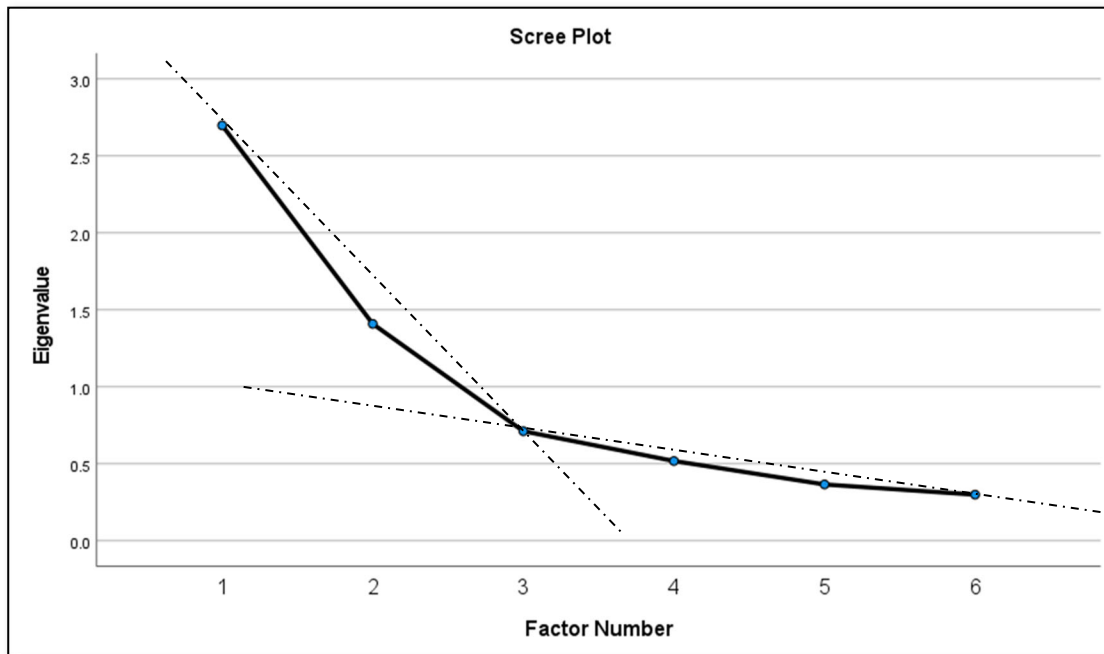


Figure 4.7: *Scree plot for second order dimension ‘misalignment’.*

The scree plot is interpreted by noticing the inflection point. There seems to be some variation in the understanding of the inflection point between researchers, specifically with regards to its usage (Hair et al., 2019:142). Some researchers exclude factors below the ‘elbow’ or inflection point, which is the point where the vertical starts normalising towards the horizontal. In Fig. 4.7, it is the point where the dashed lines cross. Field (2009:640) strictly advises that only the factors to the left of the inflection point (or ‘elbow’) are used (thus three factors, as the inflection occurs at Factor 3), and asserts that the scree plot becomes less accurate for sample sizes below 200. However, it provides an indication that two factors are suitable for the second order dimension ‘misalignment’.

Parallel analysis. A parallel analysis was conducted by making use of the Monte Carlo PCA for Parallel Analysis Ver. 3.0, where 6 variables were simulated for 104 responses, replicated 100 times (see Table 4.39). The number of factors to retain are determined by the number of times the actual eigenvalues are larger than the simulated eigenvalues.

FACTOR NUMBER	ACTUAL EIGENVALUE	CRITERION FROM PARALLEL TEST	DECISION
1	2.698	1,3404	Accept
2	1.409	1,1650	Accept
3	0.711	1,0309	Reject
4	0.518	0,9401	Reject
5	0.365	0,8258	Reject
6	0.299	0,6978	Reject

Table 4.39: *Output from parallel test (misalignment).*

From Table 4.39, we can surmise that a two-factor structure would be optimal for this second order dimension. Therefore, the factor matrix, pattern matrix and structure matrix drawn up can be retained and used for decision-making guidance.

For the second order dimension of misalignment, all the variables are grouped together into two factors as theoretically predicted, therefore the identities of the factors will remain unchanged as ‘context dependency’ [MA.CD] and ‘systematic complexity in capabilities’ [MA.SC].

The only decision which needs to be made, is whether [MA.4] should be retained. Although [MA.4] does not meet the threshold of significant loading in Table 4.36 and Table 4.37, it barely misses the threshold loading of 0.55. From the correlation matrix (Table 4.32), it does, however, correlate somewhat with the other two scale items in its first order sub-dimension, [MA.5] and [MA.6] ($r = 0.423$ and $r = 0.388$ respectively). Thus, for pragmatic reasons, it is decided to retain scale item [MA.4] in the second factor.

4.3.8 Scale profile: Firm performance

Fig. 4.8 depicts the dependent variable ‘firm performance’.

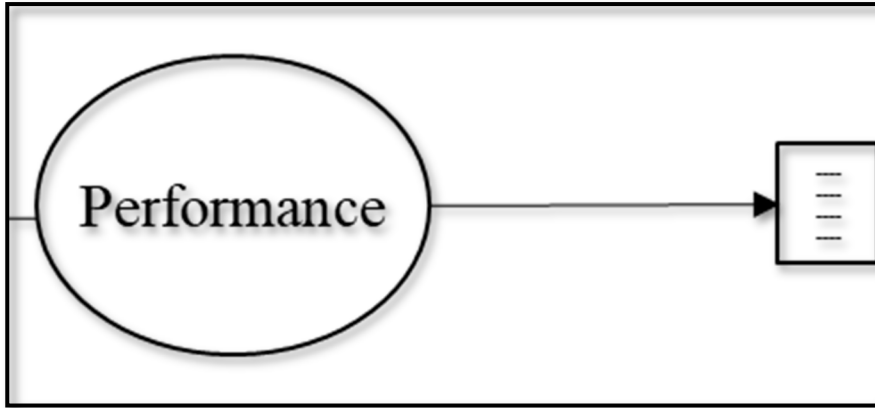


Figure 4.8: *Dependent variable ‘firm performance’.*

As stated in Table 4.2, the dependent variable ‘firm performance’ consists of 4 scale items [FP.1] – [FP.4]. Table 4.40 is an excerpt from Table 4.2 which merely indicates the dimensions, whereas Table 4.41 indicates the descriptive statistics for each of these scale items.

#	DEPENDENT VARIABLE		NUMBER OF SCALE ITEMS	CODE
1.	Firm Performance		4	FP [FP.1, FP.2, FP.3, FP.4]

Table 4.40: *Excerpt from Table 4.2 relating to the dependent variable ‘firm performance’.*

		DESCRIPTIVE STATISTICS									
Scale item	n	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis		S/SE	K/SE
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error		
[FP_1]	104	1	5	2.78	0.955	-0.291	0.237	-0.854	0.469	-1.23	1.8
[FP_2]	104	1	5	3.00	0.914	-0.856	0.237	0.129	0.469	-3.62	0.3
[FP_3]	104	1	5	2.75	0.973	-0.379	0.237	-0.795	0.469	-1.60	1.7
[FP_4]	104	1	5	2.69	0.966	-0.266	0.237	-0.862	0.469	-1.12	1.8

Table 4.41: *Descriptive statistics associated with the dependent variable ‘firm performance’.*

All the values of the dependent variable ‘firm performance’ seem to indicate normality. Although the S/SE for [FP_2] is quite large, the K/SE value is extremely low, along with the associated skewness value (-0.856) and kurtosis value (0.129). Overall, for the dependent variable of ‘firm performance’, there is an acceptable variation amongst the scale items with a sound frequency distribution.

4.3.9 Final reliability assessment – internal consistency

In terms of the scale internal consistency assessment, all first order sub-dimensions will be assessed in terms of how well their respective retained scale items measure an underlying construct. Following this, it is important to see how the first order sub-dimensions themselves are internally consistent in relation to their respective second order constructs, which in turn will also be assessed for internal consistency. The assessment of all latent (or independent) variables (all dimensions) will be reported in Table 4.42 of the overall model. The dependent variable, ‘firm performance’, will also be reported on in terms of internal consistency.

Pallant (2016:119-120) provides guidelines when assessing for internal consistency:

- All inter-item correlation matrices should be scrutinised for negative values – there should be no negative values, as these indicate that a reverse scoring part of the scale was not reversed prior to the data analysis.
- In the ‘total item statistics’ table, corrected item total correlation values which are negative are indicative of incorrect scoring.
- In terms of Cronbach’s Alpha coefficients, any score above 0.7 is deemed acceptable, with scores above 0.8 indicative of good internal consistency. However, Pallant (2016:116;119) warns that any construct with fewer than 10 items is prone to exhibit a low Cronbach Alpha coefficient. If this is the case, the mean inter-item correlation between items should be stated, with optimal ranges between 0.2 and 0.4.
- Corrected item total correlation values which are low (below 0.3), along with a low Cronbach’s Alpha coefficient, should be considered for removal.
- In the ‘item total statistics’, in the column ‘Alpha if deleted’, should be reported if any of these Cronbach’s Alpha coefficients are higher than the coefficient in the ‘reliability statistics’ table.

4.3.9.1 Internal consistency – latent variables.

PRELIMINARY INTERNAL CONSISTENCY – LATENT VARIABLES									
Scale items	First order sub-dimension	Second order dimension	Negative values in Inter-item correlation matrix	Cronbach's Alpha	Inter-item correlation means (Mean / range) <i>[only if Cronbach's Alpha is below 0.7]</i>				
[ER.1]	[ER.VIA]	[ER]	No	0.755	0.385 / 0.000				
[ER.2]			No						
[ER.3]			No						
[ER.5]			No						
			No						
[ER.6]	[ER.VIS]		No	0.762					
[ER.7]			No						
[ER.8]			No						
[ER.15]			No						
			Yes						
[ER.12]	[ER.ID]		No	0.552		0.385 / 0.000			
[ER.13]			No						
			Yes						
			[ER]	No		0.165	0.070 / 0.379		
[AM.1]	[AM]		[AM]	No		0.919			
[AM.2]		No							
[AM.3]		No							
[AM.4]		No							
[AM.6]		No							
[AM.7]		No							
[AM.8]		No							
[AM.9]		No							
[AM.10]		No							
[AM.13]		No							
[AM.14]		No							
[AM.15]		No							
		No							
					No			0.919	
[MA.1]		[MA.CD]		[MA]	No			0.783	0.321 / 0.000
[MA.2]	No								
[MA.3]	No								
	No								
[MA.4]	[MA.SC]	No	0.738						
[MA.5]		No							
[MA.6]		No							
		No							
		[MA]	No		0.486	0.321 / 0.000			

Table 4.42: Preliminary internal consistency of first order and second order latent variables.

On inspecting Table 4.42, there are two glaring problems – with [ER.ID] and [MA].

[ER.ID] as a construct has low reliability ($\alpha = 0.552$), and negatively influences [ER] to the extent that [ER] exhibits an unnaturally low Cronbach's Alpha coefficient ($\alpha = 0.165$). It exhibits a negative value against [ER.VIS] in the inter-item correlation matrix. Furthermore, the value provided for [ER.ID] the 'Item – Total Statistics' under 'Cronbach's Alpha if item deleted' is 0.445. Lastly, when looking at the 'Corrected Item - Total Correlation' for [ER.ID] the value is -0.046, thus well below the threshold of 0.3. All this is indicative that there are conceptual or theoretical problems with the scale items of [ER.ID], and as such [ER.ID] will be discarded in terms of any further analysis.

Seemingly, [MA] is a similar case just by looking at the Cronbach's Alpha and the inter-item correlations. However, unlike [ER.ID], there are no negative values in the inter-item correlation matrix, and the two second order dimensions [MA.CD] and [MA.SC] exhibit acceptable Cronbach's Alpha values ($\alpha = 0.783$ and $\alpha = 0.738$ respectively). The 'Corrected Total-Item Correlation' values for [MA.CD] and [MA.SD] are above the threshold of 0.3 ($r = 0.321$ and $r = 0.321$ respectively). Thus, [MA] will be retained as a second order dimension.

Table 4.43 indicates the final internal consistency of latent variables, with only [ER.ID] removed.

Although the Cronbach's Alpha coefficient for [ER] increased dramatically, it is still below an acceptable threshold. The Cronbach's Alpha coefficient of [MA] is also low ($\alpha = 0.486$). However, both the Corrected Total Item Correlation values for [ER] and [MA] are above the threshold of 0.3 ($r = 0.568$ and $r = 0.533$), therefore both second order dimensions will be retained.

When interpreting Table 4.44, we can see that the Cronbach's Alpha coefficient for the main dimension, 'prevalence of resource erosion', or [PREV], is 0.757. However, this is indicative of potential disposal of [ER] and [MA] relating to regression analysis and SEM-PLS.

FINAL INTERNAL CONSISTENCY – LATENT VARIABLES								
Scale items	First order sub-dimension	Second order dimension	Negative values in Inter-item correlation matrix	Cronbach's Alpha	Inter-item correlation means (Mean / range) <i>[only if Cronbach's Alpha is below 0.7]</i>			
[ER.1]			No					
[ER.2]			No					
[ER.3]			No					
[ER.5]			No					
	[ER.VIA]		No	0.755				
[ER.6]			No					
[ER.7]			No					
[ER.8]			No					
[ER.15]			No					
	[ER.VIS]		No	0.762				
			No					
			No					
			[ER]	No		0.445	0.287 / 0.00	
[AM.1]				No				
[AM.2]				No				
[AM.3]		No						
[AM.4]		No						
[AM.6]		No						
[AM.7]		No						
[AM.8]		No						
[AM.9]		No						
[AM.10]		No						
[AM.13]		No						
[AM.14]		No						
[AM.15]		No						
				[AM]	No			0.919
[MA.1]					No			
[MA.2]	No							
[MA.3]	No							
	[MA.CD]	No	0.783					
[MA.4]		No						
[MA.5]		No						
[MA.6]		No						
	[MA.SC]	No	0.738					
		[MA]	No		0.486	0.321 / 0.000		

Table 4.43: Final internal consistency of first order and second order latent variables.

SECOND ORDER DIMENSION	MAIN DIMENSION	CRONBACH'S ALPHA (>0.7)	CORRECTED ITEM-TOTAL CORRELATION (>0.3)
[ER]	[PREV]	0.445	0.568
[AM]		0.919	0.671
[MA]		0.486	0.533
		0.757	n/a

Table 4.44: Main order dimension 'prevalence' internal consistency.

4.3.9.2 Internal consistency – dependent variable

The internal consistency of the dependent variable, 'firm performance', or [FP], is good, as the Cronbach's Alpha coefficient is 0.889, and there are no negative values in the Inter-item correlation matrix. This is not surprising, as [FP] makes use of an existing scale, as opposed to the rest of the model, for which a scale was developed.

4.4 Construct descriptive statistics

DESCRIPTIVE STATISTICS - CONSTRUCTS												
	N	Min	Max	Mean		SD	Skewness		Kurtosis		S/SE	K/SE
	Stat	Stat	Stat	Stat	Std. Error	Stat	Stat	Std. Error	Stat	Std. Error		
ER_VIA	104	1.00	4.50	2.6058	0.08734	0.89068	-0.089	0.237	-0.468	0.469	-0.375	-0.998
ER_VIS	104	1.00	4.50	2.1202	0.08290	0.84545	0.719	0.237	0.066	0.469	3.036	0.141
ER_ID	104	1.00	5.00	2.2308	0.09636	0.98267	0.442	0.237	-0.506	0.469	1.866	-1.078
ER	104	1.00	3.75	2.3630	0.06829	0.69641	-0.137	0.237	-0.706	0.469	-0.577	-1.504
AM	104	1.00	4.64	2.1031	0.07900	0.80569	0.790	0.237	0.434	0.469	3.335	0.924
MA_CD	104	1.00	5.00	2.0705	0.08590	0.87599	0.796	0.237	0.478	0.469	3.362	1.018
MA_SC	104	1.00	5.00	3.1314	0.08635	0.88059	0.094	0.237	-0.221	0.469	0.396	-0.471
MA	104	1.00	4.67	2.6010	0.06999	0.71372	0.254	0.237	0.243	0.469	1.072	0.518
PREV	104	1.08	4.09	2.3557	0.05954	0.60720	0.244	0.237	-0.183	0.469	1.030	-0.391
FP	104	1.00	4.00	2.8053	0.08083	0.82435	-0.414	0.237	-0.759	0.469	-1.750	-1.617
Valid N (listwise)	104											

Table 4.45: Descriptive statistics of constructs.

Table 4.45 provides us with the descriptive statistics of the constructs. In terms of assessing for normality, skewness / skewness standard error ratios as well as the kurtosis / kurtosis standard error ratios should not be larger value than -2 or +2. If so, it should be interpreted with the respective skewness or kurtosis statistic (larger than -1 or +1, for instance).

Three constructs stand out in terms of their S/SE ratios – [ER.VIS], [AM] and [MA.CD]. All three have S/SE values larger than +2, but acceptable K/SEs, along with skewness and kurtosis statistics lower than 1. The standard error of the mean is also much smaller than the respective standard deviations for each variable, which further contributes to our argument in favour of normality. Along with the central limit theorem, normality can thus be assumed for all constructs.

The five-point Likert-type scale used for this study was calibrated in such a way that 3 was the midpoint, or zero-point, for all constructs except [PREV] and [FP]. [PREV] is an artificial construct and the main order dimension consisting of [ER], [AM] and [MA], and all values in Table 4.45 relating to [PREV] will thus be compounded, as it theoretically represents all the independent variables. [FP] used a 4-point Likert-type scale, where values 1 and 2 were negative, and 3 and 4 were positive.

From the descriptive statistics, a couple of observations of the *sample* (the 104 respondents) can be made by mere inspection of Table 4.45:

- The standard error of the mean is quite small and fairly similar throughout all constructs (except [PREV], which is the main order construct) which indicate that the expected mean statistics for the population would be quite near the respective means of each construct.
- All means are below the midpoint 3, except [MA.SC], which is slightly over the midpoint. Placed in context, this means that the mean indicates a positive perceived prevalence of resource complexity as articulated by the theoretical model.
- Assessing the mean of [PREV] and [FP], this means that the prevalence of resource vulnerability was below the midpoint, but firm performance was above the midpoint.

4.5 Group differences

In the underlying theoretical model, the size (measured in hectares under vine, with 100ha as the cut-off point) and area ('traditional winelands' versus areas elsewhere) are predicted to act as moderators, albeit in a weak capacity. The need for moderation by these two moderators stems from the industry literature, where area and size seem to constantly appear as significant factors in wine production and performance. This moderation will appear later in this chapter, but the fact that there are two binomial variables which divide our sample, allows for comparison of different groups with one another in terms of all the constructs. To this end, the group differences as a consequence of size and area was analysed by conducting independent samples t-tests.

An independent samples t-test is conducted when the mean scores of two distinct groups of a sample is compared with one another, indicating if a statistically significant difference exists between two groups of the same population (Pallant, 2016:263-264). For the purpose of the t-tests, the categorical, independent variables will be size and area respectively, and each will be compared to all the constructs in the theoretical model.

It should be noted that for both size and area, there were no missing values, thus the responses of all 104 respondents are used. The independent variable 'size' will be evaluated first, followed by 'area'.

4.5.1 'Size'

Group Statistics					
Size		N	Mean	Std. Deviation	Std. Error Mean
ER_VIA	0 No, my organisation has less than 100 ha under vine	77	2.5747	0.88208	0.10052
	1 Yes, my organisation has more than 100 ha under vine	27	2.6944	0.92594	0.17820
ER_VIS	0 No, my organisation has less than 100 ha under vine	77	2.1136	0.88439	0.10079
	1 Yes, my organisation has more than 100 ha under vine	27	2.1389	0.73815	0.14206
ER_ID	0 No, my organisation has less than 100 ha under vine	77	2.2078	1.01745	0.11595
	1 Yes, my organisation has more than 100 ha under vine	27	2.2963	0.89076	0.17143
ER	0 No, my organisation has less than 100 ha under vine	77	2.3442	0.69926	0.07969
	1 Yes, my organisation has more than 100 ha under vine	27	2.4167	0.69856	0.13444
AM	0 No, my organisation has less than 100 ha under vine	77	2.0579	0.81857	0.09328
	1 Yes, my organisation has more than 100 ha under vine	27	2.2323	0.76781	0.14777
MA_CD	0 No, my organisation has less than 100 ha under vine	77	2.1255	0.87030	0.09918
	1 Yes, my organisation has more than 100 ha under vine	27	1.9136	0.88960	0.17120
MA_SC	0 No, my organisation has less than 100 ha under vine	77	3.1645	0.90906	0.10360
	1 Yes, my organisation has more than 100 ha under vine	27	3.0370	0.80242	0.15443
MA	0 No, my organisation has less than 100 ha under vine	77	2.6450	0.71551	0.08154
	1 Yes, my organisation has more than 100 ha under vine	27	2.4753	0.70666	0.13600
PREV	0 No, my organisation has less than 100 ha under vine	77	2.3490	0.61190	0.06973
	1 Yes, my organisation has more than 100 ha under vine	27	2.3748	0.60465	0.11636
FP	0 No, my organisation has less than 100 ha under vine	77	2.9935	1.07756	0.12280
	1 Yes, my organisation has more than 100 ha under vine	27	3.0370	0.91909	0.17688

Table 4.46: Group statistics of independent variable 'size'.

From inspection, the number of respondents reporting the size of their organisation to be less than 100ha under vine, is lopsided. From the outset, this produces a problem in terms of normality for the group of 27 respondents. However, the t-test should still provide an indication of means comparison.

INDEPENDENT SAMPLES TEST										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig. (>.05)	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ER_VIA	Equal variances assumed	0.022	0.882	-0.599	102	0.550	-0.120	0.200	-0.516	0.277
	Equal variances not assumed			-0.585	43.667	0.561	-0.120	0.205	-0.532	0.293
ER_VIS	Equal variances assumed	1.000	0.320	-0.133	102	0.895	-0.025	0.190	-0.402	0.352
	Equal variances not assumed			-0.145	54.074	0.885	-0.025	0.174	-0.374	0.324
ER_ID	Equal variances assumed	0.509	0.477	-0.401	102	0.689	-0.089	0.221	-0.526	0.349
	Equal variances not assumed			-0.428	51.541	0.671	-0.089	0.207	-0.504	0.327
ER	Equal variances assumed	0.025	0.874	-0.464	102	0.644	-0.073	0.156	-0.383	0.238
	Equal variances not assumed			-0.464	45.556	0.645	-0.073	0.156	-0.387	0.242
AM	Equal variances assumed	0.451	0.503	-0.968	102	0.335	-0.174	0.180	-0.532	0.183
	Equal variances not assumed			-0.998	48.233	0.323	-0.174	0.175	-0.526	0.177
MA_CD	Equal variances assumed	0.076	0.783	1.083	102	0.281	0.212	0.196	-0.176	0.600
	Equal variances not assumed			1.071	44.659	0.290	0.212	0.198	-0.187	0.611
MA_SC	Equal variances assumed	1.453	0.231	0.645	102	0.520	0.127	0.198	-0.264	0.519
	Equal variances not assumed			0.685	51.126	0.496	0.127	0.186	-0.246	0.501
MA	Equal variances assumed	0.001	0.982	1.064	102	0.290	0.170	0.160	-0.147	0.486
	Equal variances not assumed			1.070	46.019	0.290	0.170	0.159	-0.149	0.489
PREV	Equal variances assumed	0.071	0.791	-0.189	102	0.851	-0.026	0.136	-0.296	0.245
	Equal variances not assumed			-0.190	45.998	0.850	-0.026	0.136	-0.299	0.247
FP	Equal variances assumed	0.748	0.389	-0.187	102	0.852	-0.044	0.232	-0.505	0.418
	Equal variances not assumed			-0.202	52.900	0.841	-0.044	0.215	-0.475	0.388

Table 4.47: *Independent samples test – size.*

From Table 4.47 it is evident that in all cases equal variances can be assumed, as the significance levels of the Levene's tests are all above 0.05. This means that the variances between the two groups relating to size are the same. Therefore, the data in the 'equal variances not assumed' rows are greyed out for readability. However, neither of the two 'size' groups indicate statistically significant differences in mean scores, as all the 'Sig.(2-tailed)' *p*-values are above 0.05. This implies that there is no significant

difference in mean scores between wine-producing entities with less than 100ha under vine and wine-producing entities with more than 100ha under vine. However, as the two groups are not equiponderant in size (77 respondents versus 27) only an indication of no difference can be inferred.

To interpret effect sizes, Table 4.48 provides some insight. The Cohen's d value can be interpreted in the following way (Pallant, 2016:267):

- Values above 0.2 indicate a small effect
- Values above 0.5 indicate moderate effect
- Values above 0.8 indicate large effect

From the point estimates in bold in Table 4.48, there seems to be an indication of small effect sizes relating to 'ambiguity' and 'misalignment' (specifically 'context dependency'), where the mean scores of 'ambiguity' is slightly larger at wine-producers with more than 100ha under vine ($d = -0.216$ [AM]), and mean scores from 'misalignment' is slightly less at wine-producers with more than 100ha under vine ($d = 0.242$ [MA.CD] and $d = 0.238$ [MA]). However, these differences are not statistically significant, and no generalisation can be made.

INDEPENDENT SAMPLES EFFECT SIZES					
		Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
ER_VIA	Cohen's d	0.89347	-0.134	-0.572	0.305
	Hedges' correction	0.90010	-0.133	-0.568	0.303
	Glass's delta	0.92594	-0.129	-0.568	0.312
ER_VIS	Cohen's d	0.84951	-0.030	-0.468	0.409
	Hedges' correction	0.85582	-0.030	-0.465	0.406
	Glass's delta	0.73815	-0.034	-0.472	0.405
ER_ID	Cohen's d	0.98670	-0.090	-0.528	0.349
	Hedges' correction	0.99403	-0.089	-0.524	0.346
	Glass's delta	0.89076	-0.099	-0.538	0.341
ER	Cohen's d	0.69908	-0.104	-0.542	0.335
	Hedges' correction	0.70427	-0.103	-0.538	0.333
	Glass's delta	0.69856	-0.104	-0.542	0.336
AM	Cohen's d	0.80593	-0.216	-0.655	0.223
	Hedges' correction	0.81192	-0.215	-0.650	0.222
	Glass's delta	0.76781	-0.227	-0.668	0.218
MA_CD	Cohen's d	0.87526	0.242	-0.198	0.681
	Hedges' correction	0.88176	0.240	-0.197	0.676
	Glass's delta	0.88960	0.238	-0.207	0.679
MA_SC	Cohen's d	0.88310	0.144	-0.295	0.583
	Hedges' correction	0.88966	0.143	-0.293	0.579
	Glass's delta	0.80242	0.159	-0.283	0.598
MA	Cohen's d	0.71326	0.238	-0.202	0.677
	Hedges' correction	0.71856	0.236	-0.201	0.672
	Glass's delta	0.70666	0.240	-0.205	0.681
PREV	Cohen's d	0.61006	-0.042	-0.481	0.396
	Hedges' correction	0.61459	-0.042	-0.477	0.393
	Glass's delta	0.60465	-0.043	-0.481	0.396
FP	Cohen's d	1.03946	-0.042	-0.480	0.397
	Hedges' correction	1.04719	-0.042	-0.477	0.394
	Glass's delta	0.91909	-0.047	-0.485	0.392

*a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control group.*

Table 4.48: Independent sample effect sizes – ‘size’

4.5.2 'Area'

Group Statistics					
Size		N	Mean	Std. Deviation	Std. Error Mean
ER_VIA	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.5160	0.90950	0.13266
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.6798	0.87596	0.11602
ER_VIS	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.1489	0.93492	0.13637
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.0965	0.77164	0.10221
ER_ID	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.1064	0.93795	0.13681
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.3333	1.01477	0.13441
ER	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.3324	0.77199	0.11261
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.3882	0.63329	0.08388
AM	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.0909	0.85343	0.12449
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.1132	0.77163	0.10221
MA_CD	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.0496	0.95295	0.13900
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.0877	0.81534	0.10800
MA_SC	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	3.2553	0.90413	0.13188
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	3.0292	0.85514	0.11327
MA	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.6525	0.73379	0.10703
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.5585	0.70040	0.09277
PREV	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	2.3586	0.65766	0.09593
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.3533	0.56819	0.07526
FP	0 (Durbanville, Helderberg, Paarl, Stellenbosch)	47	3.1383	1.07694	0.15709
	1 (Breedekloof, Cape Peninsula, Philadelphia and Darling, Eastern Cape, Elgin, Franschhoek, Klein Karoo and Garden Route, KwaZulu-Natal)	57	2.8947	0.99434	0.13170

Table 4.49: Group statistics of independent variable 'area'.

INDEPENDENT SAMPLES TEST										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig. (>.05)	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ER_VIA	Equal variances assumed	0.217	0.643	-0.933	102	0.353	-0.164	0.176	-0.512	0.184
	Equal variances not assumed			-0.930	96.774	0.355	-0.164	0.176	-0.514	0.186
ER_VIS	Equal variances assumed	3.644	0.059	0.313	102	0.755	0.052	0.167	-0.279	0.384
	Equal variances not assumed			0.308	89.099	0.759	0.052	0.170	-0.286	0.391
ER_ID	Equal variances assumed	0.216	0.643	-1.174	102	0.243	-0.227	0.193	-0.610	0.156
	Equal variances not assumed			-1.183	100.638	0.239	-0.227	0.192	-0.607	0.154
ER	Equal variances assumed	3.809	0.054	-0.404	102	0.687	-0.056	0.138	-0.329	0.218
	Equal variances not assumed			-0.397	88.763	0.692	-0.056	0.140	-0.335	0.223
AM	Equal variances assumed	1.305	0.256	-0.140	102	0.889	-0.022	0.160	-0.339	0.294
	Equal variances not assumed			-0.139	93.877	0.890	-0.022	0.161	-0.342	0.297
MA_CD	Equal variances assumed	0.323	0.571	-0.220	102	0.827	-0.038	0.173	-0.382	0.306
	Equal variances not assumed			-0.216	91.045	0.829	-0.038	0.176	-0.388	0.312
MA_SC	Equal variances assumed	0.044	0.834	1.308	102	0.194	0.226	0.173	-0.117	0.569
	Equal variances not assumed			1.300	95.989	0.197	0.226	0.174	-0.119	0.571
MA	Equal variances assumed	0.082	0.775	0.667	102	0.506	0.094	0.141	-0.186	0.374
	Equal variances not assumed			0.664	96.390	0.508	0.094	0.142	-0.187	0.375
PREV	Equal variances assumed	3.637	0.059	0.044	102	0.965	0.005	0.120	-0.233	0.244
	Equal variances not assumed			0.044	91.558	0.965	0.005	0.122	-0.237	0.247
FP	Equal variances assumed	0.651	0.422	1.197	102	0.234	0.244	0.203	-0.160	0.647
	Equal variances not assumed			1.188	94.886	0.238	0.244	0.205	-0.163	0.651

Table 4.50: *Independent samples test – ‘area’.*

INDEPENDENT SAMPLES EFFECT SIZES					
		Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
ER_VIA	Cohen's d	0.89124	-0.184	-0.570	0.204
	Hedges' correction	0.89786	-0.183	-0.566	0.202
	Glass's delta	0.87596	-0.187	-0.574	0.201
ER_VIS	Cohen's d	0.84917	0.062	-0.325	0.448
	Hedges' correction	0.85548	0.061	-0.322	0.445
	Glass's delta	0.77164	0.068	-0.319	0.454
ER_ID	Cohen's d	0.98087	-0.231	-0.618	0.157
	Hedges' correction	0.98816	-0.230	-0.614	0.156
	Glass's delta	1.01477	-0.224	-0.611	0.166
ER	Cohen's d	0.69926	-0.080	-0.466	0.307
	Hedges' correction	0.70445	-0.079	-0.462	0.305
	Glass's delta	0.63329	-0.088	-0.474	0.299
AM	Cohen's d	0.80955	-0.028	-0.414	0.359
	Hedges' correction	0.81556	-0.027	-0.411	0.356
	Glass's delta	0.77163	-0.029	-0.415	0.357
MA_CD	Cohen's d	0.88007	-0.043	-0.429	0.343
	Hedges' correction	0.88661	-0.043	-0.426	0.341
	Glass's delta	0.81534	-0.047	-0.433	0.340
MA_SC	Cohen's d	0.87758	0.258	-0.131	0.645
	Hedges' correction	0.88409	0.256	-0.130	0.640
	Glass's delta	0.85514	0.264	-0.126	0.652
MA	Cohen's d	0.71565	0.131	-0.256	0.518
	Hedges' correction	0.72097	0.130	-0.254	0.514
	Glass's delta	0.70040	0.134	-0.253	0.521
PREV	Cohen's d	0.61016	0.009	-0.377	0.395
	Hedges' correction	0.61470	0.009	-0.375	0.392
	Glass's delta	0.56819	0.009	-0.377	0.395
FP	Cohen's d	1.03241	0.236	-0.152	0.623
	Hedges' correction	1.04008	0.234	-0.151	0.618
	Glass's delta	0.99434	0.245	-0.145	0.633

*a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control group.*

Table 4.51: Independent sample effect sizes – ‘area’

From Table 4.49, it is clear that the two groups in terms of ‘area’ seem to be a lot more equiponderant than ‘size’ – 47 respondents reported from ‘traditional’ wine-producing areas, whereas 57 respondents reported from areas outside the ‘traditional’ areas.

From Table 4.50, it is evident that in all cases equal variances can be assumed, as the significance levels of the Levene’s tests are all above 0.05. This means that the variances between the two groups relating to ‘area’ are the same. Therefore, the data in the ‘equal variances not assumed’ rows are greyed out for readability. However, neither of the two ‘area’ groups indicate statistically significant differences in mean scores, as all the ‘Sig.(2-tailed)’ p -values are above 0.05. This implies that there is no significant difference in mean scores between wine-producing entities from within or outside of the traditional wine-producing areas.

The point estimates of Cohen’s d (Table 4.51) do not indicate any effects, except for [ER.ID], [MA.SC] and [FP]. As the construct [ER.ID] has been discarded, no inference will be made about it. From the point estimates in bold in Table 4.51, there seems to be an indication of small effect sizes relating to ‘systematic complexity in capabilities’ and ‘firm performance’, where the mean scores of ‘systematic complexity in capabilities’ is slightly larger at wine-producers within the ‘traditional’ winelands ($d = 0.258$ [MA.SC]). Also, mean scores from ‘firm performance’ is slightly larger for wine producers within the ‘traditional’ winelands ($d = 0.236$ [FP]). However, these differences are not statistically significant, and no generalisation can be made.

4.7 Correlation analysis

The function of correlation analysis is to determine the extent of a linear relationship between two variables (Pallant, 2016:150). Prior to regression analysis and SEM-PLS, it is important to observe to which extent the dependent and independent variables (those constructs which have not been discarded after the EFA and reliability tests) correlate with one another linearly, and to contextualise any correlation.

For the correlation analysis, the Pearson's product-moment coefficient will be used. Pallant (2016:156) advises that the Pearson's coefficient *effect size* should be interpreted as follows:

- $r = 0.1 - 0.29$ – small
- $r = 0.3 - 0.49$ – medium
- $r = 0.5 - 0.1$ – large

The lowest significance level acceptable for the purposes of this study is the 0.05 (2-tailed) level. In Table 4.52, all the statistically significant correlation coefficients have been indicated in bold, and those who are not statistically significant have been greyed out.

There are strong, separate, significant, positive correlations between both [ER.VIA] ($r = .814, p < 0.01$) and [ER.VIS] ($r = .790, p < 0.01$) with [ER]. The correlation between [ER.ID] and any other variable is not statistically significant, thereby validating the removal of this construct. [ER] shows a strong, significant, positive correlation with [PREV] ($r = .798, p < 0.01$), as well as a low, negative, albeit significant correlation with [FP] ($r = -.245, p < 0.05$).

The correlation between [AM] and [PREV] is very strong, positive and significant ($r = .877, p < 0.01$), and correlates significantly, moderately, yet negatively with [FP] ($r = -.392, p < 0.01$) as predicted.

[MA.CD] and [MA.SC] correlate very strongly and significantly with [MA] ($r = .812, p < 0.01$ and $r = .814, p < 0.01$ respectively). [MA] correlates strongly, positively and significantly with [PREV] ($r = .783, p < 0.01$) yet the correlation with [FP] is moderate, significant and negative ($r = -.325, p < 0.01$).

[PREV] correlates moderately, significantly and negatively with [FP] as predicted ($r = -.394, p < 0.01$).

CORRELATIONS ^c											
		ER_VIA	ER_VIS	ER_ID	ER	AM	MA_CD	MA_SC	MA	PREV	FP
ER_VIA	Pearson Correlation	--									
ER_VIS	Pearson Correlation	.287**	--								
	Sig. (2-tailed)	0.003									
ER_ID	Pearson Correlation	0.015	-0.092	--							
	Sig. (2-tailed)	0.881	0.352								
ER	Pearson Correlation	.814**	.790**	-0.046	--						
	Sig. (2-tailed)	0.000	0.000	0.640							
AM	Pearson Correlation	.230*	.721**	-0.099	.585**	--					
	Sig. (2-tailed)	0.019	0.000	0.315	0.000						
MA_CD	Pearson Correlation	.243*	.520**	-0.119	.472**	.580**	--				
	Sig. (2-tailed)	0.013	0.000	0.230	0.000	0.000					
MA_SC	Pearson Correlation	0.069	.224*	-0.172	0.180	.298**	.321**	--			
	Sig. (2-tailed)	0.488	0.022	0.081	0.067	0.002	0.001				
MA	Pearson Correlation	0.192	.458**	-0.179	.400**	.539**	.812**	.814**	--		
	Sig. (2-tailed)	0.051	0.000	0.069	0.000	0.000	0.000	0.000			
PREV	Pearson Correlation	.488**	.800**	-0.132	.798**	.877**	.755**	.519**	.783**	--	
	Sig. (2-tailed)	0.000	0.000	0.182	0.000	0.000	0.000	0.000	0.000		
FP	Pearson Correlation	-0.004	-.399**	0.105	-.245*	-.392**	-.367**	-0.162	-.325**	-.394**	--
	Sig. (2-tailed)	0.969	0.000	0.287	0.012	0.000	0.000	0.101	0.001	0.000	
** . Correlation is significant at the 0.01 level (2-tailed).											
* . Correlation is significant at the 0.05 level (2-tailed).											
c. Listwise N=104											

Table 4.52: Correlations of all variables

From Table 4.52, there are some interesting observations:

- [ER.VIA] does not significantly correlate as predicted with [FP]
- Although not predicted as such, [ER.VIA] correlates somewhat with [MA.CD], but not with [MA.SC] or [MA]
- [ER] correlates strongly and significantly with [AM] ($r = .585, p < 0.01$), and moderately with [MA] ($r = .4, p < 0.01$)
- [ER] is the only second order dimension which shows a low, yet significant and negative correlation with [FP]
- [MA.SC] does not significantly correlate as predicted with [FP]

From the correlations, for the most part, the underlying theoretical structure is evident.

4.8 Modelling: Regression, PLS-SEM and Moderation

4.8.1 Regression

Multiple regression analysis is a procedure where multiple independent variables are measured against a single dependent variable (Hair et al, 2019:265). The objective is to find out to what extent each independent variable can explain or predict the behaviour of the dependent variable and, according to Field (2009:198), it is the logical next step after a correlation analysis.

For the purpose of this study, the independent variables are [ER], [AM] and [MA], and the dependent variable is [FP].

Correct sample size is an important consideration prior to commencing with regression analysis. From Pallant (2016:169-170) there is a generally accepted formula of $N > 50 + 8m$, where m is the number of independent variables. For this analysis, with three independent variables, we need a minimum sample size of 75. The used sample size of 104 comfortably crosses this threshold (see Table 4.53).

Pallant (2016:178) strongly advises to check certain assumptions prior to starting the regression analysis. The first assumption relates to multicollinearity and singularity. All independent variables should show

at least some correlation (preferably $r > .3$, $p < 0.01$), and the independent variables themselves should preferably not correlate more than 0.7.

Correlations					
		FP	ER	AM	MA
Pearson Correlation	FP	1.000	-0.245	-0.392	-0.325
	ER	-0.245	1.000	0.585	0.400
	AM	-0.392	0.585	1.000	0.539
	MA	-0.325	0.400	0.539	1.000
Sig. (1-tailed)	FP		0.006	0.000	0.000
	ER	0.006		0.000	0.000
	AM	0.000	0.000		0.000
	MA	0.000	0.000	0.000	
N	FP	104	104	104	104
	ER	104	104	104	104
	AM	104	104	104	104
	MA	104	104	104	104

Table 4.53: *Correlations between independent variables and dependent variables (Sig 1-tailed)*

From Table 4.53 we can see that [ER] correlates low, negatively with [FP] ($r = .245$, $p = 0.012$ 2-tailed; $p = 0.006$ 1-tailed). However, this correlation is highly significant, and for pragmatic reasons [ER] will not be discarded. Furthermore, the correlations between the independent variables themselves are not above the stated threshold ($r > .7$).

The second assumption to check relates to normality. From the histogram depicted in Fig 4.9, and the scatterplot (Fig. 4.10), along with the central limit theorem, indicate that normality can be assumed, as the residuals are more or less rectangularly distributed around the 0 point of the scatterplot.

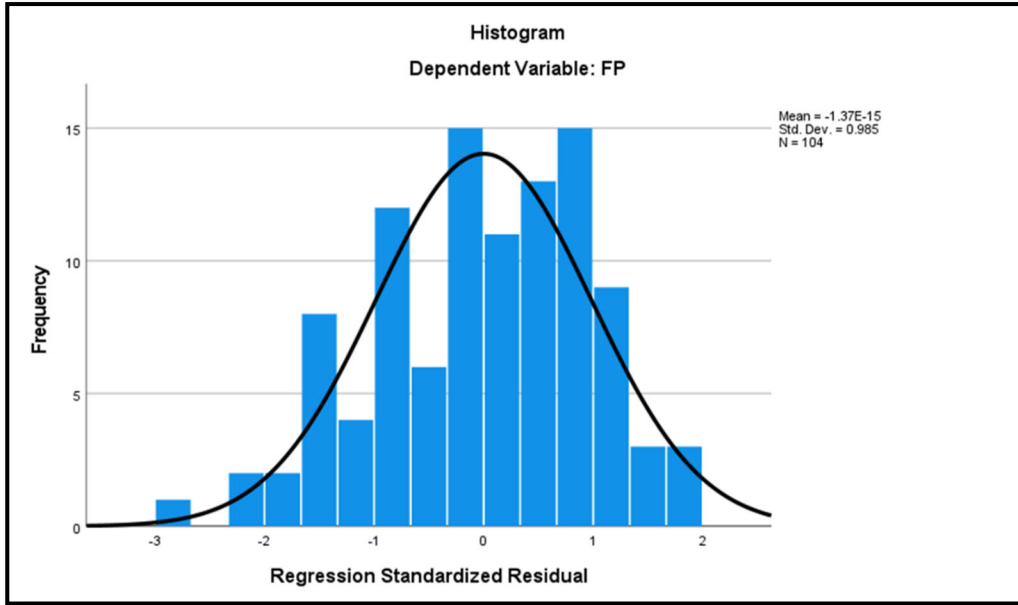


Figure 4.9: Histogram of dependent variable [FP].

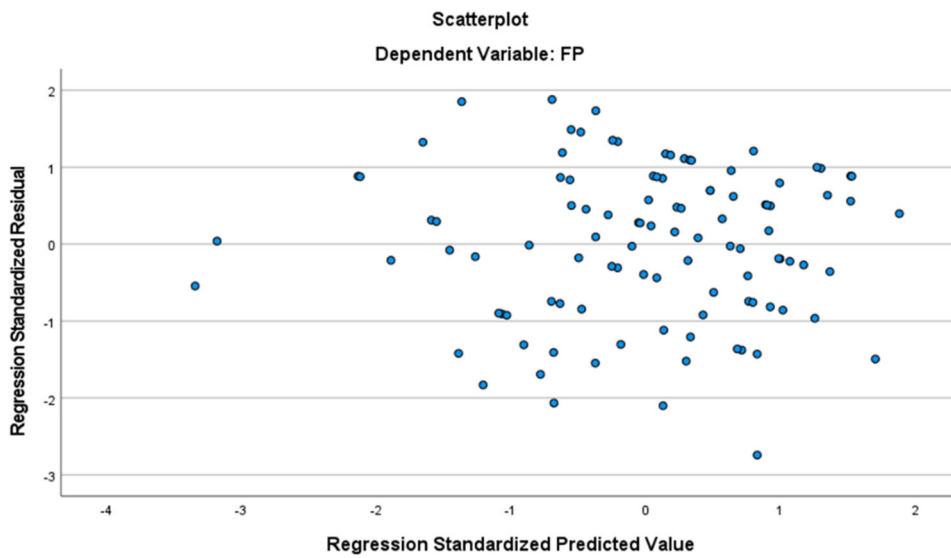


Figure 4.10: Scatterplot for dependent variable FP.

MODEL SUMMARY ^B				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414 ^a	0.172	0.147	0.76140
a. Predictors: (Constant), MA, ER, AM				
b. Dependent Variable: FP				

Table 4.54: Model summary of regression analysis.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.021	3	4.007	6.912	.000^b
	Residual	57.974	100	0.580		
	Total	69.995	103			
a. Dependent Variable: FP						
b. Predictors: (Constant), MA, ER, AM						

Table 4.55: ANOVA for regression analysis.

COEFFICIENTS ^A								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.948	0.325		12.136	0.000	3.303	4.593
	ER	-0.003	0.134	-0.003	-0.025	0.980	-0.269	0.262
	AM	-0.311	0.126	-0.304	-2.468	0.015	-0.560	-0.061
	MA	-0.185	0.126	-0.160	-1.471	0.144	-0.435	0.064
a. Dependent Variable: FP								

Table 4.56: Coefficients table for regression analysis.

RESIDUAL STATISTICS ^A					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.6642	3.4481	2.8053	0.34163	104
Residual	-2.08797	1.43166	0.00000	0.75023	104
Std. Predicted Value	-3.340	1.882	0.000	1.000	104
Std. Residual	-2.742	1.880	0.000	0.985	104
a. Dependent Variable: FP					

Table 4.57: *Residual statistics for regression analysis.*

Interpreting Table 4.54, the ‘R Square’ (0.172) value seems to be a euphemistic overappraisal of the true value of the population, especially when dealing with small samples (Pallant, 2016:181), and the ‘Adjusted R square’ value (0.147) could be utilised instead. As the sample of 104 is comfortably above the required minimum threshold of $n = 75$, the R Square value of 0.172 will be used. The statistical significance of this result is checked by looking at Table 4.55 (ANOVA), in order to assess if the null hypothesis that the multiple R in the population equals 0. As can be seen in the ‘Sig’ column, $p < 0.001$. This means that there is less than a 0.1% chance that an F ratio this large would occur if the null hypothesis were true (Field, 2009:207).

To find out if the independent variables contributed to the prediction of the dependent variable, Table 4.56 (Coefficients) will be utilised. Under ‘standardised coefficients’ and the ‘Beta’ column, the largest value is [AM] (Beta = -0.304). That means that [AM] makes the largest unique contribution to the dependent variable with the other two independent variables, [ER] and [MA], controlled for. However, it is only [AM] which makes a unique contribution which is statistically significant ($p = 0.015$). Any p-value larger than 0.05 is indicative that the contribution from that independent variable is not statistically significant (Pallant, 2016:182).

The overall interpretation of the regression analysis therefore is that only one independent variable, [AM], explains 17.2% of variance in [FP] and makes a unique statistically significant contribution of -0.304 . This means that for every 1-unit shift in a standard deviation of [AM], there will be *negative* shift of 0.304 by [FP].

4.8.2 PLS-SEM

In parallel to the regression analysis, it was decided to make use of partial least-squares structural equation modelling (PLS-SEM) to evaluate the model. It should be noted that the regression analysis will be viewed as the main analysis in terms of the model, and PLS-SEM as a secondary form of analysis.

Originally it was foreseen that PLS-SEM will be utilised, but due to the sample size of 104, it became prudent to primarily make use of exploratory factor analysis, testing for reliability, computing correlations and ultimately conduct regression analysis. PLS-SEM was used in a secondary capacity, which confirmed the results obtained from the regression analysis. Smart-PLS (ver. 3.3.3) was used, along with a bootstrapping procedure of 5000 cases.

It should be noted that regression analysis is categorised as a first-generation technique. Although primarily used in a confirmatory capacity, it could also perform an exploratory role, as the border between confirmatory roles and exploratory roles are not always distinct (Hair et al., 2017:30). In the case of this thesis, it provides confirmatory statistical evidence.

PLS-SEM, as a second-generation technique, is normally used to develop theories in exploratory research (Hair et al., 2017:31). Covariance-based structural equation modelling (CB-SEM) would normally be used in explanatory studies, but PLS-SEM was favoured for three reasons provided by Hair et al. (2017:40-41;43). Firstly, PLS-SEM is efficient with small samples. Secondly, the PLS-SEM is preferred when theory development with the explanation of variance is sought. Thirdly, PLS-SEM should be favoured over CB-SEM when the aim is to derive explanation and prediction of target constructs.

All three aforementioned reasons applied to this research – a small sample size, an untested model derived purely from theory, and a requirement of target construct predictions. As such, PLS-SEM was favoured over CB-SEM, although the nature of the study is still explanatory.

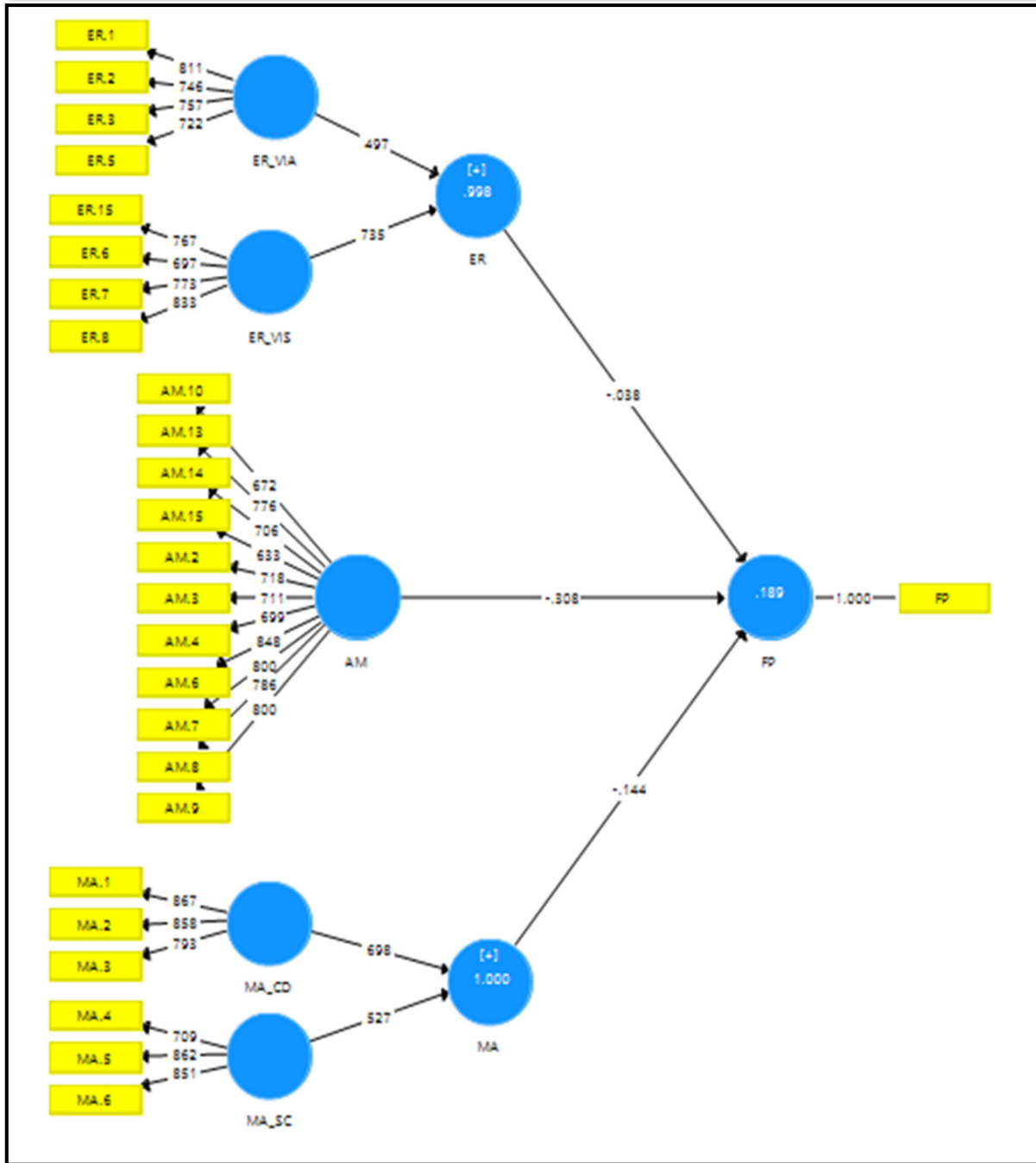


Figure 4.11: Path diagram from Smart-PLS.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
AM -> FP	-.308	-.323	.113	2.733	.006
ER -> FP	-.038	-.046	.135	.284	.776
ER_VIA -> ER	.497	.469	.135	3.679	.000
ER_VIS -> ER	.735	.734	.113	6.515	.000
MA -> FP	-.144	-.131	.105	1.367	.172
MA_CD -> MA	.698	.700	.072	9.746	.000
MA_SC -> MA	.527	.519	.072	7.312	.000

Table 4.58: Path coefficient data from Smart-PLS.

The output from Smart-PLS is remarkably similar to the regression analysis conducted. Interpreting Fig. 4.11 and Table 4.58, only [AM] explains 18.9% of the variance in [FP] and has a unique statistically significant contribution of -.308. Comparing this with the regression analysis, specifically Table 4.56, it is clear that the Smart-PLS value of -.308 is midway between the unstandardised Beta and the standardised beta obtained in the regression analysis. Also, the PLS-SEM procedure seems to validate the decision in the regression analysis of not using the adjusted R Square value of 0.147, but rather the R Square value of 0.172.

4.8.3 Moderation

Hypothesis H(m) and H(n) relates to size (hectares under vine) and area (district) having a moderating effect between resource vulnerability and firm performance. Analyses for both moderators were done on [ER], [AM] and [MA]. The moderation analysis procedure consisted of a stepwise process where in the first step, [FP] was the function of the independent variable and the moderator, followed by a second step where [FP] was the function of the independent variable and the moderator along with its product. The sum of these two steps culminated in the 'R Square Change' value that is reported in Table 4.59. All analyses can be seen in Annexure 5.

Table 4.59 is a summary of the moderation analysis procedure.

SUMMARY OF MODERATION PROCEDURE				
Independent variable	Moderator	R Square Change	Sig. (< 0.05)	Decision (accept / reject)
[ER]	Size	0.006	0.413	Reject
[ER]	Area	0.001	0.809	Reject
[AM]	Size	0.001	0.787	Reject
[AM]	Area	0.001	0.739	Reject
[MA]	Size	0.018	0.155	Reject
[MA]	Area	0.010	0.301	Reject

Note: In all cases dependent variable is [FP].

Table 4.59: Summary of moderation procedure.

Thus, neither size nor area had a statistically significant moderating effect.

4.9 Hypotheses

From Chapter 3, Section 3.2.2, the hypotheses for the study were derived. These hypotheses, along with the corresponding null hypotheses, are accepted or rejected, as shown in Table 4.60.

Hypothesis	Null hypothesis	Decision for null hypothesis
H1(a) - There is a strong, but negative relationship between the prevalence of resource vulnerability and firm performance.	H0(a) - There is no statistically significant relationship between the prevalence of resource vulnerability and firm performance.	Reject ($r = -.394$, $p < 0.01$, 2-tailed)
H1(b) - There is a strong, but negative relationship between erosion and firm performance.	H0(b) - There is no statistically significant relationship between erosion and firm performance.	Reject ($r = -.245$, $p < 0.05$, 2-tailed)
H1(c) - There is a strong, but negative relationship between value-induced attrition and firm performance.	H0(c) - There is no statistically significant relationship between value-induced attrition and firm performance.	Accept ($r = -.004$, $p = 0.969$, 2-tailed)
H1(d) - There is a strong, but negative relationship between value-induced skewness and firm performance.	H0(d) - There is no statistically significant relationship between value-induced skewness and firm performance.	Reject ($r = -.399$, $p < 0.01$, 2-tailed)
H1(e) - There is a strong, but negative relationship between intangible delicateness and firm performance.	H0(e) - There is no statistically significant relationship between intangible delicateness and firm performance.	Accept ($r = .105$, $p = 0.287$, 2-tailed) Construct discarded after reliability testing.

H1(f) - There is a strong, but negative relationship between ambiguity and firm performance.	H0(f) - There is no statistically significant relationship between ambiguity and firm performance.	Reject ($r = -.392, p < 0.01, 2\text{-tailed}$)
H1(g) - There is a strong, but negative relationship between resource ambivalence and firm performance.	H0(g) - There is no statistically significant relationship between resource ambivalence and firm performance.	Accept Construct discarded during EFA.
H1(h) - There is a strong, but negative relationship between linkage ambiguity and firm performance.	H0(h) - There is no statistically significant relationship between linkage ambiguity and firm performance.	Accept Construct discarded during EFA.
H1(i) - There is a strong, but negative relationship between tacitness and firm performance.	H0(i) - There is no statistically significant relationship between tacitness and firm performance.	Accept Construct discarded during EFA.
H1(j) - There is a strong, but negative relationship between misalignment and firm performance.	H0(j) - There is no statistically significant relationship between misalignment and firm performance.	Reject ($r = -.325, p = 0.01, 2\text{-tailed}$)
H1(k) - There is a strong, but negative relationship between context dependency and firm performance.	H0(k) - There is no statistically significant relationship between context dependency and firm performance.	Reject ($r = -.367, p < 0.01, 2\text{-tailed}$)
H1(l) - There is a strong, but negative relationship between systematic complexity of capabilities and firm performance.	H0(l) - There is no statistically significant relationship between systematic complexity of capabilities and firm performance.	Accept ($r = -.162, p = 0.101, 2\text{-tailed}$)
H1(m) – Size as a moderator will have a low moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.	H0(m) – Size as a moderator will have no statistically significant moderating effect on the relationship between the prevalence of resource vulnerability.	Accept ($p > 0.05$)
H1(n) – District as a moderator will have a low- to medium moderating effect on the relationship between the prevalence of resource vulnerability and firm performance, in the same direction.	H0(n) – District as a moderator will have no statistically significant moderating effect on the relationship between the prevalence of resource vulnerability and firm performance.	Accept ($p > 0.05$)

Table 4.60: *Acceptance or rejection of null hypotheses.*

The consequences of the rejected null hypotheses should be interpreted with caution. The ‘relationship’ referred to, and which subsequently formed the basis of the null hypotheses rejections, are not explanatory. If that were the case, then only one hypothesis, H0(f), would have been rejected. As such, only H1(f) has proved to have some explanatory (or rather, predictive) relationship with the dependent variable, [FP].

4.10 Resultant model

From a correlation-type relationship, Fig. 4.12 shows the model of Reformed Curatorship.

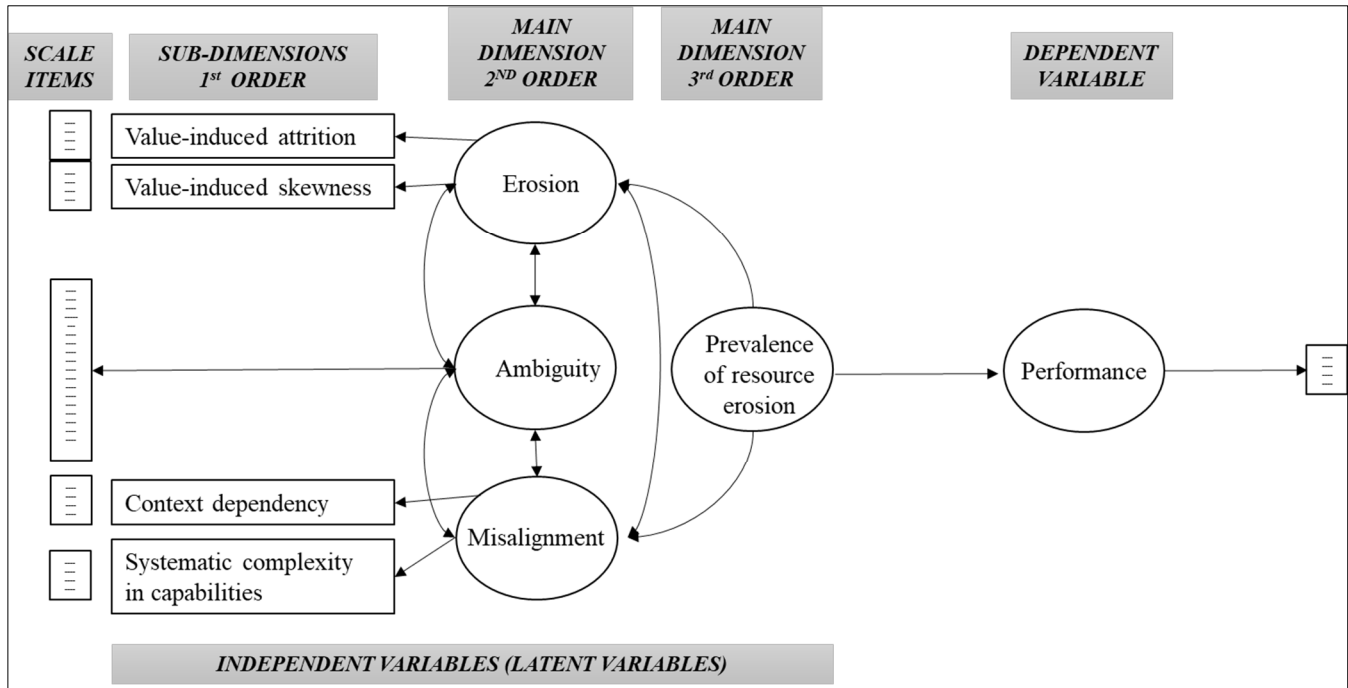


Figure 4.12: Model from a correlation perspective.

Note the absence of moderators, along with all first order subdimensions for ‘ambiguity’ and the absence of ‘intangible delicateness’ as a first order sub-dimension of ‘erosion’. From an explanatory, or predictive relationship perspective, the model would look quite different, as can be seen in Fig. 4.13.

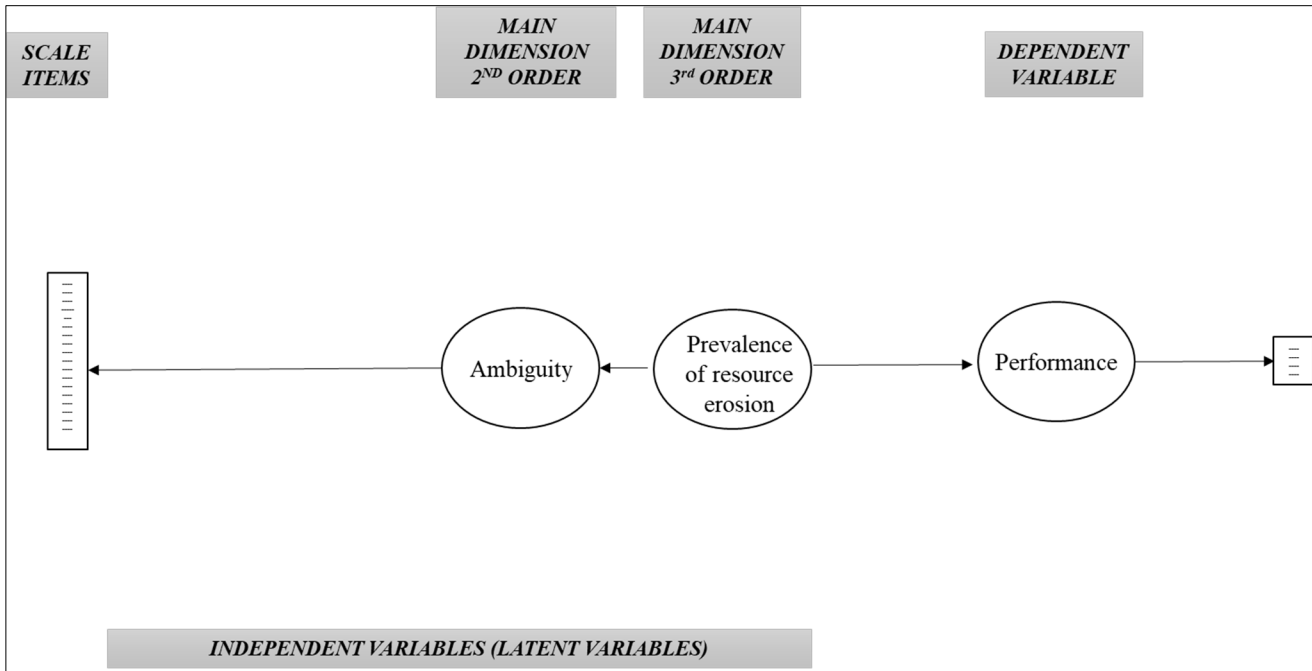


Figure 4.13: *Model from a predictive or explanatory perspective.*

4.11 Summary of analysis

The chapter commenced with a reflection on the nature of the population, sampling frame and sample size. The pragmatic reasons for sample size determination were provided, creating an argument for a sample size of 104. Anomalies, challenges and positive salient features of the data collection process were articulated. The possible theoretical overestimation of the population size, the desultory decline of response rates due to the COVID-19 pandemic and a disconnect between the potential respondent and scale instrument contributed to a sample size smaller than envisioned. However, the quality of respondents led to no unengaged responses, and the automation of the survey process (using LimeWire) resulted in a complete data set, devoid of any missing values.

Scale assessment commenced with a reiteration of all hypotheses, as developed in Chapter 3, along with the theoretical structure underlying Reformed Curatorship. The coding of the different constructs, along with their segmentation into first, second and third order dimensions were articulated. Reporting on case screening, it was determined that there were no missing values, nor were any of the respondents unengaged – all 104 responses could thus be utilised.

A theoretical overview of exploratory factor analysis (EFA), along with an overview of descriptive statistics, preceded the actual EFA. The EFA consisted of three sequential steps for each construct. During this process, multiple scale items were discarded within 'erosion' and 'ambiguity'. Mild suspicions were raised about the construct of 'intangible delicateness', but there was no tangible reason for removal.

However, the two constructs 'context dependency' and 'systematic complexity of capabilities' fared well during the EFA, as all scale items were grouped according to the original theoretical prediction. Although some scale items were moved from one construct to another within 'erosion' the identities of the constructs themselves remained unchanged.

The largest anomaly produced by the EFA was that ambiguity could not be segmented into further constructs as the theory suggested, yet it proved to have a most robust internal consistency compared to 'erosion' and 'misalignment'.

The EFA was followed by a reliability assessment, which led to the removal of 'intangible delicateness' as an independent variable. The constructs 'erosion' and 'misalignment' indicated low internal consistency but could be retained due to their favourable corrected total-item correlation scores.

A contextualisation of construct descriptives followed, where it was noted that in terms of the sample, all except one independent variable (systematic complexity of capabilities) had means below their midpoint, but the dependent variable, firm performance, was above the midpoint.

The two exogenous variables, size and area (earmarked to be tested as moderators), were used to group the sample into respective groups. Due to the lopsided nature of the groups segmented by size, little generalisations could be made. It should be noted that neither 'size' nor 'area' appeared to differ significantly statistically from one another.

Correlation analysis was conducted and formed the basis for the hypothesis testing. All second order dimensions correlated significantly and negatively with the dependent variable as predicted, albeit moderately as opposed to strongly (as predicted by the theory). Two first order dimensions, [ER.VIA] and [MA.SC], did not correlate significantly with [FP], but [ER.VIS] and [MA.CD] showed moderate,

negative and significant correlation. The correlation analysis also validated the decision to remove [ER.ID].

A regression analysis was conducted to see if there are any explanatory or predictive relationships between the independent variables and the dependent variable. It was found that only ‘ambiguity’ could explain 17.2% of variance in ‘firm performance’, and its unique statistically significant contribution was calculated to be -.304.

In parallel to the regression analysis, PLS-SEM was used, and the variables bootstrapped to 5 000 cases. From this, an almost identical result was obtained – ‘ambiguity’ could explain 18.9% of variance in ‘firm performance’ and its unique statistically significant contribution was calculated to be -.308.

Although the regression analysis and PLS-SEM did not denote ‘misalignment’ as statistically significant, the results did appear promising, or at least aligned with theoretical predictions. This was not the case with ‘erosion’.

The two exogenous variables, (‘size’ and ‘area’) marked for moderation were subjected to analysis and found to harbour no statistical significance in terms of acting as moderating variables with any of the independent variables. This is remarkable, as ‘size’ and ‘area’ appears in literature relating to wine-producing entities quite often.

Null hypotheses could be accepted or rejected. Eight null hypotheses were accepted, and six were rejected.

Throughout the analysis phase, a very incremental, stepwise procedure was followed in congruence with the scientific method of inquiry.

Ultimately, the analysis of data contributed greatly to a better understanding of how a theoretical framework manifested as a model, within a specific industry. From a correlation relationship point of view, a large part of the model behaved in a way as predicted theoretically. From a prediction or explanatory point of view, it might appear that the model was overly reduced. However, this specific

contribution is actionable. Given a larger sample, sampling frame and population, there should be less difference between the correlation relationship model and the explanatory, more actionable model.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter will present salient findings from the literature review, followed by a re-articulation of findings from the data analysis, with special emphasis on the data collection phase. Limitations of the research results will be stated, followed by conclusions relating to the achievement of the research objectives and, by implication, the research purpose.

The significance of the research will be discussed in terms of contributions to the literature, future researchers and industry. Specifically, recommendations for the South African wine producers will be made in terms of curbing ambiguity.

5.2 Summary of findings

This section provides a summary of findings relating to the literature, as well as the data analysis. Findings from the literature will be discussed and shown how these were incorporated into the research design. Findings from the data analysis will be reiterated and linked to the findings in the theory. Lastly, gaps, anomalies and deviations in the data will provide a foundation for the following section which relates to the limitations of the research.

5.2.1 Findings from the literature review

During the literature review, it was found that the fundamental concept of Curatorship is an innovative, utilitarian approach to the resource-based view within the realm of strategic management. The basic premise was that curators at museums confront the same paradoxes as managers within firms. Museum curators need to balance the need to display vulnerable, irreplaceable artefacts to hordes of people without exposing the artefacts to uncontrolled deterioration. Similarly, managers need to employ resources and capabilities to obtain a competitive advantage, but without unsustainably consuming (or destroying!) those same resources which are difficult to replace, or resources and capabilities which are generally non-substitutable.

It was found that the fundamental building blocks of Curatorship by Le-Breton Miller and Miller (2015) consisted of well-articulated paradoxes and carefully derived theoretical constructs, especially in relation to the ‘challenges’ of erosion, ambiguity and misalignment. Through a comprehensive, incremental retracing of their journey through the literature on which their work was based, a fair number of discrepancies were found in terms of their interpretation of literature. These discrepancies were small, but they were numerous throughout all the constructs and sub-constructs of the ‘challenges’. Although none of the major constructs was incorrect, two out of eight sub-constructs were incorrectly portrayed. However, the numerous discrepancies had a compounding effect on the ‘preventative’ measures, as some of the theory underpinning the ‘preventative’ measures exhibited diminishing utility. The result was a change in *six of the eight sub-sections* of the ‘preventative’ part of the framework (see Chapter 2, Section 2.5, Fig. 2.3).

Theoretical frameworks seem to suffer from their constructs being equiponderant by default. The original authors of Curatorship cannot be held accountable for this in any way. In order to move away from equiponderant constructs, as well as to prepare for explanatory research of Curatorship, a theoretical ‘danger weighting’ was added to each construct by the researcher of this study. Furthermore, the model itself was not linked to another variable – ‘firm performance’ was chosen as a dependent variable, along with a proven scale. Consequently, there was enough factual departure based on the interpretation of the literature to necessitate an alteration of the identity of the framework, hence the change to the term ‘Reformed Curatorship’.

In terms of the main second order dimensions of ‘erosion’, the literature indicated that erosion as a concept is not well understood and has not received a lot of attention as a concept within the confines of strategic management literature and, surprisingly, very little attention in terms of RBV literature. It is also possible that ‘ambiguity’, a separate second main order dimension, subsumes some of the ‘erosion’ characteristics, but this is merely speculation.

However, recent literature does provide some indication that tangible resources requiring large sunk costs and high maintenance investment provides a positive amplification effect (in terms of firm performance) which negates the erosion effect, provided the assets are operable (Wibbens, 2021:1670). This implies that the value created by an asset cumulatively outweighs the bad practices or dearth of

maintenance, provided the asset at least operates at some level above the minimum threshold of operability.

As for the second order dimension, ‘ambiguity’, the indication was there that it would have a larger effect than both ‘erosion’ and ‘misalignment’, but that its third order dimensions (‘resource ambivalence’, ‘causal ambiguity’ and ‘tacitness’) on their own did not portray the same picture. This initially ambivalent finding was explained after the exploratory factor analysis, where it transpired that ambiguity could not be subdivided into constructs – or at least, the main construct subsumed the smaller constructs.

In terms of ‘misalignment’, the two third order dimensions proved to be the most accurate in terms of the literature, and although it barely failed to meet the required statistical thresholds in the regression analysis and PLS-SEM to show explanatory power, more scale items and a larger sample might have led to a different outcome.

It should be noted that the review strategy of the literature was narrow, aggressive and critical in nature. However, the criticism levelled against the original Curatorship framework was done so purely on an academic level, and not against the authors of the Curatorship framework. Le Breton-Miller and Miller (2015) are lauded for their innovative approach to the resource-based view, along with their systematic process of deriving propositions, which provided a robust, researchable structure from whence to conduct explanatory research. An example of the innovative nature of Le Breton-Miller and Miller’s (2015) approach, is that they did not segment resources and capabilities, but approached it as the same ‘thing’ – this might seem counter-intuitive from a scientific or scholarly viewpoint, but from a practical managerial perspective, it allows for a lot of utility.

The aggressive critical nature of the literature review, however, translated directly into the scale items, which led to several significant findings, broadly validating the approach of Le Breton-Miller and Miller (2015).

In order to prevent the same ‘compounding of errors’ effect, it was decided only to test the ‘challenges’ part of the framework. Any changes in the ‘challenges’ part of the model will necessitate changes in the ‘preventative’ part of the model. Also, no scale exists for this framework, and a new scale had to be

developed. Scale items were carefully derived from the literature, and in total 38 scale items were created for the ‘challenges’ part alone. A much larger number of scale items would have impacted negatively on the pragmatic collection of data.

5.2.2 Findings from data analysis

Although the data collection process preceded the analysis phase, some findings had a direct impact on the data analysis. Firstly, although it was argued in Chapter 1 and Chapter 3 that the population was well-defined, it transpired that this was not the case. More than 3000 wine-producing entities were listed as the population, as well as a sampling frame. For this study, this turned out to be an enthusiastic overestimation of the population. In Chapter 4, an argument was made that for similar research, the population, or at least the sampling frame, consist of approximately 600 wine-producing entities. This had a direct implication in the overestimation of the sample size prior to the data collection phase.

Secondly, the COVID-19 pandemic detracted from speedy data collection, which in turn affected the cross-sectional nature of the data collection. Although the response rate of approximately 20% seems high, a time-consuming process had to be followed to collect the data. In addition to the time expended, an elaborate informal database had to be drawn up, and approximately 4000 individual phone calls were made to respondents to ask them if they would be willing to participate in the survey.

Thirdly, the South African wine industry, as it turns out, is a prime target for postgraduate research. Due to the multi-disciplinary nature of the industry, postgraduate students from disciplines apart from viticulture (such as management, marketing, engineering and logistics, to name a few) seem to find the wine industry attractive for research. As a result, the respondents were despondent when asked to fill in an online questionnaire. This ‘research fatigue’ markedly influenced the inability to obtain a large sample size.

Fourthly, the units of observation (winemakers, cellar masters, or owners of wine estates) proved to be respondents of a high calibre. All 104 questionnaires were useful, no unengaged responses had to be discarded and, due to the automated function of the online survey, there were no missing values.

Fifthly, the respondents commented on the ‘strangeness’ of the terms used in the scale instrument and could not really derive any immediate value from completing the survey. Although the basic premise of the study was explained on the landing page of the online survey, approximately 170 respondents did not venture beyond the second question in the survey. This is a pity, as a sample size of almost 300 would have made an immense difference in the data analysis as well as the generalisability of the results. However, there is no manner in which the questions could have been posed in a more understandable manner without sacrificing the scientific meaning behind certain concepts, or without introducing ambiguity in the scale items.

In terms of the data analysis, the constructs pertaining to ‘intangible delicateness’ [ER.ID] seemed problematic. The theory should be revisited, along with the phrasing of the scale items. Within the construct of ‘erosion’ it seemed as if some variability could be introduced into the constructs of [ER.VIA], [ER.VIS] and [ER.ID] – a number of scale items were removed, as their measurement was subsumed by other scale items. This led to reliability and explanatory issues later on in the analysis process. A possible reason for this was that two important theoretical facets, board oversight and hubris, were not included in the measurement during the scale design (see Chapter 3, Section 3.5.7.1). These two facets were discarded with good reason, and it is uncertain if their inclusion would have made a difference. However, the dearth of research related to erosion might be the largest contributing factor to this second-order main dimension not having any explanatory or predictive association with firm performance.

The construct of ‘misalignment’ and the associated sub-constructs, [MA.CD] and [MA.SC], from a scale assessment perspective, fitted perfectly as predicted by the theory. However, two sub-constructs posed problems with reliability, and it is suggested that a third sub-construct should be derived theoretically and incorporated into the scale, or more scale items should be incorporated within the two established third-order dimensions.

For the sample of the study, it was found that the mean responses indicated a prevalence of resource erosion slightly below the midpoint of the scale, and firm performance slightly above the midpoint of the scale. From the South African wine industry’s point of view, this is contextually significant,

considering that the industry underwent a brutal period due to the Covid-19 lockdown periods, directly impacting sales.

The sample was split into two binomial groups. The first group difference analysis related to size (wine producers with more than 100ha under vine versus those with less than 100ha under vine), and very little could be derived from this comparison, as the split was extremely lopsided. The second group difference analysis concerned area ('traditional' wine-producing areas versus areas outside this 'traditional') area. The split was close to being equiponderant, and although it seemed as if firm performance were slightly higher in the 'traditional' winelands, so was misalignment brought on by systematic complexity of capabilities. However, these observations were not found to be of statistical significance and should be interpreted as such.

The most valuable finding from the data analysis were the correlations between constructs. All second order dimensions correlated significantly and negatively with the dependent variable as predicted, albeit moderately as opposed to strongly (as predicted by the theory). Two first order dimensions, [ER.VIA] and [MA.SC], did not correlate significantly with [FP], but [ER.VIS] and [MA.CD] showed moderate, negative and significant correlation. The correlation analysis also validated the decision to remove [ER.ID]. This correlation analysis, to a large extent, validated the theoretical structure on which Reformed Curatorship is based.

A regression analysis was conducted to see if there were any explanatory or predictive relationships between the independent variables and the dependent variable. It was found that only 'ambiguity' could explain 17.2% of variance in 'firm performance', and its unique statistically significant contribution was calculated to be -.304.

In parallel to the regression analysis, PLS-SEM was used, and the variables bootstrapped to 5 000 cases. From this, an almost identical result was obtained – 'ambiguity' could explain 18.9% of variance in 'firm performance' and its unique statistically significant contribution was calculated to be -.308.

Although the regression analysis and PLS-SEM did not find 'misalignment' to be statistically significant, the results did appear promising, or at least aligned with theoretical predictions. This was not the case with 'erosion'.

The two exogenous variables, ('size' and 'area') marked for moderation were subjected to analysis and found to harbour no statistical significance in terms of acting as moderating variables with any of the independent variables. This is remarkable, as 'size' and 'area' appear in literature relating to wine-producing entities quite often.

Null hypotheses could be accepted or rejected. Eight null hypotheses were accepted, and six were rejected.

Ultimately, the analysis of data contributed greatly to a better understanding of how a theoretical framework manifested as a model, within a specific industry. From a correlation relationship a large part of the model behaved in a way as predicted theoretically. From a prediction or explanatory point of view, it might appear that the model was overly reduced. However, this specific contribution is actionable to some extent. Given a larger sample, sampling frame and population, there should be less difference between the correlation relationship model and the explanatory, more actionable model.

5.3 Limitations of research

Although an argument is made that the model of Reformed Curatorship is validated to some extent, certain limitations should be noted.

Firstly, from a research methodology point of view, the sample size was lower than foreseen. Although repeated tests in Chapter 4 indicated that it crossed all thresholds, along with a small population, a larger sample of 300 or 400 could have resulted in the ultimate results being more generalisable.

Secondly, the nature of the research directly affects any actionable recommendations. Although the research design was denoted as 'explanatory', it still has an exploratory element to it which limits predictive power of the Reformed Curatorship model. Although a large part of Reformed Curatorship was validated in terms of correlation, the explanatory or predictive part resulted in an overly reduced model, only focusing on ambiguity. Again, this impacts on generatability and immediate utility of Reformed Curatorship in its current state.

Thirdly, as the data collection was done during two operational cycles of the wine industry, of which one cycle was marred by the COVID-19 pandemic and destruction of value during this time, the argument relating to the cross-sectional nature of the study is being brought into question. This has direct implications on certain assumptions during the analysis phase, which further impacts on the generalisability of the results of the study.

The fourth limitation is that only half of Reformed Curatorship was quantitatively tested. Some constructs such as ‘erosion’ should be reworked, and ‘misalignment’ requires some expansion. This should then be subjected to an explanatory study with a larger sample, after which the ‘prevention’ part of the model should be subjected to exploratory and explanatory analysis, with a large sample.

5.4 Conclusions

The purpose of this section is to link the findings to the research purpose and research objectives.

In Chapter 1, the research purpose was defined as follows:

The purpose of the proposed research is to scientifically and methodically determine to what degree (or if at all) Reformed Curatorship is relevant to resource vulnerability determination in the South African wine industry.

The research purpose was then segmented into the following research objectives:

- *To articulate and explain which elements constitute Reformed Curatorship.* This was done in Chapter 2, and in large part validated in Chapter 4.
- *To develop the concept into a framework by means of a scientifically and methodically derived instrument.* This was achieved in Chapter 3 by incrementally and methodically creating a scale, and subjected to analysis in Chapter 4, which proved that a large part of the scale was reliable. As the correlations indicated the predicted relationships, the scale also proved valid with some caveats.
- *To perform rigorous pilot testing of these constructs, before the actual data collection, in order to perform questionnaire validation.* The rigorous pilot testing was not done due to pragmatic

reasons, but the scale was subjected to external testing prior to dissemination thereof during the data collection phase, and the scale as a whole was calibrated seven times with the help of a statistician.

- *To scientifically and methodically determine the correlation between the presence of these elements amongst the units of analysis.* This was achieved in Chapter 4, although the mere completion of 104 questionnaires could act as evidence of achievement of this objective.
- *To scientifically determine the relationship between the constructs from the data collected.* This was achieved in Chapter 4, during the correlation analysis.

All of the research objectives were reached, and as a consequence, the research purpose fulfilled. However, the foreseen method of pilot testing of the scale instrument was not possible due to the difficulty in obtaining responses. Consequently, this study served a purpose of being an elaborate pilot test for a new scale, providing a solid foundation of scale betterment for Reformed Curatorship.

5.5 Significance of research

5.5.1 Contribution to literature

The contribution to literature within the realm of strategic management, and in particular the resource-based view, is that Curatorship (and by implication Reformed Curatorship) provides a fresh utilitarian, transdisciplinary perspective. Chapter 2 indicated that the resource-based view suffers from criticism that it merely describes already-existing elements. However, this research does support resource-based view logic, as the prevalence of resource erosion (and all second order dimensions, erosion, ambiguity and misalignment) correlates negatively, and moderately with firm performance in a statistically significant manner.

Furthermore, the non-segmentation of resources and capabilities is quite novel, and although this is somewhat contrary to resource-based view literature, it provides a number of potential actionable recommendations. This stems from the fact that few managers or supervisors can align, bundle, preserve or employ resources in their segmented categories, let alone without taking into account capabilities.

Therefore, this research indicates that a model, where resources and capabilities are viewed as one ‘thing’, still conforms to the proven tenets of resource-based view logic.

The construct of ‘erosion’ manifested contrary to theoretical expectations. Although musings are offered as to probable reasons for this in Section 5.6, it should be noted that ‘erosion’ as a concept within RBV should be handled with care and approached with some caution.

In this study, ambiguity proved to be the salient detractor of firm performance, with a predictive and explanatory power to boot – this is a well-reported phenomenon within the realm of resource-based view literature. However, the novel contribution from this research is that ambiguity could not be sub-divided into sub-constructs, despite very careful and incremental theoretical considerations. No literature could be found where this characteristic was reported.

The leading contribution to literature, however, would be the theoretical filtering of the original Le Breton-Miller and Miller Curatorship framework, leading to the Reformed Curatorship framework. It should be noted the Reformed Curatorship is not a revolutionary progression from Curatorship, but rather a well-considered, incremental *evolutionary* progression thereof. In addition, Reformed Curatorship allows for further evolution, especially concerning different industries and the theoretical re-working of the ‘erosion’ second order dimension.

5.5.2 Contribution [to] and recommendations for researchers in this discipline and industry.

The two most gruelling undertakings of this research was the scale development and the data collection.

In terms of scale development, no ‘paint-by-numbers’ source could be found to aid scale construction. However, a 34-point, step-by-step framework for scale design was constructed to aid the researcher in constructing a scale. For future researchers in the field of managerial sciences, this should save a lot of time and effort when attempting to create a scale. Furthermore, it will aid researchers in evaluating existing scales quickly and on face value, prior to subjecting it to analysis. This 34-point scale design framework will be useful within the managerial sciences where specific, tailor-made scales are sought to measure perceptions relating to very specific constructs. Although the incremental method used to create the scale design framework is not novel, the way in which this scale design framework was

packaged, and how the sources are triangulated and articulated within the framework, makes it a research tool with great utility and potential within the managerial sciences.

In terms of data collection, the actual population or sampling frame of the South African wine industry, when conducting research within the managerial sciences, is much lower than what seems like a well-defined population. Instead of 3000 wine-producing entities, for the purpose of managerial research, the population seems to be approximately 600. Also, the units of observation were found to be ‘survey-fatigued’ – many disciplines seem to target the South African wine industry for all kinds of research, on many different levels. Respondents are difficult to get hold of, the sampling frame is deceptively small and, although very few respondents acted aggressively and despondently during survey solicitation, a large number just did not respond, despite giving their word that they would.

Relating to data collection methods, an internal database had to be kept in order to keep track of possible respondents and to follow up on promises of completing the survey. Individual calls were made to individual respondents – an extremely time-consuming activity, and although a fairly high response rate was reached, it still took approximately 4000 calls to garner 104 responses over a period of two years.

Future researchers would be well advised to take these facets of research into account prior to conducting research within the wine industry, regardless of the research discipline, research method or niche theoretical focus.

5.5.3 Contribution to industry

The limits on the generalisability of the results seemingly restrain concrete contributions to the South African wine industry. However, the predictive, negative effect of ambiguity on firm performance, is of great value. Of greater import is that ambiguity (or rather the potential to curb it) is within the control of the wine producer.

By curbing ambiguity within the various parts of the wine estate, a predicted rise in firm performance will result. Specifically relating to ambiguity, the following recommendations, derived from the scale items retained for the construct of ‘ambiguity’ would serve a wine producer well. Where possible, pragmatic examples are provided in italics:

- Employees should be prevented from creating value in one part of the firm, and then using it as a justification to cause damage somewhere else in the firm. *An excellent harvester should not use his or her above-average skill as harvester as license to disregard occupational health and safety procedures in the cellar.*
- If employees feel undervalued for a prolonged period of time, they will leave. *Constant positive reinforcement should be employed by all line managers or supervisors.*
- Evaluations of employee performance are perceived to be inaccurate by the employees themselves. *The performance process should be simple, fair, with some input by the employee.*
- Transfer of information within the firm should not be difficult, nor should the transfer of capabilities be ponderous. *This can be achieved with a codification of processes, even in rudimentary or graphic form.*
- All crucial and critical processes should be standardised and codified. *This can be achieved with a codification of processes, even in rudimentary or graphic form.*
- All onboarding and training should be codified, simplified and done often.
- New employees and junior employees should informally be evaluated to confirm the effectiveness of knowledge and skills.
- A general ‘feeling’ or culture of ambiguity should be avoided, and it should never be celebrated.
- Communication between different parts of the wine producer should be simple, understandable and not prone to misunderstandings.

A nurturing managerial approach in terms of resources and capabilities does not create a zero-sum game. Instead, it leads to more robustness, resilience and greater firm performance. This phenomenon is not self-evident, and probably the greatest low-resolution contribution to the industry from the research conducted.

5.6 Suggestions for future research

Of immediate interest, is the ‘curatorship’ or nurturing approach central to the research conducted. The USA is currently undergoing a period of simultaneous resignations, called ‘the Big Quit’ or the ‘Great Resignation’. Some studies have indicated that employees leave because they feel ‘used up’ by their

firm. Nurturing resources and capabilities as the primary approach for low-level of mid-level management is hereby suggested for future research.

The phenomenon that ambiguity cannot be segmented into sub-constructs yields a lot of questions, and no prior research could be found which explains this phenomenon discovered in this study. Within the realm of strategic management, one will find the concept of causal ambiguity, which is celebrated and serves as an isolating mechanism from imitation. But ambiguity in its simple, pure form is directly linked to a decrease in firm performance.

The positivistic and objectivistic nature of strategic management research opens up opportunities where other disciplines which exhibit the same ontology and epistemology could be superimposed upon certain research issues faced by the managerial sciences. This research would not have been possible without the bold, innovative and transdisciplinary step taken by Le Breton-Miller and Miller (2015).

The construct of ‘erosion’ proved to be problematic during the data analysis. The fact that the construct or ‘erosion’ did manifest as theoretically predicted, could mean that it is subsumed by the construct ‘ambiguity’, or it is theoretically unsound, or a combination of the two possibilities. Alternatively, it might be that the semantics of the actual term is incompatible with the phenomenon, or that that the term is by its very nature scientifically vague or open to interpretation. One antonym of ‘erosion’ is ‘accretion’ – and there does not seem to be reference within strategic management to ‘resource accretion’ or ‘resource accrual’ within the same context as ‘resource erosion’. A possibility might be that a term such as ‘dissolution’ might be a more accurate concept, with ‘restraint’ as its antonym. Nevertheless, further research should be conducted relating to the construct in its entirety. This is supported by findings in the literature (see Chapter 2, Section 2.4.1).

Reformed Curatorship, at its core, advocates a nurturing managerial approach. However, the inherent downside to this approach, by implication similar approaches advocated within the various strategic management schools of thought, is not well-understood (see Chapter 2, Section 2.6.2).

In terms of a low-resolution suggestion for future research within the broader discipline of strategic management, linkages with novel schools of thought within strategic management should be sought. ‘Inheritance theory’ seems to be a good candidate, where cessation of bad activities is viewed as

innovation and value creation – a facet explicitly advocated by Reformed Curatorship. Vermeulen (2017:1620) eloquently states:

“Paradoxically, this may also offer a new avenue to study the creation of competitive advantage, namely through the identification and elimination of practices that do not or that no longer enhance firm fitness and performance, but which may nevertheless be practiced abundantly in the firm’s industry[...][I]nheritance theory suggests that innovative ways to create value may come from the identification and cessation of bad practices, rather than just from the development of new ones.”

5.7 Concluding remarks

This chapter reiterated salient findings from the literature review, followed by a re-articulation of findings from the data analysis, with special emphasis on the data collection phase. Limitations of the research results were stated, and it was established that the biggest limitation relates to the generalisability of the results. In terms of conclusions, it was shown the research objectives were all achieved, and thus, by implication, the research purpose.

The significance of the research was shown by articulating contributions to the literature, future researchers and industry. Specifically, recommendations were codified for wine producers in terms of curbing ambiguity.

Ultimately, this research involved the theoretical augmentation of an innovative approach to an established school of thought within strategic management, followed by scale construction, data collection, scale assessment, data analysis and contextualising results. Although the final model of Reformed Curatorship might be somewhat different from theoretically envisaged, the main constructs correlated as predicted. In a world where complexity and ambiguity seem to detract from performance, a utilitarian approach was found in Reformed Curatorship which advocates for a nurturing managerial approach. This study sought to operationalise a theoretical framework for this ‘managerial nurturing’ to manifest in reality.

In Chapter 1, the following quote was used to indicate that the (then) intended direction of the research would veer away from purely theoretical summations, but rather subject the intended research to the harsh reality of scientific analysis:

“...the analytical character of thought has a far-reaching effect in obscuring the nature of reality, which has to be carefully guarded against.” (Smuts, 1926:19).

This research commenced with a search for a novel, theoretically sound approach, simple to understand and pragmatic enough to implement. The Curatorship framework was considered to be an imaginative approach and was subjected to an aggressive and critical review. It was augmented accordingly, and a scale instrument was developed. The South African wine industry became a multi-industry vessel which this scale was subjected to and analysed accordingly. The scale proved reliable and valid to a large extent. Ultimately, this study established Reformed Curatorship as a strategic approach to resource vulnerability reduction in the South African wine industry.

LIST OF REFERENCES

- Acedo, F.J., Barroso, C. and Galan, J.L. 2006. The Resource-Based Theory: Dissemination and Main Trends, *Strategic Management Journal*, 27(7): 621-636.
- Alexy, O., West, J., Klapper, H. and Reitzig, M. 2018. ‘Surrendering control to gain advantage: Reconciling openness and the resource-based view of the firm’, *Strategic Management Journal* 39(6): 1704–1727, viewed 2 January 2022, <<https://search.ebscohost.com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=129529704&site=ehost-live&scope=site>>.
- Alvemar, H. 2015. *A resource-based view of productivity, firm growth and technical management tools: a case study of Swedish large-scale farms*. Second cycle, A2E. Uppsala: Dept. of Economics. <https://stud.epsilon.slu.se/8290/11/Alvemar_H_150702.pdf>
- Andersen, J., Jansson, C. and Ljungkvist, T. 2016. Resource immobility and sustained performance: A systematic assessment of how immobility has been considered in empirical resource-based studies, *International Journal of Management Reviews*, 18(4): 371-396.
- Arora, A., Gitelman, M., Kaplan, S., Lynch, J., Mitchell, W. and Siggelkow, N. 2016. Question-based innovation in strategy research methodology, *Strategic Management Journal*, 37(1): 3-9.
- Arthur, W. 1989. Competing technologies, increasing returns and lock-ins by historical events, *Economic Journal*, 99(394): 116–131.
- Babbie, E. 2008. *The basics of social research*, 4th Ed, Belmont: Thomson Higher Education.
- Bain, J. S. 1956. *Barriers to New Competition*. Cambridge, MA: Harvard University Press.
- Barnett, W. P., Greve, H. R. and Park, D. Y. 1994. An evolutionary model of organizational performance. *Strategic Management Journal*. 15 (Winter Special Issue), 11–28.

Barney, J.B., Arikan, A.M. 2006. 'The Resource-based View: Origins and Implications', in Hitt, A, Edward Freeman, R., and Harrison, J.S. (eds.) *The Blackwell Handbook of Strategic Management*, Oxford: Blackwell Publishing Limited, pp. 123-182.

Barney, J. B. and Wright, P. 1998. On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*. **37**, 31–46.

Barney, J. 1991. Firm resources and sustained competitive advantage, *Journal of Management* **17**(1): 99–120.

Barney, J. B., 1986a. Strategic factor markets: Expectations, luck and business strategy, *Management Science*, **32**:1512–14.

Barry, A.E., Chaney, E.H., Stellefson, M.L. and Chaney, J.D. 2011. So you want to develop a survey: Practical recommendations for scale development, *American Journal of Health Studies* **26**(2): 97-105.

Barthélemy, J. 2017. The impact of technical consultants on the quality of their clients' products: Evidence from the Bordeaux wine industry, *Strategic Management Journal*, **38**(5): 1174–1190.

Beer, H. A. and Micheli, P. 2018. Advancing Performance Measurement Theory by Focusing on Subjects: Lessons from the Measurement of Social Value, *International Journal of Management Reviews*, **20**: 755–771.

Black, J. and Boal, K. 1994. Strategic resources: traits, configurations and paths to sustainable advantage, *Strategic Management Journal*, **15**(S2): 131–148.

Blumberg, B., Cooper, D. and Schindler, P, 2008, *Business Research Methods*, 2nd European ed, McGraw-Hill Education: Berkshire.

Brown, S. and Eisenhardt, K, 1998. *Competing on the edge: Strategy as structured chaos*, Harvard Business School Press: Harvard.

Brush, T. H. and Bromiley, P. 1997. What does a small corporate effect mean? A variance components simulation of corporate and business effects. *Strategic Management Journal*. **18**, 325–35.

Coff, R.W. 1999. When competitive advantage doesn't lead to performance: the resource-based view and stakeholder bargaining power, *Organization Science*, **10**(2): 119–133.

Connor, K. 1991, A historical comparison of resource-based theory and five schools of thought within industrial organisation economics: Do we have a new theory of the firm? *Journal of Management*, 17(1):121-154.

Combs, J.G., Ketchen, D.J. Jr., Ireland, R.D. and Webb, J.W. 2011. The role of resource flexibility in leveraging strategic resources, *Journal of Management Studies* **48**(5): 1098–1125.

Connaught Economists, *Macro-economic impact study of the South African wine industry*. 2015. http://www.sawis.co.za/info/download/Macro-economic_impact_study_-_Final_Report_Version_4_30Jan2015.pdf [Accessed on 12 November 2015].

Connelly, B., Tihanyi, L., Ketchen, D., Carnes, C. and Ferrier, W. 2017. Competitive repertoire complexity: Governance antecedents and performance outcomes, *Strategic Management Journal*, **238**(5): 1151-1173.

Delaney, J.T., Huselid, M.A. 1996. The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal* **39**(4): 949–969.

Demsetz, H. 1973. Industry Structure, Market Rivalry, and Public Policy. *Journal of Law and Economics*. **16**, 1–9.

DeVellis, R.F. 2003, *Scale development: Theory and applications*, 2nd Ed, Thousand Oaks: Sage Publications.

Diamantopoulos, A. and Schlegelmich, B. 2000. *Taking the fear out of Data Analysis*. Hampshire: Cengage Learning EMEA.

Dierickx, I. and Cool, K. 1989. Asset stock accumulation and sustainability of competitive advantage, *Management Science* **35**(12): 1504–1511.

Drouin, J., Hediger, V., and Henke, N. 2008. Health care costs: a market-based view. *McKinsey Quarterly*.

Durand, R., Grant, R. and Madsen, T. 2017. The expanding domain of strategic management research and the quest for integration, *Strategic Management Journal*, **38**(1): 4-16.

Ewert, J., Hanf, J., and Schweickert, E., 2015. Strategic challenges facing South African wine cooperatives: upgrading or bulk production?, *Journal of Wine Research*, 26(4):287-303.

Fasaei, H., Tempelaar, M.P. and Jansen, J.J.P. 2017. Firm reputation and investment decisions: The contingency role of securities analysts' recommendations, *Long Range Planning*, <<http://dx.doi.org/10.1016/j.lrp.2017.07.010>>.

Field, A. 2009, *Discovering statistics using SPSS*, 2nd ed., London: SAGE Publishing Ltd.

Finweek. 2015. *Uncorking potential: SA wine industry geared for growth*. 28 November, 24-29.

Fiol, C.M. 1991. Managing culture as competitive advantage. *Journal of Management* **17**(1): 191–211.

Frazier, P.A., Tix, A.P. and Barron, K.E. 2004. Testing Moderator and Mediator Effects in Counseling Psychology, *Journal of Counseling Psychology*, **51**(1):115-134.

Freedman, D.A. 2009. *Statistical models: Theory and Practice*, Revised ed. New York: Cambridge University Press.

Ghemawat, P. 1999. *Strategy and the business landscape: Texts and cases*, Harvard Business School Publishing: Boston.

Gillespie, N. and Dietz, G. 2009. Trust repair after organization-level failure. *Academy of Management Review*, **34**(1): 127–145.

- Grant, R. 2010. *Contemporary strategy analysis*, 7th ed. West Sussex: John Wiley & Sons Ltd.
- Gomez, J., Orcos, R. and Palomas, S. 2016. Competitors' Strategic Heterogeneity and Firm Performance, *Long Range Planning*, **49**:145-163.
- Gordon, R.A., and Howell, J.E. 1959. *Higher Education for Business*, New York: Columbia University Press.
- Hair, J., Black, W., Babin, B. and Anderson, R. 2019. *Multivariate data analysis*, 8th ed., Hampshire: Cengage Learning EMEA.
- Hall, R. 1992. The strategic analysis of intangible resources. *Strategic Management Journal*. **13**(2), 35–144.
- Hall, R. 1993. A framework linking intangible resources and capabilities to sustainable competitive advantage. *Strategic Management Journal*. **14**(8), 607–18.
- Hamel, G. and Prahalad, C.K. 1990. The core competence of the Corporation, *Harvard Business Review*, 68(3), 79-91.
- Harwell, M. and Gatti, G. (2001). Rescaling Ordinal Data to Interval Data in Educational Research. *Review of Educational Research*, **71**(1), 105-131.
- Hayward, M. and Hambrick, D. 1997. Explaining the premiums paid for large acquisitions. *Administrative Science Quarterly*, **42**(1): 103–127.
- Henderson, R. and Cockburn, I. 1994. Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal*. **15**, 63–84.
- Helfat, C. and Peteraf, M. 1997. The dynamic resource-based view: capability life cycles. *Strategic Management Journal*, **24**(5): 987–1010.
- Hofstee, E. 2006. Constructing a good dissertation: A practical guide to finishing a Master's, MBA or PhD on Schedule, Johannesburg: EPE.

Holcomb, T.R., Holmes, R.M. Jr. and Connelly, B.L. 2009. Making the most of what you have: managerial ability as a source of resource value creation, *Strategic Management Journal*, **30**(5): 457–485.

Hox, J.J. and Bechger, T.M. 1999. An Introduction to Structural Equation Modeling, *Family Science Review*, Issue 11, 354-373.

IBM SPSS Statistics, n.d., <<https://www.ibm.com/docs/el/spss-statistics/SaaS?topic=summarize-statistics>> [Accessed 25 October 2021].

Jalonen, K., Schildt, H. and Vaara, E. 2018, ‘Strategic concepts as micro-level tools in strategic sensemaking’, *Strategic Management Journal* 39(10): 2794–2826, viewed 2 January 2022, <<https://search-ebSCOhost-com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=131839178&site=ehost-live&scope=site>>.

Joseph, J. and Wilson A.J. 2017. The growth of the firm: An attention-based view, *Strategic Management Journal*, **39**:1779–1800.

Kauppila, O.P. 2015. Alliance Management Capability and Firm Performance: Using Resource-based Theory to Look Inside the Process Black Box, *Long Range Planning*, **48**:151-167.

King, A. 2007. Disentangling interfirm and intrafirm causal ambiguity. *Academy of Management Review*, **32**(1): 156–178.

King, A. and Zeithaml, C. 2001. Competences and firm performance. *Strategic Management Journal*, **22**(1): 75–99.

Kline, R. 2011. *Principles and practice of structured equation modelling*, 3rd ed, New York: The Guildford Press.

Kogut, B. and Zander, U. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, **3**(3): 383–397.

- Kotlar, J., De Massis, A., Wright, M. and Frattini, F. 2018. Organizational Goals: Antecedents, Formation Processes and Implications for Firm Behavior and Performance, *International Journal of Management Reviews*, **20**: S3-S18.
- Laverty, K. 1996. Economic short-termism. *Academy of Management Review*, **21**(3): 825–860.
- Le Breton-Miller, I. and Miller, D. 2015. The paradox of resource vulnerability: Considerations for organizational curatorship, *Strategic Management Journal*, **36**(3): 397-415
- Leedy, P.D. and Ormrod, J.E. 2010. *Practical Research: Planning and Design*. 9th Ed. New Jersey: Pearson Education Ltd.
- Levitt, B. and March, J. 1988. Organizational learning. *Annual Review of Sociology*, **14**: 319–340.
- Lieberman, M.B. 1982. The learning curve, pricing and market structure in the chemical processing industries. Unpublished doctoral dissertation, Harvard University.
- Lieberman, M.B. 1987. The learning curve, diffusion, and competitive strategy. *Strategic Management Journal*. **8**, 441–52.
- Lu, Y., Zhou, L., Bruton, G. and Li, W. 2010. Capabilities as a mediator linking resources and the international performance of entrepreneurial firms in an emerging economy. *Journal of International Business Studies*, **41**(3): 419-436
- Makhija, M., 2003. Comparing the resource-based and market-based views of the firm: empirical evidence from Czech privatization, *Strategic Management Journal*, **24**(5), 433–451.
- Malmendier, U. and Tate, G. 2009. Superstar CEOs. *Quarterly Journal of Economics*, **124**(4): 1593-1638.
- Mansfield, E., Schwartz, M. and Wagner, S. 1981. Imitation costs and patents: An empirical study. *Economic Journal*. **91**, 907–18.

- Mauri, A. J. and Michaels, M. P. 1998. Firm and industry effects within strategic management: An empirical examination. *Strategic Management Journal*. **19**(3), 211–19.
- McGahan, A.M. and Porter, M.E. 1997. How much does industry matter, really? *Strategic Management Journal*. **18** (Special Issue, Summer): 15–30.
- McGee, J. 2015. Market-Based View. Wiley Encyclopedia of Management. 12:1. DOI: 10.1002/9781118785317.weom120075 [Accessed 10 October 2016].
- Miller, D. 1993. The architecture of simplicity. *Academy of Management Review*. **18**(1): 116-138.
- Miller, D. and Toulouse, J-M. 1998. Quasi-rational organizational responses: Functional and cognitive sources of strategic simplicity. *Revue Canadienne des Sciences de l'Administration*. **15**(3): 230–44.
- Miller D. 2003. An asymmetry based view of advantage, *Strategic Management Journal*, **24**(4): 961–976.
- Mintzberg, H., Ahlstrand, B. and Lampel, J. 2012. *Strategy Safari*. 2nd ed. Harlow: Pearson Education Ltd.
- Morkel, A., Nienaber, H. and McNeill, R., 2021. Time for change: Tools enhancing competitive advantage in the wine business, *Journal for Global Trade and Technology*, **17**(2):20-40.
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: A South African guide and resource book*, Pretoria: Van Schaik Publishers.
- Näslund, B. 1964. Organizational Slack, *Ekonomisk Tidskrift*, **66**(1):26-31.
- Naudé, R.T. and Badenhorst-Weiss, J.A., 2020. The challenges behind producing a bottle of wine: Supply chain risks', *Journal of Transport and Supply Chain Management*, **14**(0):1-15.
- Nerur, S., Rasheed, A. and Pandey, A. 2016. Citation footprints in the sands of time: An analysis of idea migrations in strategic management. *Strategic Management Journal*, **37**(6): 1065-1084

Newbert, S.L. 2008. Value, rareness, competitive advantage, and performance: a conceptual-level empirical investigation of the resource-based view of the firm, *Strategic Management Journal*, **29**: 745–768.

Pallant, J. 2016. *SPSS Survival Manual: a step-by-step guide to data analysis using IBM SPSS*, 6th ed., Berkshire: McGraw-Hill Education.

Penrose, E.T. 1959. *The Theory of the Growth of the Firm*, New York: Wiley

Pierson, F.C. 1959. *The Education of American Businessmen: A Study of University College Programs in Business Administration*, New York: McGraw-Hill.

Pisano, G. P. 1994. Knowledge, integration, and the locus of learning: An empirical analysis of process development. *Strategic Management Journal*. **15** (Winter Special Issue): 85–100.

Platter's 2019 South African Wine Guide, 2018, John Platter SA Wine Guide (Pty) Ltd: Hermanus

Platters by Diner's Club South African Guide [online], 2021, <<https://www.wineonaplatter.com/>> [Accessed 20 October 2021]

Poppo, L. and Zenger, T. 1995. Opportunism, routines, and boundary choices: A comparative test of transaction cost and resource-based explanations for make-or-buy decisions. *Academy of Management Journal*. **38**(1): 42–6.

Porter, M. 1985. *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.

Porter, M. 1996. What is strategy? *Harvard Business Review* **74**(6): 61–78.

Powell, T.C. 1992a. Organizational alignment as competitive advantage. *Strategic Management Journal* **13**(2): 113–134.

PriceWaterhouseCoopers, *SA Wine Industry Insights Survey 2015*. <<http://www.pwc.co.za/wine-insights-survey>>. [Accessed 30 November 2015]

Priem, R.L. and Butler, J.E. 2001a. Is the resource-based view a useful perspective for strategic management research? *Academy of Management Review* **26**(1): 22–40.

Pringle, J. W. S. 1951, On the Parallel Between Learning and Evolution, *Behavior*, 3:175-215.

Rahmandad, H. and Repenning, N. 2016. ‘Capability erosion dynamics’, *Strategic Management Journal*, 37(4):649–672, viewed 3 January 2022, <<https://search-ebSCOhost-com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=113465788&site=ehost-live&scope=site>>.

Reed, R. and DeFillippi, R.J. 1990. Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review* **15**(1): 88–102.

Ringov, D. 2017. Dynamic capabilities and firm performance, *Long Range Planning*, **50**: 653-664.

Rumelt, R. 1991. How much does industry matter? *Strategic Management Journal*. **12**: 167–85.

Saunders, M., Lewis, P. and Thornhill, A, 2012. *Research methods for business students*, 6th ed. Essex: Pearson Education Limited.

SAWIS (South African Wine Industry Information and Systems) 2016. *2016 SA Wine Industry Statistics No 40*, < http://www.sawis.co.za/info/download/Book_2016_engels_final_web.pdf> [Accessed 30 August 2016].

SAWIS (South African Wine Industry Information and Systems) 2021. *2020 SA Wine Industry Statistics No 45*, < http://www.sawis.co.za/info/download/Book_2020_Final_final.pdf> [Accessed 30 December 2021].

Scherer, F. M., 1980, *Industrial Market Structure and Economic Performance*, Boston: Houghton Mifflin.

Selznick, P. 1957. *Leadership in Administration*. New York: Harper and Row.

Sirmon, D.G., Hitt, M.A. and Ireland, R.D. 2007. Managing firm resources in dynamic environments to create value. *Academy of Management Review*, **32**(1): 273–292.

Smuts, J, 1926 (Reprinted 1987). *Holism and evolution*, N & S Press: Cape Town.

South African Food Review, 2015. *A perspective on the South African wine industry*, p. 1.

Statistics Canada, 2010. *Survey methods and practices*, Ministry of Trade: Ottawa.

Stack, M. and Gartland, M. (2003). Path Creation, Path Dependency, and Alternative Theories of the Firm. *Journal of Economic Issues*, **37**(2): 487.

Stern, I., Deng, X., Chen, G. and Gao, H. 2021, ‘The “butterfly effect” in strategic human capital: Mitigating the endogeneity concern about the relationship between turnover and performance’, *Strategic Management Journal*, 42(13):2493–2510, viewed 3 January 2022, <<https://search-ebscohost-com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=153495576&site=ehost-live&scope=site>>.

Strauch, M., Pidun, U. and Zu Knyphausen-Aufseß, D. 2018. Process matters – How strategic decision-making process characteristics impact capital allocation efficiency, *Long Range Planning*, <<https://doi.org/10.1016/j.lrp.2018.04.003>>: 1-19 (Article accepted and published online – publication space not yet allocated by editor).

Thietart, R. 2016. Strategy dynamics: Agency, path dependency and self-organised emergence. *Strategic Management Journal*, **37**(4): 774-792.

Thompson, J., Scott, J. and Martin, F. 2014. *Strategic management: Awareness and change*, 7th ed. Hampshire: Cengage Learning EMEA.

Trading Economics, n.d. <<http://www.tradingeconomics.com/south-africa/military-expenditure-percent-of-gdp-wb-data.html>> [Accessed on 14 November 2015]

UCLA Institute of Digital Research & Education: Statistical Consulting, n.d., *A Practical Introduction to Factor Analysis: Exploratory Factor Analysis*

<<https://stats.idre.ucla.edu/spss/seminars/introduction-to-factor-analysis/a-practical-introduction-to-factor-analysis/>> [Accessed 31 October 2021]

Van der Jagt, R. 2005. Senior business executives see communication and reputation as a crucial part of their leadership role. *Corporate Reputation Review*, **8**(3): 179-186.

Vermeulen, F. 2018, 'A basic theory of inheritance: How bad practice prevails', *Strategic Management Journal*, 39(6):1603–1629, viewed 3 January 2022, <<https://search-ebSCOhost-com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=129529708&site=ehost-live&scope=site>>.

Volkswagen Group Annual Report, 2015

<http://www.volkswagenag.com/content/vwcorp/info_center/en/publications/2016/04/Y_2015_e.bin.html/binarystorageitem/file/Y_2015_e.pdf> [Accessed on 26 October 2016]

Von Hippel, E, 1988. *The Sources of Innovation*, Cambridge: MIT Press.

Wagner, R. K., and Sternberg, R. J., 1985. Practical intelligence in real world pursuits: The role of tacit knowledge. *Journal of Personality and Social Psychology*, **49**, 436-458

Walston, S.L., Burns, L.R. and Kimberly, J.R. 2000. Does reengineering really work? An examination of the context and outcomes of hospital reengineering initiatives. *Health Services Research*. **34**(6), 1363–88.

Weibach, F. (2019). Telephone conversation with Franz Weibach from PWC on 23 May 2019.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2):171–180.

Wibbens, P, 2021. 'The role of competitive amplification in explaining sustained performance heterogeneity' 2021, *Strategic Management Journal*, 42(10):1769–1792, viewed 3 January 2022, <<https://search-ebSCOhost-com.ezproxy.iielearn.ac.za/login.aspx?direct=true&db=bsu&AN=152346411&site=ehost-live&scope=site>>.

Wilden, R., Gudargan, S.P., Nielsen, B.B. and Lings, I. 2013. Dynamic Capabilities and Performance: Strategy, Structure and Environment, *Long Range Planning*, 46: 72-96.

Wilkinson, L. 1999. Statistical Methods in Psychology Journals: Guidelines and Explanations, *American Psychologist*, 54(8):594-604.

Wineland, 2016. *Financial indicators of top performing wine grape producers*, Andries van Zyl & Funzani Sundani, <<https://www.wineland.co.za/financial-indicators-of-top-performing-wine-grape-producers/>> [Accessed May 2019]

Wine.co.za, 2016. *Profit (and Mostly) Loss in SA Wine Production*, Dave March, <<https://news.wine.co.za/news.aspx?NEWSID=28370> [Accessed May 2019]

Wines of South Africa, n.d. <<http://www.wosa.co.za/The-Industry/Statistics/World-Statistics/>> [Accessed on 14 November 2015]

Wines of South Africa, 2021a. *South African Wine Industry Overview 2021*, <<https://www.wosa.co.za/wosadocs/62021/SA%20Wine%20Industry%20Overview%202021.pdf>>

[Accessed on 30 December 2021]

Wines of South Africa, 2021b. *Economic realities facing the SA Wine Industry*, <<https://www.wosa.co.za/wosadocs/42021/Wine%20Industry%20Economic%20Reality%202021.pdf>>

[Accessed on 30 December 2021]

Wright, P.M. and McMahan, G.C. 1992. Alternative theoretical perspectives for strategic human resource management. *Journal of Management*. 18, 295–320.

Wright P.M., McMahan, G.C. and McWilliams, A. 1994. Human resources as a source of sustained competitive advantage. *International Journal of Human Resource, Management*. 5, 299–324.

Zikmund, W., Babin, B., Carr, J. and Griffin, M. 2010, *Business Research Methods*, 8th International ed., Cengage Learning: Canada.

END OF LIST OF REFERENCES

ANNEXURE 1: ETHICAL CLEARANCE CERTIFICATE

Graduate School of Business Leadership, University of South Africa (UNISA) 12008, Johannesburg
City of Johannesburg, Attention: Ethics, Private Mail Bag 1956, Rosebank 2013, Johannesburg
Ethics@unisa.ac.za, Website: www.unisa.ac.za

SCHOOL OF BUSINESS LEADERSHIP RESEARCH ETHICS REVIEW COMMITTEE (GSBL CRERC)

02 July 2019

Ref # : 2019_SBL_DBL_009_FA
Name of applicant: Mr WK
Neuland
Student #: 17441427

Dear Mr Neuland

Decision: Ethics Approval

Student: Mr WK Neuland, wkneuland@yahoo.com, 084 899 1900

Supervisor: Prof P Venter, ventep@unisa.ac.za, 011 652 0235

Project Title: Reformed curatorship as a strategic approach to resource vulnerability reduction in the South African wine Industry.

Qualification: Doctorate in Business Leadership (DBL)

Expiry Date: June 2023

Thank you for applying for research ethics clearance, SBL Research Ethics Review Committee reviewed your application in compliance with the Unisa Policy on Research Ethics.

Outcome of the SBL Research Committee:
Approval is granted for the duration of the Project

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the SBL Research Ethics Review Committee on the 27/06/2019.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
- 2) Any adverse circumstance arising in the undertaking of the research project that is

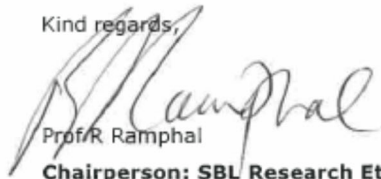
45 Building leaders who go beyond



relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the SBL Research Ethics Review Committee.

- 3) An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.
- 4) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Kind regards,



Prof R Ramphal

Chairperson: SBL Research Ethics Committee

011 - 652 0363 or ramphrr@unisa.ac.za



Prof RT Mpofo

Executive Dean (Acting): Graduate School of Business Leadership

011- 652 0256/mpofurt@unisa.ac.za

ANNEXURE 2: PARTICIPATING WINE PRODUCERS

Wine Producer	Wine Producer	Wine Producer
Accolade Wines SA	Hamilton Russell Vineyards (WM)	Opstal Wines (PTY) Ltd
African Roots Wines Pty Ltd	Haskell Vineyards	Origin Wine Stellenbosch
Akkerdraai Wynkelder	Haut Espoir	Oude Compagnies Post Pty Ltd
Allesverloren Estate Wines	Hidden Valley Wines	Piekenierskloof Wine Company
Alvi's Drift Private Cellar	Hildenbrand wine and Olive estate	Reyneke Wines
Anthonij Rupert Wines	Hoopenburg Wines	Richard Kershaw Wines
Arcangeli Wines	Hout Bay Vineyards	Ridgeback Wines
Arendsig Handcrafted Wines CC	Inyameko Trading 1472	Riebeek Valley Wine Co
Arra wines (pty) ltd	Kanonkop Wine Estate	Rustenberg Wines (Pty) Ltd
Ashton Wynkelder Bpk	Kanu Wines	Seven Springs Vineyard
Babylonstoren	Kay & Monty Vineyards	Simonsig
Backsberg	Keet Wines	Slaley Cellars
Bartho Eksteen Wijnskool	Kirabo	Slanghoek Wynkelder
Beyerskloof	Kusafiri Wines Pty Ltd	Steenberg
Blackwater wine	KWV	StellenRust
Bonnievale Wines	Kyburg Boutique Wines	Strandveld Wines pty ltd
Boplaas Family Vineyards	La Bri	Tanzanite Wines pty Ltd
Bosman Adama (PTY) LTD	Laibach Vineyards	The Fledge & Co. Wines
Botha Kelder	Lateganskop Wynkelder	The Giant Periwinkle Wines
Botrivier Hills Trading (Pty) Ltd T/A Gabrielskloof	Le Belle Rebelle	The Rannoch Trust
Buitenverwachting	Leeuwenkuil Family Vineyards	Theescombe Estate Wine Farm
Cape Rock Wines	Longridge Wine Estate	Truter family wines
Cavalli Wine Estate	LOUISVALE WINES	Van Loveren Vineyards
Croft Sales	Lozarn Wines	Villion Family Wines
DGB (Pty) Ltd	meinert wines	Waterford Estate
Die Mas van Kakamas	Mellasat Vineyards	Waverley Hills Organic Wines
Diemersfontein Wines	MLC Promotions CC t/a The High Road	Windmeul Cellar
Doolhof Wine Estate	Mont Rochelle Hotel and Vineyards	Wines of Cordoba
DRD Investments	Morgenhof Wine Estate	
Durbanville Hills	Mulderbosch Vineyards	
East Ridge Wines Pty Ltd	Muratie	
Ernie Els wines	NAPIER VINEYARDS (PTY) LTD	
Fairview Wines	Neil Ellis Wines	
Franki's vineyards, Franco Afrique Technologies	Newton Johnson Vineyards	
GlenWood Vineyards	Newton Johnson Vineyards	
GOEDE HOOP ESTATE	niel joubert estate	
Graham Beck	Oldenburg Vineyards	
Hamilton Russell Vineyards (O)	Olsen Private Vineyards	

Please Note: To ensure anonymity, the actual data set has been reversed and shuffled.

ANNEXURE 3: ACTUAL SURVEY INSTRUMENT

REFORMED CURATORSHIP AS A STRATEGIC APPROACH TO RESOURCE VULNERABILITY REDUCTION IN THE SOUTH AFRICAN WINE INDUSTRY

Dear Prospective Participant

My name is Wilhelm Neuland, and I am doing research with Prof Peet Venter, a Professor of Strategy in the Graduate School of Business Leadership, towards a Doctor of Business Leadership (DBL) degree at the University of South Africa. We are inviting you to participate in a research project entitled "Reformed Curatorship as a strategic approach to resource vulnerability reduction in the South African wine industry".

WHAT IS THE AIM/PURPOSE OF THE STUDY?

The aim of this study is to operationalise a theoretical concept (Reformed Curatorship) by determining managerial perceptions on resource vulnerability within wine-producing entities in the South African industry.

WHY AM I BEING INVITED TO PARTICIPATE?

You are part of a sample of approximately 400 respondents which were chosen based on your position at a wine-producing entity. Your information was obtained in the public domain.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY AND WHAT DOES THE RESEARCH INVOLVE?

The study involves completing an online questionnaire about your perceptions relating to resources within your organisation.

CAN I WITHDRAW FROM THIS STUDY?

Participating in the study is voluntary and you are under no obligation to participate. You are free to withdraw at any time before submitting the questionnaire without giving a reason, but questionnaires are submitted confidentially, and it may not be possible to withdraw after submission of the questionnaire.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

Your participation in the study is important to better help us operationalise a robust theoretical concept which will allow for the reduction of resource vulnerability within firms.

WHAT IS THE ANTICIPATED INCONVENIENCE OF TAKING PART IN THIS STUDY?

Apart from the time commitment, there should be no discomfort or inconvenience beyond what you may experience in your daily life.

WILL WHAT I SAY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere, and no one will be able to connect you to the answers you give. Your answers may be reviewed by people responsible for making sure that research is done properly, including a statistician and members of the Research Ethics Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records. Research results will be published in a thesis. A report of the study may be also submitted for publication (e.g. in conference proceedings or academic journals). However, organisations or individual participants will not be identifiable in such reports unless their specific permission has been obtained.

HOW WILL INFORMATION BE STORED AND ULTIMATELY DESTROYED?

Electronic copies of your answers will be stored by the researcher for a period of 5 years on a password protected disk. Information will be destroyed by deleting the files after 5 years.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There are no direct incentives or payments for participating in the study. Should you wish to receive a summary of the research results, you can request it by providing your e-mail address at the end of the questionnaire.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the Graduate School of Business Leadership at Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS?

Should you wish to receive a summary of the research results, you can request it by providing your e-mail address at the end of the questionnaire. The e-mail address will be used only for distributing a copy of the research report. Should you have concerns about the way in which the research has been conducted, you may contact Prof Peet Venter at ventep@unisa.ac.za or at mobile number 082 416 6801.

Should you have any questions relating to the study, you are welcome to contact me, Wilhelm Neuland, at wkneuland@yahoo.com or telephonically on 084 899 1900.

This questionnaire would probably take 10 - 15 minutes to complete. You would be able to complete on a smartphone, iPhone, and it is best viewed with Google Chrome.

Thank you for taking time to read this information sheet and for participating in this study. There are 16 questions in this survey

RESOURCE VULNERABILITY REDUCTION QUESTIONNAIRE

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Dear Participant,

The following questionnaire has been designed to measure the degree of resource vulnerability prevalence within your organisation. Note that all the questions refer to your organisation. It is an opinion-based questionnaire and there are no right or wrong answers, your own personal conviction in answering the questions truthfully are the only criterion. Please complete all the questions, as any question not completed will render your data unusable.

The questionnaire is divided into two parts: **Part A** relates to demographic details about you and your managerial position. **Part B** relates to the actual questions of the questionnaire.

The questionnaire uses a five-point scale, which ranges from **NOT AT ALL** to **DEFINITELY**.

For each statement please tick the number that corresponds to your level of agreement and ensure that **ALL** statements are rated by ticking **ONE** response only per question. At the end of the questionnaire, there will be an open space for any comments you would like to make, or anything you would like to bring to the attention of the researcher.

*All information will be treated with the utmost confidence. If you prefer to stay anonymous you may do so by omitting some of your personal particulars (indicated with **).*

Part A: Demographic details

Demographic details *

Please write your answer(s) here:

Company Name:

Position:

Demographic details

** *Optional information*

Please write your answer(s) here:

**Name:

**Phone No.:

**Email:

Does your area cover more than 100 hectares under vine? *

Please choose only one of the following:

- Yes, my organisation has more than 100 ha under vine
 No, my organisation has less than 100 ha under vine

Please select the area below that best represents the geographic location of your organisation *

Please choose only one of the following:

- Breedekloof
Cape Peninsula
Philadelphia and Darling
Eastern Cape
Eglin
Franschhoek
Klein Karoo and Garden Route
KwaZulu-Natal
Northern Cape
Free State and North West
Olifants River and West Coast
Robertson
Southern Cape
Swartland
Tubagh
Villiersdorp

Walker Bay and Bot River

Wellington

Worcester



Durbanville

Heidelberg

Paarl

Stellenbosch

Part B

[]

1. EROSION

1.1 Value-induced attrition

*The following questions refer only to certain individuals within the organisation, specifically specialists, supervisors or managers. **

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
These individuals exhibit self-promoting behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These individuals have been offered employment by other organisations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These individuals bargain for better remuneration or fringe benefits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These individuals enjoy inflated salaries compared to the industry standard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Some of these individuals enjoyed above-average media attention due to their performance within the organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apart from their work-related contribution, these individuals cause trouble within their departments or within the organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

1. EROSION

1.2 Value-induced skewness

*The following questions only refer to departments or divisions within the organisation. **

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Some departments enjoy a greater allocation of resources at the expense of other departments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Departments feel that they need to 'fight' for, or 'earn' their resources or budgets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Departments adjust to their resources or budgets instead of 'fighting' for more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Departments do things in an established way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
'Successful' or 'well-performing' departments receive the lion's share of resources or budget.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

1. EROSION

1.3 Intangible delicateness

The following questions refer to abstract facets, such as the organisation's reputation or morale of the employees. *

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
It takes an organisation a short time to establish a good reputation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organisation's reputation is resilient and cannot be damaged easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishing and maintaining high morale of employees requires little attention and focus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
With the way things are going within the organisation, morale could be eroded quickly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In our organisation, morale could be described as robust and resistant to change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

2. AMBIGUITY

2.1 Resource ambivalence

The following questions deal with people as resources. *

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Employees are evaluated subjectively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees create value in one part of the firm, whilst destroying value somewhere else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees which have exited the organisation, did so because they felt under-valued.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, evaluations from managers are inaccurate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees discontent with their evaluation would have been better off had they not been evaluated in the first place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

2. AMBIGUITY

2.2 Linkage ambiguity

The following questions deal with the linkages between departments concerning information and knowledge within the organisation. *

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
To transfer information within the organisation is complicated or difficult.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To transfer knowledge or 'know-how' is difficult.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organisation lacks processes which facilitate the transfer of information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organisation lacks processes which facilitate the transfer of knowledge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Any process used to transfer knowledge or information within the organisation could best be described as being complex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

2. AMBIGUITY

2.3 Tacitness

*The following questions deal with unspoken, intangible facets such as knowledge, communication and ambiguity within the organisation. **

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Work-related knowledge or 'know-how' resides within certain individuals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge or 'know-how' in the organisation is unwritten or uncodified.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees have difficulty in transferring knowledge to juniors or to peers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally speaking, there seems to be ambiguity or ambivalence within the organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Misunderstandings arise when communication between individuals or departments take place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

3. MISALIGNMENT

3.1 Context dependency

*The following questions relate to the context within the organisation in which resources are utilised. **

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Resources are used for the purposes other than that for which they are intended.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The circumstances within the organisation or departments change often enough to be disruptive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Circumstances determine how resources should be used, regardless if a resource is utilised for an unintended purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

3. MISALIGNMENT

3.2 Systematic complexity in capabilities

*The following questions relate to the degree of complexity within the organisation. **

Please choose the appropriate response for each item:

	Not at all	To a lesser degree	To some degree	To a large degree	Definitely
Resources are mixed with capabilities in order to produce results.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a vast range of resources and capabilities needed to achieve results.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources and capabilities employed throughout the organisation could be described as complex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[]

4. PERFORMANCE

The following questions relate to your subjective observation of your organisation's performance. Please choose the most appropriate value according to the best of your knowledge.

Compared to other organisations that do the same kind of work, how would you compare the organisation's performance over the past 3 years in terms of...?

*

Please choose the appropriate response for each item:

	Much worse	Slightly worse	Slightly better	Much better
Marketing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Growth in sales?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Profitability?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market share?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

COMMENTS

Any comments you would like to make, or anything you would like to bring to the attention of the researcher?

Please write your answer here:

Please enter your email address in the space below if you would like a summary of the results once the thesis has been completed.

Please write your answer here:

Submit your survey.
Thank you for completing this survey.

ANNEXURE 4: COMPLETE RAW DATA SET [REVERSED / SHUFFLED FOR ANONYMITY]

#	Position	> 100	Area?	[ER.1]	[ER.2]	[ER.3]	[ER.4]	[ER.5]	[ER.6]	[ER.7]	[ER.8]	[ER.9]	[ER.10]	[ER.11]	[ER.12]	[ER.13]	[ER.14]	[ER.15]	[ER.16]
1	CEO	1	1	4	5	3	1	2	1	3	4	2	3	3	2	3	2	3	2
2	Assistant winemaker	0	0	4	4	3	2	5	3	3	4	4	4	4	1	2	3	4	3
3	Senior Winemaker	1	0	1	2	1	5	3	1	3	1	5	5	1	2	4	1	1	1
4	Winemaker	0	1	4	3	2	1	4	1	1	5	4	4	1	1	2	1	5	2
5	Winemaker	0	0	4	2	3	3	3	3	5	5	2	3	2	2	4	2	5	2
6	Managing Director and Owner	0	1	4	2	3	5	2	2	1	1	1	1	1	3	2	2	2	2
7	HR Manager	1	1	4	2	4	4	4	2	4	3	4	4	3	2	4	2	3	2
8	Owner	0	1	4	3	3	3	2	1	3	3	3	3	4	2	2	1	2	3
9	Manager/part owner	0	1	5	1	1	1	1	1	1	1	1	5	1	5	5	1	1	5
10	Managing Director	0	0	4	1	2	4	2	1	2	2	3	3	3	1	4	1	1	4
11	Winemaker	0	1	4	3	2	1	4	3	2	2	2	2	3	1	1	2	4	3
12	Winemaker/ Viticulture / Cellar	0	1	3	2	1	1	2	4	3	5	2	3	5	1	1	1	5	1
13	Owner Winemaker	0	1	5	4	3	2	4	1	1	1	4	4	2	3	4	2	1	2
14	cellarmaster GM	0	1	3	4	4	2	4	1	1	1	1	4	4	1	1	2	3	3
15	Winemaker	1	0	4	3	3	3	2	3	3	3	4	4	2	2	1	2	4	3
16	General Manager and Cellar	0	1	3	4	3	1	2	1	2	3	3	4	2	1	4	1	3	4
17	Assistant Winemaker	1	1	2	2	3	1	1	2	1	2	2	4	2	2	1	2	4	3
18	Winemaker	0	0	5	4	1	2	1	1	1	1	1	3	3	1	1	3	3	2
19	Winemaker	1	0	4	3	3	3	4	2	4	3	4	4	2	2	3	2	3	2
20	General Manager	0	1	3	3	4	2	1	1	3	4	3	4	2	1	2	5	3	2
21	Director	1	0	3	3	2	4	1	1	1	1	1	4	2	2	5	4	2	5
22	Senior Winemaker	1	1	4	2	2	2	3	1	2	1	4	4	1	1	2	1	3	4
23	Winemaker	0	0	4	3	3	3	3	2	3	3	4	4	3	1	2	2	3	3
24	Operations Manager	0	1	3	2	3	2	2	1	1	1	1	1	1	2	1	1	2	4
25	Winemaker	1	0	4	4	4	1	1	1	4	4	4	2	4	1	4	3	4	3
26	Winemaker	1	1	2	2	2	3	3	1	2	2	4	4	2	2	2	2	3	2
27	Director	0	1	1	2	1	1	2	1	1	1	4	4	3	4	4	1	2	2
28	Wine Buyer (Winemaker)	0	0	3	4	3	3	1	1	2	3	3	4	2	1	2	2	4	2
29	Production Manager	1	1	1	1	1	1	1	1	2	1	5	4	1	4	3	3	1	2
30	Man/Dir	0	0	3	2	3	1	1	1	2	1	4	4	3	2	4	3	3	2
31	Managing Director	0	0	3	3	3	1	2	1	1	1	1	1	3	1	1	1	1	1
32	winemaker	1	0	2	1	3	5	2	3	3	3	4	4	3	4	2	3	3	3
33	Winemaker	0	1	2	3	3	2	2	2	3	4	3	2	1	3	3	3	3	3
34	Winemaker	0	1	3	3	3	2	3	1	2	3	4	3	2	1	1	2	2	2
35	Winemaker	0	0	4	3	1	2	3	3	2	1	4	4	1	1	2	1	4	4
36	ASSISTANT WINEMAKER	0	1	3	1	3	2	2	2	4	4	4	3	3	2	3	1	4	2
37	Tasting Room Manager	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
38	Winemaker	0	0	3	4	3	3	4	2	3	3	3	4	4	4	2	2	4	3
39	Production Manager	0	0	3	2	2	4	4	1	3	2	4	3	1	2	2	2	5	1
40	Sales & Marketing Manager	0	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	General Manager	0	0	3	3	2	3	2	1	1	1	1	5	1	1	1	4	1	3
42	Winemaker, Marketin & Sales	0	0	4	3	2	3	1	3	2	2	4	4	2	4	5	3	3	2
43	winemaker/manager	0	0	3	2	3	1	1	1	1	1	5	4	2	1	1	1	2	3
44	Winemaker	0	1	1	1	1	1	2	1	2	3	3	3	2	4	2	3	1	1
45	WINEMAKER / FARM MANAGER	0	0	3	2	3	2	2	2	2	1	2	4	2	1	1	1	3	2
46	Winemaker	0	0	2	1	1	1	1	4	3	4	5	5	5	1	1	1	5	1
47	Winemaker	1	1	2	4	3	3	2	1	2	2	4	4	3	3	3	2	2	2
48	Winemaker	0	1	5	3	3	2	4	2	3	3	2	2	2	4	3	3	3	3
49	Winemaker	0	1	3	2	3	3	3	2	3	2	3	4	3	3	3	4	4	3
50	Winemaker	0	0	2	1	1	1	1	1	1	1	1	3	3	3	2	5	1	3
51	General Manager	0	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	4
52	Owner	0	0	1	1	1	1	1	1	1	1	1	1	1	3	2	2	1	5

53	Senior Winemaker - prem	0	0	5	5	3	4	5	1	1	1	4	4	4	1	3	1	1	1
54	Winemaker	0	0	2	3	2	1	3	1	1	2	4	5	2	3	4	4	3	3
55	co-owner	0	1	5	4	3	4	3	1	4	1	4	4	1	2	3	2	3	3
56	managing member	0	0	1	1	1	1	1	1	3	1	4	4	1	1	1	1	1	4
57	Farm Manager	0	1	5	2	3	3	1	2	1	1	4	4	1	1	1	2	3	2
58	Farm Manager	0	0	3	2	4	2	3	1	2	2	4	4	2	3	2	4	3	3
59	Junior Winemaker	0	0	4	3	5	3	5	1	3	2	2	4	4	2	3	3	2	4
60	CEO	0	1	5	3	2	1	5	1	1	1	5	1	1	1	5	1	1	2
61	Owner	0	1	1	1	2	3	1	1	1	1	1	4	1	3	2	3	4	4
62	Winemaker	0	0	3	3	2	1	1	1	3	2	4	3	1	1	1	2	2	2
63	owner	0	1	3	2	4	2	3	4	4	4	3	4	3	5	3	3	4	3
64	Winemaker	0	0	3	2	3	1	3	2	1	1	1	4	1	1	2	5	5	2
65	Winemaker & Viticulturist	0	1	2	2	1	3	4	1	1	3	5	3	4	2	2	1	5	5
66	Farm manager/Winemaker	0	0	4	5	3	1	2	1	4	1	5	5	4	1	1	1	5	4
67	Owner/Proprietor	0	1	2	5	3	3	3	1	3	3	2	5	2	2	1	1	2	3
68	winemaker	0	1	1	3	2	1	3	1	1	1	1	3	1	2	2	3	2	3
69	Cellarmaster	1	1	4	5	4	2	5	1	1	1	2	5	3	3	4	5	5	2
70	OWNER	0	0	3	1	2	1	1	1	3	3	2	3	3	1	1	1	5	1
71	Assistant Winemaker	0	1	4	2	3	3	2	1	2	3	3	3	2	1	3	2	2	3
72	winemaker	0	1	2	1	1	2	1	1	1	2	3	3	3	2	3	1	2	4
73	winemaker	1	0	2	3	3	1	2	1	2	1	1	4	3	2	3	3	2	2
74	winemaker	0	0	4	1	3	3	4	1	5	3	4	4	5	4	1	1	3	3
75	Owner	0	0	1	1	2	1	1	1	1	2	2	4	1	4	4	3	3	2
76	Cellarmaster	1	0	2	3	3	1	4	1	3	1	5	5	2	3	4	4	2	4
77	Directoe	0	0	5	5	4	2	2	1	3	3	3	5	4	3	2	4	2	3
78	Winemaker	0	1	2	3	2	2	4	2	2	2	3	3	2	3	3	1	2	2
79	Assistant Winemaker	0	1	4	3	1	3	3	2	4	3	4	5	5	4	5	3	3	3
80	Winemaker	0	1	3	3	3	3	2	2	2	2	3	3	2	3	3	3	2	2
81	Winemaker	1	1	3	3	3	3	3	1	3	3	3	4	4	1	1	1	2	3
82	Manager - Business Develo	0	1	3	2	2	3	2	1	3	2	5	4	2	1	1	2	2	3
83	Winemaker	0	0	3	4	1	1	3	2	5	5	5	3	3	3	1	1	5	1
84	Member of a CC	1	1	1	1	1	1	1	1	1	3	3	3	1	2	1	3	3	2
85	ex winemaker/cellarmaste	1	1	4	3	1	2	3	1	3	1	1	3	1	1	4	3	3	3
86	Winemaker	0	1	3	4	5	3	2	2	1	1	2	3	2	4	3	1	1	4
87	Winemaker	1	1	2	3	3	2	1	1	2	2	2	4	2	1	1	1	2	3
88	Manager Wines and Viticultu	1	1	5	5	4	3	4	1	4	4	4	4	3	2	3	1	2	5
89	Winemaker	0	1	4	2	2	1	3	1	4	2	4	3	2	1	3	2	3	4
90	Winemaker	1	1	4	2	2	3	3	4	4	3	5	5	3	1	1	1	5	4
91	Owner	0	0	4	3	4	2	5	2	4	3	4	4	5	2	1	1	4	4
92	Winemaker	1	0	1	3	1	4	2	1	2	2	4	4	3	2	2	1	2	3
93	Winemaker	0	1	4	2	4	3	4	2	1	2	3	4	3	2	1	1	2	3
94	Winemaker	0	0	1	2	1	1	3	1	1	1	1	5	1	1	4	1	1	5
95	Cellarmaster	1	0	1	2	1	1	1	1	1	1	1	2	1	1	1	1	2	1
96	WINEMAKER	0	0	1	1	2	1	1	1	1	1	1	3	3	3	4	4	2	2
97	Owner	0	1	4	3	2	3	3	2	1	1	3	3	4	3	4	3	2	4
98	Winemaker	0	1	1	3	2	3	3	3	3	3	3	4	3	3	1	1	3	3
99	MD	1	1	4	4	3	4	2	1	1	2	5	5	1	2	5	1	2	3
100	General Manager/Cellar Ma	1	1	3	3	3	2	2	1	2	1	3	3	3	3	2	1	1	3
101	Manager/Winemaker	1	1	5	3	5	3	3	1	1	1	5	5	3	1	1	1	5	3
102	Owner	0	0	2	1	1	1	2	1	1	1	1	3	1	1	2	2	2	2
103	CEO & Founder	0	0	3	2	3	2	3	2	1	2	3	4	3	1	3	1	4	2
104	Winery Manager	0	1	1	1	1	1	1	1	1	3	2	4	1	3	4	1	3	3

#	Position	[AM.1]	[AM.2]	[AM.3]	[AM.4]	[AM.5]	[AM.6]	[AM.7]	[AM.8]	[AM.9]	[AM.10]	[AM.11]	[AM.11]	[AM.13]	[AM.14]	[AM.15]
1	CEO	2	1	1	2	2	1	2	3	3	2	3	2	2	1	2
2	Assistant winemaker	4	2	2	1	3	4	3	2	2	3	5	2	1	1	4
3	Senior Winemaker	1	1	1	1	1	1	3	1	1	1	4	1	3	1	1
4	Winemaker	4	2	5	1	1	2	2	5	5	5	1	4	1	2	2
5	Winemaker	3	3	4	3	4	5	4	4	4	3	4	3	3	3	4
6	Managing Director and Ow	4	2	1	2	2	1	3	3	3	2	4	4	2	2	4
7	HR Manager	3	2	1	2	2	2	2	2	2	2	4	4	3	2	3
8	Owner	3	2	2	2	4	2	2	2	2	2	4	3	3	2	2
9	Manager/part owner	1	1	1	1	1	1	1	1	1	1	5	1	1	1	1
10	Managing Director	4	1	1	1	1	2	2	2	2	2	3	3	3	2	2
11	Winemaker	3	3	2	2	3	1	3	3	3	3	4	4	4	4	5
12	Winemaker/ Viticulture / Cc	4	4	4	4	2	5	5	5	5	5	5	5	5	4	5
13	Owner Winemaker	5	1	1	1	1	1	3	3	2	2	4	3	2	1	3
14	cellarmaster GM	4	1	1	1	1	1	1	1	1	1	4	4	2	3	2
15	Winemaker	2	4	3	4	3	4	3	3	3	3	4	4	4	3	3
16	General Manager and Cella	3	1	2	1	3	2	3	1	1	2	4	3	2	2	3
17	Assistant Winemaker	4	1	3	2	3	1	2	1	1	2	2	1	2	3	3
18	Winemaker	5	2	1	1	1	1	1	1	1	1	4	4	2	2	3
19	Winemaker	3	1	2	2	2	2	2	2	2	2	3	2	2	2	3
20	General Manager	5	1	2	1	3	1	1	1	1	1	3	2	1	1	2
21	Director	3	1	3	2	2	1	2	2	2	2	4	3	2	2	2
22	Senior Winemaker	1	1	3	1	1	1	2	1	2	2	4	2	2	2	3
23	Winemaker	2	3	3	2	2	2	3	2	2	2	4	3	3	2	2
24	Operations Manager	5	1	1	1	1	1	2	1	1	1	3	4	1	1	1
25	Winemaker	1	1	4	4	4	4	3	4	4	4	4	4	2	4	4
26	Winemaker	4	2	2	2	2	1	2	3	3	3	3	2	2	2	3
27	Director	1	1	3	1	1	1	3	1	1	1	4	4	1	1	2
28	Wine Buyer (Winemaker)	4	2	3	2	1	3	4	3	4	3	4	2	4	3	4
29	Production Manager	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1
30	Man/Dir	3	2	1	1	2	1	1	1	1	1	3	4	3	3	4
31	Managing Director	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32	winemaker	2	2	3	2	2	4	4	2	2	3	4	4	4	3	5
33	Winemaker	2	2	2	2	1	2	2	3	3	2	4	3	2	2	3
34	Winemaker	3	1	3	2	1	1	2	3	3	2	4	4	3	3	3
35	Winemaker	4	3	4	4	3	4	4	4	4	4	4	4	4	4	4
36	ASSISTANT WINEMAKER	3	1	3	3	3	4	4	2	2	2	3	2	3	3	3
37	Tasting Room Manager	5	1	1	1	1	1	1	1	1	1	3	1	1	1	1
38	Winemaker	3	2	2	3	2	2	2	2	2	2	3	3	2	2	3
39	Production Manager	2	1	3	4	2	2	4	1	4	4	4	3	3	3	3
40	Sales & Marketing Manage	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2
41	General Manager	3	2	1	1	1	1	1	2	2	2	3	3	2	1	1
42	Winemaker, Marketin & Sa	5	2	2	1	1	2	2	2	2	2	4	3	3	3	2
43	winemaker/manager	1	1	1	1	1	1	1	1	1	1	4	1	1	1	3
44	Winemaker	3	1	2	1	1	4	4	4	4	4	4	4	4	1	1
45	WINEMAKER / FARM MANAG	2	1	1	2	1	1	1	1	1	1	2	4	1	2	2
46	Winemaker	4	4	5	5	5	5	5	5	5	1	5	5	4	5	4
47	Winemaker	3	1	2	1	1	1	1	1	1	1	3	1	1	1	4
48	Winemaker	3	2	2	2	2	1	3	2	2	2	3	2	3	3	5
49	Winemaker	3	1	1	1	1	1	1	1	1	2	3	1	1	1	3
50	Winemaker	3	1	1	1	1	1	2	1	1	1	3	5	1	2	4
51	General Manager	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1
52	Owner	1	1	2	1	1	1	1	1	1	1	5	4	2	1	2

53	Senior Winemaker - premi	5	1	1	1	1	1	1	1	1	1	3	1	1	3	1
54	Winemaker	5	1	3	1	4	3	2	2	2	3	4	4	3	2	4
55	co-owner	3	2	1	1	1	2	3	3	3	2	4	2	3	2	4
56	managing member	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
57	Farm Manager	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1
58	Farm Manager	5	3	2	2	2	2	2	2	2	2	3	3	2	3	3
59	Junior Winemaker	3	1	1	1	1	2	2	3	3	2	5	3	2	1	2
60	CEO	3	1	1	1	5	1	1	1	1	3	5	3	1	1	2
61	Owner	4	1	1	1	1	1	1	1	1	1	4	4	1	1	2
62	Winemaker	4	1	2	2	3	1	1	4	2	1	3	2	1	1	2
63	owner	4	4	4	2	1	2	2	3	3	4	4	4	3	3	2
64	Winemaker	1	3	3	4	4	3	2	4	2	2	4	3	3	3	3
65	Winemaker & Viticulturist	3	3	3	3	2	3	4	4	4	1	3	4	5	3	4
66	Farm manager/Winemaker	3	4	3	2	3	4	5	3	2	2	4	1	2	3	5
67	Owner/Proprietor	2	1	1	4	2	1	1	1	2	2	4	3	1	1	2
68	winemaker	1	1	1	1	1	1	2	1	2	1	4	3	2	1	1
69	Cellarmaster	3	1	3	1	1	3	4	4	2	4	5	4	2	3	3
70	OWNER	3	1	2	2	1	1	2	2	2	1	3	4	2	1	2
71	Assistant Winemaker	5	2	2	2	2	1	2	1	1	1	1	1	2	2	3
72	winemaker	4	2	3	2	2	2	2	2	2	1	3	2	2	2	3
73	winemaker	2	2	3	2	1	2	2	2	3	2	4	2	1	1	2
74	winemaker	4	1	2	3	2	2	4	3	4	3	5	4	2	2	3
75	Owner	5	1	1	1	2	2	2	1	1	1	4	4	1	1	4
76	Cellarmaster	3	1	2	1	1	1	2	1	1	2	2	1	1	4	2
77	Directoe	4	4	1	2	2	2	2	3	2	2	4	4	2	3	3
78	Winemaker	2	2	3	1	1	1	1	1	2	2	3	3	2	2	4
79	Assistant Winemaker	4	2	3	2	2	4	2	5	2	5	5	4	3	4	2
80	Winemaker	4	2	2	2	2	2	2	2	2	2	3	2	2	2	2
81	Winemaker	2	1	3	2	1	3	4	2	3	4	3	1	2	1	5
82	Manager - Business Develo	1	2	3	2	1	2	2	2	2	2	3	3	3	2	3
83	Winemaker	1	2	5	3	4	3	3	1	1	2	4	4	2	2	3
84	Member of a CC	4	3	1	1	1	4	4	4	4	5	4	3	3	4	5
85	ex winemaker/cellarmaste	2	2	2	2	1	1	1	1	1	1	1	3	1	3	3
86	Winemaker	4	2	1	2	1	4	3	4	3	4	3	3	2	2	3
87	Winemaker	3	1	2	3	3	2	2	2	3	3	3	2	3	3	3
88	Manager Wines and Viticultu	4	2	3	2	2	1	2	2	2	2	3	3	1	2	5
89	Winemaker	3	2	2	1	2	2	2	4	4	3	4	4	3	3	3
90	Winemaker	2	2	5	4	2	5	4	5	5	4	3	4	3	4	5
91	Owner	3	2	2	3	4	3	4	3	3	4	5	3	3	2	4
92	Winemaker	4	1	2	1	2	2	4	2	4	3	3	2	3	2	2
93	Winemaker	4	1	2	2	3	1	4	3	3	2	4	4	2	2	2
94	Winemaker	5	1	2	1	5	1	1	1	1	1	5	4	1	5	1
95	Cellarmaster	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
96	WINEMAKER	4	1	1	1	1	1	1	1	1	2	3	2	1	1	2
97	Owner	3	2	2	2	2	2	2	3	2	2	4	3	3	3	2
98	Winemaker	3	3	3	3	3	2	2	2	2	1	3	3	1	3	3
99	MD	4	1	1	1	1	2	1	4	1	2	3	2	2	2	3
100	General Manager/Cellar Ma	5	1	1	1	1	2	3	1	1	2	3	1	3	3	5
101	Manager/Winemaker	3	1	4	3	5	3	2	2	2	2	4	4	2	1	5
102	Owner	2	1	1	2	2	1	1	1	2	1	5	4	1	2	2
103	CEO & Founder	2	2	2	2	2	1	1	2	1	1	3	2	2	2	2
104	Winery Manager	5	1	3	2	1	1	1	1	1	2	3	1	1	1	4

#	Position	[MA.1]	[MA.2]	[MA.3]	[MA.4]	[MA.5]	[MA.6]	[FP.1]	[FP.2]	[FP.3]	[FP.4]
1	CEO	2	2	2	4	4	2	3	3	3	3
2	Assistant winemaker	2	2	3	4	4	4	2	3	2	1
3	Senior Winemaker	1	1	1	1	3	1	3	3	3	3
4	Winemaker	3	3	4	5	5	5	1	3	3	3
5	Winemaker	2	2	2	2	3	3	3	2	2	2
6	Managing Director and Own	2	1	3	4	4	3	3	3	3	3
7	HR Manager	2	1	2	3	4	3	4	4	3	3
8	Owner	3	2	3	4	3	3	3	3	2	2
9	Manager/part owner	1	1	5	5	5	1	3	3	3	1
10	Managing Director	1	1	1	4	2	2	1	2	3	2
11	Winemaker	2	2	1	2	2	3	3	2	2	3
12	Winemaker/ Viticulture / Co	4	4	4	5	5	5	1	2	1	1
13	Owner Winemaker	1	1	2	3	1	2	2	3	3	2
14	cellarmaster GM	2	2	4	4	2	2	4	4	3	4
15	Winemaker	3	4	4	4	2	3	2	3	3	2
16	General Manager and Cella	2	2	2	4	4	4	3	3	3	3
17	Assistant Winemaker	1	1	2	3	3	2	2	3	2	3
18	Winemaker	1	1	1	5	2	3	1	1	1	1
19	Winemaker	2	2	3	4	3	3	3	3	3	3
20	General Manager	1	2	3	3	2	2	2	3	4	3
21	Director	1	1	2	3	3	4	3	4	4	4
22	Senior Winemaker	1	1	3	4	4	4	2	2	2	2
23	Winemaker	2	2	3	4	4	4	3	3	3	3
24	Operations Manager	1	2	2	5	3	3	3	4	4	3
25	Winemaker	2	2	3	2	4	4	3	4	4	4
26	Winemaker	2	2	2	2	3	2	4	4	3	3
27	Director	1	1	2	4	3	1	3	4	4	3
28	Wine Buyer (Winemaker)	2	4	3	4	5	5	3	3	4	3
29	Production Manager	1	1	2	3	2	2	4	4	4	3
30	Man/Dir	2	4	5	3	2	2	1	1	1	2
31	Managing Director	1	2	1	5	5	5	4	3	2	3
32	winemaker	3	3	4	3	4	4	2	1	1	1
33	Winemaker	2	3	3	3	2	2	2	3	3	3
34	Winemaker	3	1	4	3	2	2	1	3	1	2
35	Winemaker	3	3	3	4	4	4	2	3	3	3
36	ASSISTANT WINEMAKER	3	3	3	3	2	3	1	3	2	2
37	Tasting Room Manager	1	1	1	5	5	5	4	4	4	4
38	Winemaker	2	2	3	4	3	3	3	4	4	4
39	Production Manager	2	1	3	3	3	3	2	1	1	2
40	Sales & Marketing Manage	1	1	2	2	2	1	4	4	4	4
41	General Manager	1	1	1	4	4	4	4	4	3	3
42	Winemaker, Marketin & Sal	1	1	2	3	2	2	3	3	2	1
43	winemaker/manager	2	2	3	4	4	3	3	3	3	3
44	Winemaker	1	1	1	2	2	3	3	3	3	3
45	WINEMAKER / FARM MANAG	3	1	2	2	1	2	3	3	3	3
46	Winemaker	5	5	5	4	4	5	2	1	2	2
47	Winemaker	1	1	1	2	2	2	4	4	4	4
48	Winemaker	3	3	3	3	4	3	2	3	2	1
49	Winemaker	1	1	2	3	3	3	3	3	3	3
50	Winemaker	1	1	2	4	1	2	2	1	4	3
51	General Manager	1	1	1	3	1	1	2	3	2	2
52	Owner	1	1	1	2	5	4	3	3	4	3











53	Senior Winemaker - premi	1	1	1	3	1	1	4	4	4	4
54	Winemaker	2	1	4	5	4	4	4	3	3	3
55	co-owner	2	1	2	2	3	2	3	3	2	2
56	managing member	1	1	1	4	2	1	4	4	4	3
57	Farm Manager	1	1	2	3	3	1	2	3	3	2
58	Farm Manager	2	4	3	4	4	3	4	4	4	3
59	Junior Winemaker	1	1	2	5	4	4	3	4	4	3
60	CEO	2	1	5	3	1	2	4	4	3	3
61	Owner	1	1	2	5	5	4	2	3	2	1
62	Winemaker	1	2	3	4	4	3	1	3	2	1
63	owner	2	2	2	3	3	4	2	1	1	1
64	Winemaker	2	2	2	3	3	3	1	1	1	1
65	Winemaker & Viticulturist	2	3	4	4	4	2	2	3	2	2
66	Farm manager/Winemaker	1	2	5	3	4	3	1	1	1	1
67	Owner/Proprietor	1	1	4	4	3	5	4	4	4	3
68	winemaker	1	1	2	3	3	3	3	3	3	3
69	Cellarmaster	1	1	1	2	4	3	2	2	4	2
70	OWNER	3	2	2	3	4	2	3	3	3	3
71	Assistant Winemaker	2	1	2	4	1	1	2	3	4	2
72	winemaker	2	2	3	3	3	3	3	3	2	2
73	winemaker	2	1	3	2	2	3	2	1	3	2
74	winemaker	1	4	2	4	3	3	4	3	3	4
75	Owner	1	1	2	4	2	2	3	3	2	2
76	Cellarmaster	2	2	2	4	3	2	4	3	3	4
77	Directoe	4	1	3	3	4	2	3	3	2	3
78	Winemaker	2	3	3	3	2	2	3	3	3	4
79	Assistant Winemaker	2	1	4	3	4	3	2	2	1	2
80	Winemaker	2	2	3	3	3	2	3	4	4	4
81	Winemaker	1	1	1	3	3	3	4	4	3	4
82	Manager - Business Develo	1	1	2	3	2	2	3	4	3	3
83	Winemaker	5	3	5	3	5	3	2	3	1	1
84	Member of a CC	3	4	3	4	4	5	2	2	2	2
85	ex winemaker/cellarmaste	1	1	4	4	4	1	3	4	3	4
86	Winemaker	3	3	3	3	2	3	4	4	4	4
87	Winemaker	2	2	1	4	4	4	3	3	3	3
88	Manager Wines and Vitiultu	2	3	3	4	4	4	4	4	3	4
89	Winemaker	4	3	4	4	4	3	2	2	1	2
90	Winemaker	1	2	2	3	5	5	3	3	3	2
91	Owner	2	2	4	3	2	3	2	3	3	2
92	Winemaker	1	1	1	4	2	2	4	3	4	4
93	Winemaker	2	3	4	4	4	4	3	4	3	3
94	Winemaker	1	1	5	5	5	5	4	3	2	4
95	Cellarmaster	1	1	1	1	1	1	4	4	3	4
96	WINEMAKER	1	1	1	3	4	4	4	4	3	4
97	Owner	3	3	3	3	3	3	4	4	4	4
98	Winemaker	2	3	3	3	4	3	2	2	1	1
99	MD	1	1	2	4	4	3	3	3	2	3
100	General Manager/Cellar Ma	1	1	3	1	3	3	4	4	3	4
101	Manager/Winemaker	5	4	4	4	3	2	2	1	1	2
102	Owner	1	1	1	4	4	3	1	3	2	2
103	CEO & Founder	2	2	2	3	4	1	3	4	3	3
104	Winery Manager	1	1	1	1	1	1	4	4	4	4

#	Position	Any comments you would like to make, or anything you would like to bring to the attention of the researcher?
1	CEO	Please note our Winery is in the Robertson region - for some reason it shows Breedekloof.
2	Assistant winemaker	
3	Senior Winemaker	
4	Winemaker	
5	Winemaker	
6	Managing Director and	Ours is a family operation, with me and my wife as the management with one administrator and three cellarworkers. We do everything, there is no clear departments within the organisation.
7	HR Manager	
8	Owner	
9	Manager/part owner	As discussed we are a 2 man Wine Farm, husband and wife. Either my husband or myself do the work. No employees. Our industry is so specific, and our market so small, that also taking into account, Port Elizabeth has very little "extra income", it is a difficult task to compare to a busy vineyard in a larger city with visitors having more money to spend on luxuries. (we are a luxury) Most of our trade is from the overseas traveler - up to 95%. Locals do not like to travel, we are 10km from most shopping areas and considered far out! I take it upon myself to give 110% every day to make this work. Good luck. Please advise your outcome.
10	Managing Director	Bear in mind that ours is a small operation
11	Winemaker	
12	Winemaker/ Viticulture / Co-Owner	
13	Owner Winemaker	
14	cellarmaster GM	
15	Winemaker	
16	General Manager and	None
17	Assistant Winemaker	Our organisation is a bulk wine cellar. So, especially, the last questions, was answered not thinking of the bottled wine market, but in terms of selling wine in bulk.
18	Winemaker	
19	Winemaker	its maybe a bit difficult in comparing the history of the company and structures/resources/ strategy of pre- and COVID times. it had a major influence on how business is done and the adaptability of the company to a very fast changing economical/ business landscape. critical thinking and critical decision making
20	General Manager	Evidently, these are exceptional times with regards to the various prohibitions we have been subjected to. This has resulted in unparalleled circumstances relating to staff well being and job security, cashflow, stock holdings, CAPEX budgets, R&D and the general ability to function coherently. Most of which has led to greater dissatisfaction of the industry and has ensured an unstable environment in which to exist and circulate. Some of the answers included in this survey thus reflect a general dissatisfaction with our ability to function normally and have thus impacted the ways in which the questionnaire may have been answered during "normal times".
21	Director	
22	Senior Winemaker	COVID have had a major impact on our industry, thus on our Company. Sales affects salaries and performance, and thus morale and sales have been down significantly due to alcohol bans etc. But we are working hard to keep everybody positive and motivated.
23	Winemaker	
24	Operations Manager	
25	Winemaker	The company has grown from a small company in a small space of time, to much larger and with more room to grow. The organic market share has grown and being a pioneer in RSA for some time, we have a lot of that specific market. Reyneke Wines has more than one owner and a lot of new plantings and development is planned.
26	Winemaker	
27	Director	This is a company run by 3 Directors each with specific specialties and they are family related, Father, Mother and Wine Maker Son. All qualified for their job descriptions within the company as Financial Director ,Marketing Director and Operational /Managing Director .Assistant winemakers , Farm Managers and cellar personnel are either qualified or in training to qualify.
28	Wine Buyer (Winemaker)	
29	Production Manager	
30	Man/Dir	n/a
31	Managing Director	
32	winemaker	
33	Winemaker	Please note that we are also a family entity with some family members in managerial positions, which does influence the dynamics of employee resources.

34	Winemaker	
35	Winemaker	
36	ASSISTANT WINEMAKER	
37	Tasting Room Manager	
38	Winemaker	
39	Production Manager	
40	Sales & Marketing Manager	
41	General Manager	We are not a farm, and we don't own vineyards, we have a custom crush done, under supervision of our consultant winemaker. I have answered the questions as it relates to our specific situation which would be slightly different from other wine farms or cellars.
42	Winemaker, Marketin & Sales Manager	
43	winemaker/manager	
44	Winemaker	
45	WINEMAKER / FARM MANAGER	
46	Winemaker	
47	Winemaker	NA
48	Winemaker	
49	Winemaker	
50	Winemaker	
51	General Manager	
52	Owner	N/A
53	Senior Winemaker - premium wines	
54	Winemaker	
55	co-owner	Good luck!
56	managing member	Many questions difficult to answer or not relevant to my one-man-business, without employees or departments. Good luck with your thesis.
57	Farm Manager	Perhaps use simpler language in your questions to make them more clear for the average person.
58	Farm Manager	Kanu underwent a change of ownership in 2018, with the new foreign owner increasing the farm's budget substantially from the previous local one.
59	Junior Winemaker	
60	CEO	Marketing q's were answered relative to Covid conditions. Please take into effect that we weren't allowed to trade for 24 weeks during the past 18 months
61	Owner	
62	Winemaker	
63	owner	
64	Winemaker	
65	Winemaker & Viticultur	We are a small family owned boutique winery and many of the question do not apply as we are a few people who handle everything on the farm that mostly exports/ sell wine within Franschoek.
66	Farm manager/Winemaker	
67	Owner/Proprietor	
68	winemaker	
69	Cellarmaster	Extremely complex questions that I find quite difficult to comprehend and that could either cause you to be on extreme 'poles' of the answering spectrum

70	OWNER	
71	Assistant Winemaker	
72	winemaker	
73	winemaker	
74	winemaker	
75	Owner	
76	Cellarmaster	Survey could be answered only for our organisation or for the bigger joint venture company with fast input in our company. Some answers would be different for the bigger company
77	Directoe	
78	Winemaker	
79	Assistant Winemaker	
80	Winemaker	
81	Winemaker	
82	Manager - Business De	issues raised are often influenced by the culture - which needs to be inclusive and with a common purpose
83	Winemaker	
84	Member of a CC	This is a boutique winery with a small workforce. The members in our CC is a husband, wife and son. We make use of temporary contract workers; mobile units do our bottling and labeling at our premises. We only get in extra workers when needed. During harvest time we make use of local professional services to conduct about 90+% of the harvest. The bulk of our grape harvest is delivered to the Co-operative Cellar. We make our boutique wines of 15 - 20% of the harvest.
85	ex winemaker/cellarm	I am Afrikaans speaking and would have been nice if survey would have been in Afrikaans so I could understand all. we are a small business and therefore a lot of the survey was not applicable to us but more for big complicated businesses buitenverwachting is run more like a family affair
86	Winemaker	
87	Winemaker	Survey was done on bulkwine and not on bottle wine, reason bottle wine is only 1% of our bussiness.
88	Manager Wines and Vi	NA
89	Winemaker	
90	Winemaker	
91	Owner	The 'power' hierarchy within many if not most wine industry players differ from most other industries, management of resources rest with people qualified to manage it (ie: a CFO will have a CA qualification) but the decision on how the resources will be applied are most often done by the company founder or winemakers (who has very little business qualifations and make decisions based on natural resource access or 'gut feel')
92	Winemaker	
93	Winemaker	
94	Winemaker	I found the questions weird. Almost "gossipy"
95	Cellarmaster	
96	WINEMAKER	
97	Owner	
98	Winemaker	
99	MD	
100	General Manager/Cellar Master	
101	Manager/Winemaker	
102	Owner	This is a very small winery, employing three people and a part time winemaker. Only on special occasions, such as harvest time or when bottling is done, do we employ up to 30 people for a day or two. Corporate type of questions does not apply at all.
103	CEO & Founder	
104	Winery Manager	

ANNEXURE 5: LINKS TO ALL STATISTICAL ANALYSES

1.	Annexure Descriptive statistics	 Descriptives.xlsm
2.	Sample results [Bivariate data – size and area]	 Sample results.xlsm
3.	EFA_erosion	 Erosion EFA.xlsm
4.	EFA_ambiguity	 EFA_ambiguity.xlsm
5.	EFA_misalignment	 EFA_misalignment.xlsm
6.	Reliability analysis	 Reliability.xlsm
7.	Group statistics	 Group_statistics.xlsm
8.	Correlation results	 Correlation results.xlsm
9.	Regression results	 regression results.xlsm
10.	Smart_PLS_SEM [bootstrapping]	 PLS_SEM_bootstrap.xlsx

11.	Model Matrix Procedure	 Model matrix procedure.xlsm
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Please Note: *Should any of the embedded files fail to open, please contact UNISA GSBL for complete set of statistical results.*

ANNEXURE 6: SIMILARITY REPORT [TURNITIN]

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by WILHELM KARL NEULAND

Submission date: 20-Jan-2022 11:15PM (UTC+0200)

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Word count: 71802

Character count: 407343



**REFORMED CURATORSHIP AS A STRATEGIC
APPROACH TO RESOURCE VULNERABILITY
REDUCTION IN THE SOUTH AFRICAN WINE
INDUSTRY**

**Thesis presented to the
Graduate School of Business Leadership
University of South Africa
in fulfillment of the requirements for the
Doctorate in Business Leadership Programme**

by
Mr Wilhelm Neuland [77441427]
January 2022

Supervisor: Professor P. Venter

ORIGINALITY REPORT



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