Post-pandemic vertical boundary strategies in the South African agricultural sector

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Abstract

This research project aims to investigate and analyse the impact of the Covid-19 pandemic on the vertical boundary strategies of firms in the South African agricultural sector (SAAS). It attempts to determine how firms have adapted to the disruption of vertical supply chains during periods of deep uncertainty.

Vertical integration is regarded as a "paradigm" problem for explaining firm- and market organisation in modern economics. Considering global dynamics and food security concerns, SAAS should revisit strategic and economic practices. It is essential to analyse how firms have adapted vis-à-vis disruption of vertical supply chains during periods of uncertainty, considering empirical difficulties in developing a theoretical account of these adaptation responses.

The research adopted a qualitative analysis approach, embracing interpretivism and an exploratory, multi-case study strategy to identify and compare the insights concerning vertical boundaries strategies of leading firms' senior management. In-depth-, semi-structured-, open-ended interviews were conducted, and secondary data were collected to investigate three pertinent research questions.

A dynamic gears model was created to illustrate the value of three themes emanating during the results' analyses: post-pandemic resilience, vertical boundary strategies, and strategising vs economising. Principal findings aligned with the agent-based model of Histen (2022), arguing that integrated firms better negotiate systemic change and uncertainty. However, as uncertainty decreases, markets outperform firms, indicating that dynamic interdependencies exist and vertical integration is crucial in market expansion and firm existence. A theoretical timeline visualises complex firm organisation within economic evolution, reflecting leadership's strategic and economic mindsets and affirming the argument by Williamson (1991) that SAAS firms are not economically-, rather strategically focused.

KEYWORDS

uncertainty, resilience, strategy, economy, vertical boundaries, South African agriculture.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the Master of Business Administration degree at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in another University. I further declare that I have obtained the necessary authorisation and consent to conduct this research.

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Divan Swart,

01 November 2022

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For ease of flow and examiner facilitation, hyperlinks were added to all in-text citations, figures, tables, appendices, and sections—CTRL+click, which will direct the reader to the relevant section in-document.

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Abbreviations

C19:	Covid-19 pandemic
Firm:	Business, organisation or company used interchangeably
ITA:	International Trade Administration
MREC:	Masters Research and Ethics Committee
Ri-vi:	Respondent i-vi
RQ1-3:	Research questions 1-3
SA:	South Africa
SAAS:	The South African agricultural sector

Chapter 1: Introduction to the research problem

1.1 Background and insight

This research project aims to investigate and analyse the impact of the Covid-19 pandemic [C19] on the vertical boundary strategies of firms in selected industries in the South African agricultural sector [SAAS]. It attempts to determine how firms have reacted and adapted to the disruption of their vertical supply chains during this period of extreme uncertainty, characterised as an example of fundamental uncertainty (Arthur, 2019), deep uncertainty (Marchau et al., 2019) and radical uncertainty (King & Kay, 2020), or as a “black swan” event (Taleb, 2007).

Taleb used the term black swan to describe unpredictable, rare and extreme events in an environment. These occurrences have three defining characteristics: 1) outliers, which deviate from the norm of typical expectations, 2) have an extreme impact; and 3) ex post facto explanations are devised, rendering the incident explicable and predictable (Taleb, 2007; Antipova, 2020).

C19 caused a world-wide disruption to domestic and international vertical supply chains as governments introduced lockdown measures to control the disease transmission. The impact of the pandemic raised fundamental issues regarding the efficient economic organisation of firms where the effects of these events may persist, mainly how to organise the firm's activities within the vertical supply chain, a primary concern of business strategy.

Besanko et al. (2017) argue that firms must constantly weigh the benefits of which activities should be conducted in-house and those activities it should leave to other firms in the market and industry, known as the “make-or-buy” decision. These decisions include activities involving upstream suppliers to downstream distributors and retailers within the value chain. This research investigates how a black swan event and a period of severe uncertainty affected the decisions of firms' organisation and activities within the vertical supply chain of an industry.

SAAS is particularly vulnerable to production and supply chain disruptions. Some risks and uncertainties are environmental impacts, weather and climate change

uncertainty, food security regulations, the volatility of commodity prices and exchange rates, international trade restrictions, domestic wage uncertainty, disruptions in electricity from Eskom, and the transport and port operations of Transnet. All of these factors can affect the level and profitability of production and substantially impact the structure, the organisation and the strategies of firms in SAAS.

Consequently, an important issue is whether firms in SAAS have changed vertical boundary strategies arising from the pandemic and the impact of such strategies, whether deliberately or unknowingly, on the sector's activities, stakeholders, and shareholders.

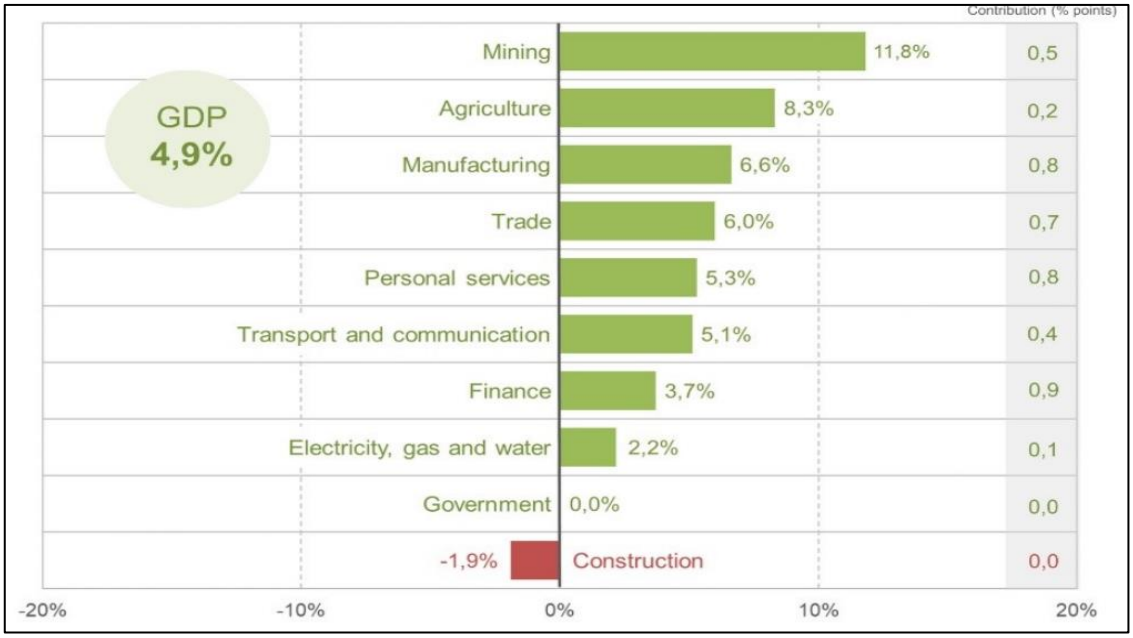
1.2 Problem statement

The research investigates if and how business strategies have changed toward adaptability, resilience, and improved coordination in the vertical supply chain because of C19, which has brought complexity, uncertainty, and change to the economy. Williamson (1991), in a seminal article, explained the optimal strategy of economic organisation as one that operates and organises efficiently throughout the long run rather than effectively strategising for the present to near future; what he calls the strategising vs economising concept. However, this economising narrative is complicated, and failures frequently occur, resulting in misalignment, inefficiency, waste, slack, or bureaucracy (Williamson, 1991).

SAAS is an example of a diverse and highly integrated industry essential for food security and employment (Stats SA, 2019). Production in the sector is volatile. Despite the emergence of C19, the growth rate of SAAS in 2020 was exceptionally high, as depicted in Figure 1. During C19 in 2020, SAAS accounted for 10% of South Africa's [SA] total exports, was regarded as a growth platform for the Southern African developing community and employed 70% of the rural population in SA (Statista, 2020).

Figure 1

Growth rate per in SA; 2021 compared to 2020



Note. This figure was produced by Stats SA 2020 to show the latest growth rates of specific sectors related to the South African GDP. From "The South African economy records a positive fourth quarter *(P0441)."* by Statistics South Africa. (2021). https://www.statssa.gov.za/?p=15214

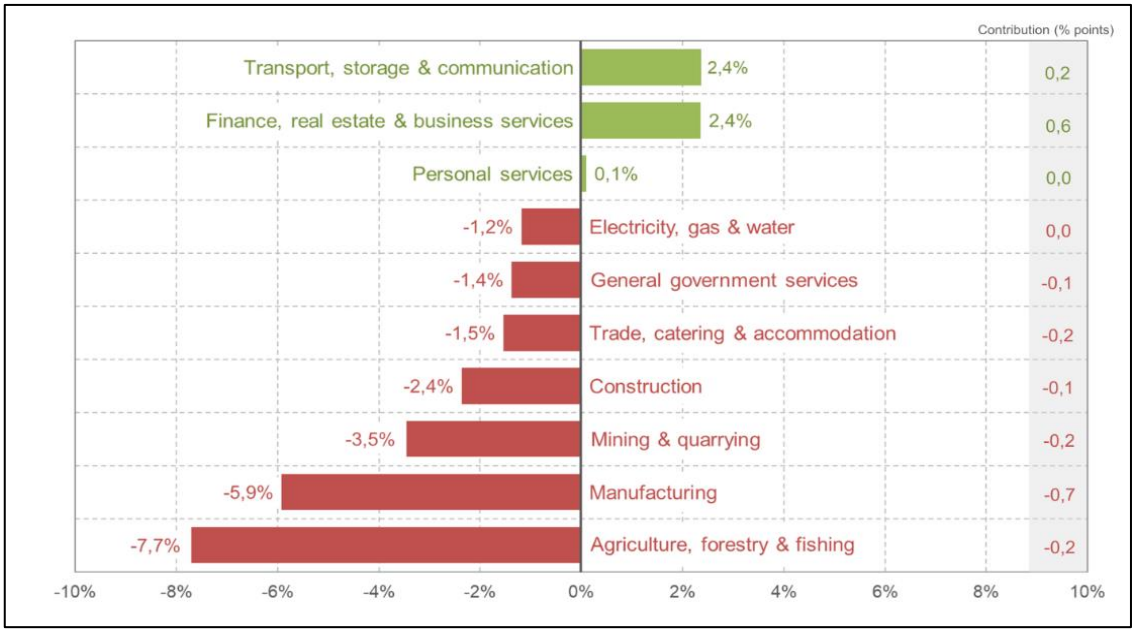
However, conversely, the most recent data shows a different environment for SAAS with mixed outcomes for 2022; a significant decline in production is expected for the year. While exports increased by 12%, primarily due to maize, apples, pears, grapes, and sunflower oil, the sector was overshadowed by a decrease of 22% in citrus exports (Kriel, 2022).

As a result of China's export ban in response to the current outbreaks of foot-and-mouth disease, wool exports decreased by 42%. In tandem with a fall in animal productivity and a substantial increase in feed and other input costs arising from the escalating effects of C19 and the Russia-Ukraine war, SAAS consequently contracted 7.7% to R117 billion in the second quarter, adding -0.2% to a negative GDP growth as shown in Figure 2 (Stats SA, 2022).

C19 was declared a global pandemic by the World Health Organisation on March 12 2020, as mentioned in Reinhart (2020), and similar to SAAS responses locally, there have been effects and evident consequences on an international scale.

Figure 2

Industry growth rate; Q2 2022 compared to Q1 2022



Note. This figure was produced by Stats SA 2022 to show the latest Q-Q growth rates of specific sectors related to the South African GDP. From "The South African economy records a positive fourth quarter (P0441)" by Statistics South Africa. (2021). https://www.statssa.gov.za/?p=15214

Reinhart (2020) argued that the pandemic led to distinct government policy responses compared to prior crises, as firms reacted by examining their economic organisation and the need for resilient strategies to manage efficiently during the pandemic and its aftermath. Internationally, the adverse effects of the supply-demand shocks arising from these policy responses have resulted in substantial restrictions on economic activities and a slump in economic growth (Ding et al., 2020). These responses have had spillover effects on SAAS, adding to the importance of analysing and understanding how firms in SAAS have responded and adapted in the last two years.

Besanko et al. (2017) defined the vertical chain as a collection of activities in producing goods or services: from raw material acquisition, production and transactions such as contractual agreements to distribution, marketing and sales. The optimal organisation of the vertical chain has been a significant challenge and enquiry thread in business strategy. Since the beginning of firm theory in the 1900s, as postulated by Coase (1937), the debate revolved around whether firms should be

organised as a single firm (all activities run within a single firm) or should the firm also rely on independent firms across the market.

In simple terms, should firms have a "make-or-buy" mindset? Vertical boundaries speak to the realm of activities the firm performs in-house versus those purchased from independent firms in the market Besanko et al. (2017). Extensive literature typically explains this vertical boundary phenomenon as a static decision and a consistent “horse race” between the firm and the market (Gibbons, 2005). Counterintuitively, historians posit this horse race as a process of response to systemic change over time. Analogously, a firm might win the “horse race” not because the firm is more adaptable than rivals but because the competing firms have not yet arrived at the gates (Histen, 2022).

For example, comparable products in some SAAS industries (e.g. apples, chicken meat, pork meat or potatoes) may undergo vertical expansion into similar manufacturing processes to produce the final product. However, the economic organisation of the firms involved in producing and distributing these similar products might be entirely different (Besanko et al., 2017). For instance, an apple produced by a farmer may result from a single firm controlling all steps of the vertical chain to the consumer. In contrast, another apple may result from several independent firms handling specific steps in the vertical chain. The problem arises in empirically defining which organisation of firms is the most efficient, economical and sustainable, contributing to the complexity problem in SAAS.

During the pre-pandemic era, Vermeulen et al. (2008) documented the need for SAAS and -economists to explore and widen the analyses of theoretical studies about the various forms of contracting and firm organisation. Vermeulen et al. (2008) explained the high level of interconnectedness and the lack of understanding of change and complexity in SAAS by determining that 78.5% of fruit and vegetables procured are coupled to a form of contract agreement, and only 21.5% is acquired through spot markets, imports or agents. The meat and egg industry procurement favours vertical integration and medium to long-term contracts posing unanimous evidence that SAAS prefers a closed market system with contractual agreements (Vermeulen et al., 2008).

1.3 Purpose and significance

According to Williamson (2005), vertical integration is a "paradigm" problem that explains the distribution of firms and markets in contemporary economics. Williamson (1991) argued against other economists and strategic management scholars on the relative importance of strategising vs economising activities in the firm (i.e. being effective vs being efficient). Williamson (1991) claims that economic efficiency is the most satisfactory long-term strategy for firms to organise and operate profitably. Williamson (1991) also stressed the importance of internal and market transaction- and production costs and that firms should align their transactions (costs and attributes) with governance (costs and competencies) in an economising way.

In a world of dynamic change, it is without ambiguity that SAAS must revisit strategic practices and the efficiency of vertical boundaries. Some research indicates a void in empirical evidence and interpretivism of vertical boundary strategies linked to rapid change or uncertainty. Consequently, this project aims to critically extrapolate these links and investigate the vertical boundaries of SAAS firms. More recently, however, there has been an emergence in 2022 of research by academics and business consultancies recommending holistic approaches in a rapidly changing, uncertain and complex environment for firms to develop more resilient, economic, strategic, efficient, and sustainable strategies (McKinsey & Company, 2020).

Additionally, the United Nations' sustainable development goal two (SDG2), ‘Zero Hunger’, as defined by United Nations (2020), recognises the significance and economic value of SAAS. Although SAAS accounted for less than 3% of the country's overall GDP, it was the second-largest contributor to its yearly GDP growth, at approximately 8.3% in 2021 compared to 2020 (Stats SA, 2021). Revisit Figure 1. Henceforth, choosing SAAS to explore and research a dire need for food security becomes critical and serves to bear fruit in the body of knowledge.

In a different context, Baye & Prince (2017) refers to vertical integration, contractual, and market-oriented strategies as constituting the core issues of the economic organisation of firms. This interplay of firms' organisation and the fundamental questions of "how" and "why" firms choose their organisational structures becomes

a critical element of studying the boundaries of firms with direct applications to SAAS firms.

Mishra (2020) posited some lessons for firms to manage their risks during periods of high uncertainty and environmental shocks. Similarly, this report investigates whether firms' current crisis management techniques and tactics need to be revised during and after a black swan event. As a basic example and as a supposition to the third world, developing environment for building resilience, five main pillars of lessons learnt in India and suggested by Mishra (2020) will be analysed: 1) dynamic risk assessment tools to be revisited, 2) substitutes for community action is non-negotiable, 3) risk arises globally, resilience is triggered locally, 4) management of risk changes to the focus on managing uncertainty and 5) management of risk aims to focus on building resilience.

In other words, this report aims to describe how organisations can actively assess economic principles, economise, and ensure optimal efficiency in their organisational strategies in the long-term. Significantly, the aim is to revisit the theories of vertical integration and market structures, map the historical philosophies such as the "Nature of the Firm" introduced by Coase (1937) across the timeline of economics, and compare empirical studies with more modern perspectives. Uniquely, the project aims to concatenate the Invisible-, Visible- and Vanishing hand economic theories to vertical boundary models (Langlois, 2003). See Figure 3 in Chapter 2 for the theoretical timeline of economic evolution related to firms' vertical boundaries.

Finally, the underlying causes of vertical integration and the elements that influence firm boundaries, spot markets, and contractual options receive little empirical attention. Consequently, allowing leadership to give voice to the constant evolutionary mindsets might allow SAAS firms to improve their economic viability and efficiency. This report, therefore, addresses the current state of firms in SAAS and whether it is aligned with the evolution of firms' vertical boundaries in a changing environment.

1.4 Delimitations

The influence of high levels of uncertainty associated with black swan events on the vertical boundary strategies of firms in SAAS will be the focus of this research report's investigation. Due to the sector's size and variety, specific representative industries were selected to investigate the event's impact on SAAS. The selection process is defined and discussed in Chapter 4.

One of the delimitations is that the representative cases or firms selected within SAAS must effectively constitute or represent at least 80% of their business models within SAAS. Similarly, the consequences of vertical boundaries strategies on other firms will be briefly discussed and described. However, the primary objective of this study is to determine how enterprises have moved along the supply chain after a period of shock. Lastly, this movement may have had a conscious or unconscious vast impact on the broader firms' sectors and industries, which will also be highlighted; however, this might prompt further studies and investigation within the agricultural economics and microeconomics field.

As depicted in Section 2.4.1, SAAS will be analysed and evaluated due to the binding nature of food security and future population health. The fruit and vegetable industry representing the horticultural sector of SAAS was chosen to be excavated and described. Together with the poultry, egg, pork and animal feed industries collectively constitute 75% representation of SAAS. This aims to serve as the basis for analysing vertical boundaries and post-pandemic effects in SAAS. One case explicitly chosen for the share of trade in field crops together with Livestock and Horticulture brings the scope of this study to 94% representation of SAAS. See Section 2.4.1.

Chapter 2: Literature review

2.1 Introduction

"Why do firms exist? What is their function, and what determines their scope? These remain the central questions in organisation economics for business executives and corporate strategists" (Holmstrom & Roberts, 1998, p 73).

In the last fifty years, economists have renewed their interest in the economic organisation of firms. Nearly a century ago, Coase (1937) asked the fundamental question regarding why firms exist. He answered that firms exist because of the level and type of market transaction costs compared to production activities carried out in firms. His work was largely neglected until the late 1960s and 1970s, but since then, firms' activities, scope and structure have been central questions in organisational economics, business executives and corporate strategists (Holmstrom & Roberts, 1998).

Today, these questions are still a vital research area (Histen, 2022). Comparatively, historians have seen vertical boundaries as a process that runs over time in response to change (Histen, 2022). One, therefore, needs to envision the firm as a development/formation of evolution. See Figure 3, an attempt to summarise historical theories related to firms' vertical boundaries. Despite economists' belief in utilising market capacity and efficiencies, Coase (1937) claimed that transaction costs might be inefficient in a world of imperfection. As a result, formal organisation and intentional coordination/integration may help to improve efficiency (Holmstrom & Roberts, 1998).

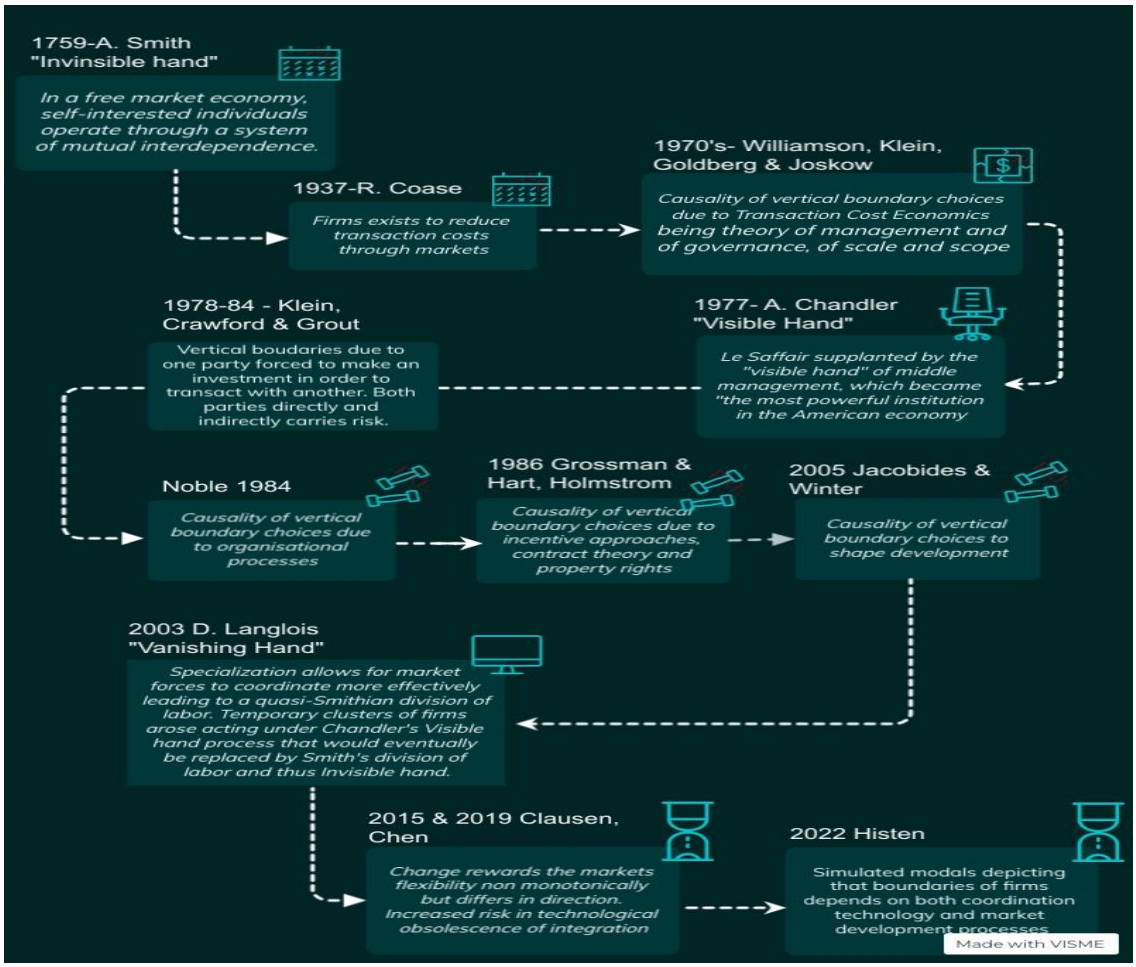
Similarly, Grout (1984), among others, modelled the so-called hold-up problem to demonstrate the value of vertical integration by explaining what happens when a firm undergoes sunk cost in the form of relationship-specific investment. This firm will need a partner firm downstream of a specific process to acquire such a product (the famous example of dies needed to mould steel for car part manufacturing). The partner firm might extract gains by recognising the firm’s relationship-specific investment from its sunk cost and using its bargaining power to drive the price down

at the expense of the firm's profitability. In this instance, vertical integration (backward- or forward-) may eliminate the hold-up problem (Grout, 1984).

However, Holmstrom & Roberts (1998) argue that the vertical scope of the firm depends on more than the hold-up problem and reflects more complex systems of coordination and adaptation in the vertical supply chain. This report will seek to argue whether this theory holds post-pandemic. Figure 3 below provides a timeline of various models of a firm's vertical boundaries, and economic theories of seminal papers and authors refer (Chandler,1993; Chen et al., 2019; Claussen et al., 2015; Coase,1937; Grossman & Hart, 1986; Grout, 1984; Histen, 2022; Jacobides & Winter, 2015; Klein et al.,1978; Langlois, 2003; Noble, 1984; Williamson, 1971).

Figure 3

Theoretical timeline of economic evolution related to firms' vertical boundaries



Note. The researcher created this figure to summarise economic theories related to vertical boundaries. It was adapted from various economic theories, as cited in the text in Chapter 2.

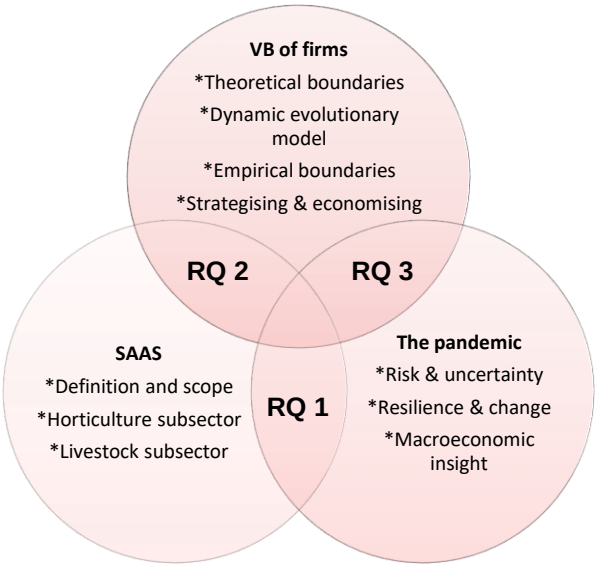
Ownership patterns are affected by, e.g. market monitoring, agency issues, common asset concerns, and knowledge transfer (Bank, 2021). Emerging hybrid firms exist in high uncertainty, high frequency, and asset-specific environments; however, they remain disintegrated. Volatility, fluctuating frequency and interdependency, therefore, appear to facilitate, rather than inhibit, continuous collaboration, moving away from the "buy" narrative (Holmstrom & Roberts, 1998). It is critical to revisit this dynamic aspect of firms in SAAS post-pandemic.

Holmstrom & Roberts (1998) also posited another aspect of efficiency in questioning the validity of considering a transaction when the firm still aims to understand the boundaries in which it operates. Influence is complicated, and strategic considerations will transcend a simple "make" or "buy" modal. Property rights also affect the "make" or "buy" phenomenon and need to be revisited in economic terms (Holmstrom & Roberts, 1998). Contracts and -interdependence as avenues to solve the hold-up problem was also investigated.

Coincidently, Sections 2.2, 2.3 and 2.4 aim to define, summarise, analyse and evaluate the existing literature on the pandemic, and vertical boundary strategies in SAAS, respectively. Figure 4 provides a conceptual framework, facilitating and visualising the literature components' relationships and the intention to analyse vis-à-vis the research questions [RQ].

Figure 4

Conceptual framework; the relationship between the literature review components



Note. Created by the researcher using Microsoft®Word SmartArt design

2.2 The pandemic

Using a difference-in-differences estimating technique to study the economic activity associated with the response to C19, Gu et al. (2020) studied daily electricity usage data for 34,040 firms in China. The study affirmed that the manufacturing, hotel, cultural, sports, and entertainment industries (utilising electricity usage statistics) suffered the most negatively. In contrast, the building, information transfer, computer sciences, software, health care, and social work industries were positively impacted. Private sector firms suffered a more significant loss than state-owned and foreign firms, with small businesses losing an additional 30% compared to their bigger counterparts. However, the impact on firms in the agricultural sector has not been measured in detail; it can be extrapolated that production has been negatively affected. Moreover, Gu et al. (2020) justified the scope for policymaking to give appropriate government aid to businesses worthy of assistance. Emphasis was determined to be on fiscal policy decisions, swift implementation, and the need to assess the long-run impact of C19 uncertainty on the economy (Gu et al., 2020). It serves as a platform for aid recognition in SAAS.

2.2.1 Risk and uncertainty

> As we know, there are known-knowns – these are things we know we know. We also know there are known-unknowns – that is to say, we know there are some things we do not know, but there are also unknown-unknowns – the ones we do not know, we do not know. It is the latter category that tends to be the difficult one. (Rumsfeld, 2002)

The context of uncertainty should be described within a distinct separation between risk and uncertainty. The primary difference between risk and uncertainty is that risk is quantifiable, but uncertainty is neither quantifiable nor foreseeable (Hasa, 2021). Hasa (2021) also described investment risk as the possibility of incurring a loss or, more generally, the actual outcome of an investment will differ from the expected outcome, including both negative and positive risks. On the other hand, uncertainty is regarded as the absence of knowledge regarding events: their occurrence and outcomes are unknown. As Hasa (2021) established, risk can be calculated using probabilities and quantified in advance using evidence from the past or forward-

looking methodologies such as Monte Carlo simulation and other algorithmic processes. In finance and business, uncertainty refers to the inability to foresee outcomes or consequences due to a lack of data or knowledge, which renders prediction impossible (the unknown-unknowns). There are many conceivable outcomes, but neither their occurrence nor consequences are known (Hasa, 2021).

Marceau et al. (2019) addressed decision-making in the setting of profound uncertainty, citing the need for a paradigm that is not focused on forecasts of the future (known as the "predict-then-act" paradigm) but instead seeks to "watch-and-adapt" (in order to prepare for uncertain events). Watch-and-adapt entails observing how the future unfolds and permitting adaptations when new knowledge is obtained through time, therefore implementing long-term strategies (Marchau et al., 2019). The "watch and adapt" paradigm openly admits and emphasises the need to account for substantial uncertainty in decision-making for unpredictable occurrences and long-term changes.

Walker et al. (2012) provide a notable exception pre-2019, discussing decision-making under extreme uncertainty. However, research in this area in recent years has been re-embarked. New methodologies and technologies are being tested in practice. Regarding the theory, new analytical tools (e.g., exploratory modelling, scenario discovery) and procedures (e.g., adaptive approaches) for managing extreme uncertainty have been developed (Marchau et al., 2019).

Change anticipation, experimentation, exploration, and adaptation are essential for future decision-making under deep or fundamental uncertainty (Arthur, 2019). In these circumstances, “optimal” or efficient behaviour is not well-defined (Arthur, 2019), and these coping strategies become much more complex, causing anxiety or shock when attempting to adapt in the short run to prepare for long-term, uncertain events(Marchau et al., 2019). Marchau et al. (2019) further explain that decision-makers, leaders and analysts are losing confidence in their ability to accurately predict future changes (technological, economic and social). Future changes in the system and the multiplicity and time-varying preferences of system stakeholders are adding to a level defined in the seminal book as deep uncertainty (Marchau et al., 2019).

Marchau et al. (2019) similarly note that decision-making and planning regarding the effects of mega-scale infrastructure projects, future energy sources, genomics in health care, the effects of climate change, and the demand for alternative transport methods should all take into account the profound uncertainty that exists. Similarly, consider unusual occurrences like natural disasters, financial crises, and terrorist attacks (Marchau et al., 2029).

Consequently, in a rapidly changing world, the pursuit of predictions and dependence on the analytical tools that necessitate them can be counterproductive and even harmful (Marchau et al., 2019). Notwithstanding, Marchau et al. (2019) demonstrated Robust decision-making (RDM) as a collection of concepts, techniques, and supporting technologies that employ computers not to provide more accurate forecasts but to make better judgments under extreme uncertainty. The capacity of RDM to represent varied worldviews and ethical frameworks helps improve how firms utilise and convey analytics for unforeseen problems. RDMs are solely mentioned in this research project to allow the reader to recognise attempts to improve efficiency during periods of extreme uncertainty.

2.2.2 Resilience and change

“Resilience, grit, *nyamezela*, doesn't just happen. To get it done and get through it speaks to how much you want it, and that requires real passion” (Van Kets, 2022).

After periods of shocks and crises, policies often set antennas toward pulling the correct levers to get the economy to move in the correct direction, consequently disregarding how systems interact and how leadership decisions affect efficiency and cascade inefficiency (Hynes et al., 2020). A firm's response is considered a reaction to the response of the entire system to the incentives that individual firms offer, combined with an adaptation of behaviour linked to these responses, instead of the classic Newtonian viewpoint of "one action leads to one reaction" (Hynes et al., 2020). Consequently, the world's delivery of goods and services has shifted to bounded, nested-, linked- and interactively complex systems.

Similarly, according to Nilakant et al. (2014), while leadership and engagement had a critical impact on adaptive resilience, collaboration and learning were the catalysts

that promoted continuous resilience, particularly in the public sector. In addition, culture is recognised as the most neglected topic in the study of risk and resilience when risk and resilience are combined (Feldman & Masalha, 2007). According to (Panter-Brick, 2015), resilience is the act of mobilising resources in the face of significant adversity to achieve one's objectives. However, research on resilience and culture yields limited insights when culture is seen as a single predictive component (Panter-Brick, 2015).

Correspondingly, Hynes et al. (2020) also unpacked two philosophies which described increases in resilience/ buffers to threat. The first historical view is to, by all means, prevent the threat, or if prevention is not possible, mitigate, withstand, and absorb the consequences. However, this approach is ineffective as failures may cascade rapidly in the current world of complexity, and in turn, resources to mitigate the complexity would be costly (Linkov & Trump, 2019). The second philosophy accepts uncertainty, unpredictability and randomness of threat, thereby tackling uncertainty by building system resilience and focusing on the world of disruption to absorb, recover and adapt all systems to survive in the future. This approach uses opportunities to bounce forward (Linkov & Trump, 2019). See Figure 5 below, showing typical systemic responses to risk and uncertainty.

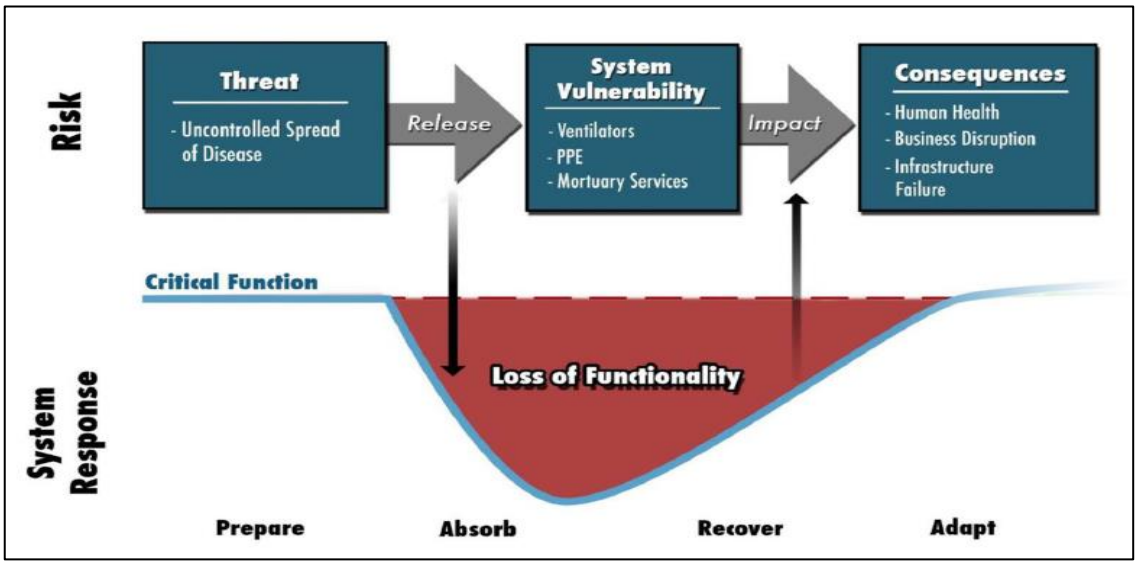
Hynes et al. (2020) argue that crises are non-repetitive. Complacency is repetitive and causes the business environment to believe it can manage and contain future crises (e.g. SARS vs the latest C19). However, anticipation and foresight only give us insight into how future occurrences might significantly affect the business environment. Hynes et al. (2020) conclude the argument that shocks due to vast interconnectedness may be induced from unrelated sectors. Similarly, anticipating all possible threats will be difficult; therefore, systems must instead be designed to be adaptable and resilient and to build capacity regardless of the challenge on the horizon. Figure 5, therefore, ties in with the theory of Histen (2022) that implies that the market loses functionality during vulnerability; however, when the market recovers and adapts, the firm's internal functionality may, on the contrary, be at stake.

One could argue that the "unknown unknowns" could open the door to an additional investigation into this phenomenon. The literature poses ample enquiry into firms

being able to prepare for the future effectively and efficiently and whether the current capacity is proportional to the future capacity. This research project on firm boundaries should better understand sustainable firm capacities and the firm's environment as a complex system.

Figure 5

Systemic responses to risk and uncertainty



Note. Hynes produced this figure in 2020 to showcase the latest theory of system responses after Covid 19. From "Bouncing forward: a resilience approach to dealing with COVID-19 and future systemic shocks" by Hynes, W., Trump, B., Love, P., & Linkov, I. (2020) *Environment Systems and Decisions, 40(2),* 174-184.

2.2.3 Macroeconomic insights

The arguments of macroeconomic principles are complex and difficult to summarise. They are not included within the scope of this research, as the report focuses on microeconomic issues of a firm's economic organisation. However, it is noteworthy to acknowledge the complexity of the firms' organisation within a global system in a macroeconomic environment.

Exciting and recent topics to explore in the macroeconomic environment, especially considering the global impact of firms, are worth mentioning. Slowbalisation (when nations go from a single to several trading partners and local manufacturers) and the “Amazon effect or Alibaba effect” (acceleration of the metabolism for business,

shortening the supply chain, building rapid innovation loops) are a few examples of C19 worth exploring in the realm of vertical boundaries. In a recent podcast reflection, Desai (2022) practically stated that recession fears and market meltdowns are drama-related macroeconomic effects that firms experienced during and after C19. That change anticipation is critical for decision-making in the long run.

2.2.4 Summarised evaluation

The primary difference between risk and uncertainty is that risk is quantifiable, but uncertainty is neither quantifiable nor foreseeable (Hasa, 2021). Uncertainty is not quantifiable and allows for unknown unknowns, which means that companies need to change their adaptability approaches, causing companies to move away from prediction and action towards “Watch-and-adapt” approaches. “Watch-and-adapt” entails observing how the future unfolds and permitting adaptations when new knowledge is obtained through time, therefore implementing long-term strategies (Marchau et al., 2019). Marchau et al. (2019) demonstrated Robust decision-making (RDM) as a collection of computer-based tools to assist in long-term judgement efficiencies under deep uncertainty.

“To be resilient, you need to want it, which requires passion.” (Van Kets, 2022). This notion speaks to companies’ willingness to accept long-term existence, which relates directly to the argument of Williamson (1991), which states having an economising (long-term efficiency) strategic mindset. Histen (2022) implies that the market loses functionality during vulnerability; however, when the market recovers and adapts, the firm's internal functionality may, on the contrary, be at stake.

One could argue that the "unknown unknowns" could open the door to an additional investigation into this phenomenon. The literature poses ample enquiry into firms being able to prepare for the future effectively and efficiently and whether the current capacity is proportional to the future capacity. This research project on firm boundaries should better understand sustainable firm capacities and the firm's environment as a complex system.

2.3 The vertical boundaries of the firm

2.3.1 Theoretical boundaries

Besanko et al. (2009) argued the vertical boundary concept as perceived decision-making within the vertical chain flowing from upstream suppliers to downstream producers and retailers (all-inclusive of processing, handling, distribution and professional support functions, e.g. planning and accounting), organised in an array of activities. The problem of uncertainty, however, remains; whether firms should perform specific or all activities themselves or allow activities to be done by independent firms (Besanko et al., 2009). In this context, historically and theoretically, this question remains a static bidirectional narrative.

Figure 3 visualises theoretical economic lenses about the firm's vertical boundaries. Transaction cost economics and vertical integration are traditional theories by nature and were first developed in the 1930s. Coase (1937), as the father of the "Theory of the Firm", argued that previously neglected constraints on the trading process might lead to intra-firm rather than inter-firm transactions ("make-or-buy" concept). In the strategic management literature, Harrigan (1986) stated that vertical integration is the strategy of firms to provide goods or services in-house instead of purchasing them from outsiders.

A revived approach by economists emerged in the early 1970s when Williamson (1971) studied the factors that lead to firms' focus on internal organisation strategies versus firms' market transaction strategies (i.e., boundaries of firms and spot markets versus boundaries of firms and vertical internal integration). In addition, he advanced the argument that transaction cost economics is fundamental in the theory of firm governance and how firms manage their supply chains (Ketokivi & Mahoney, 2020). These ideas were critical for analysing vertical boundaries but will not be studied in singularity in this research project.

Conversely, Klein et al. (1978) reevaluated the dangers of post-contractual opportunistic firm behaviour. As assets grow more specialised and appropriate quasi-rents arise, contracting costs tend to increase more than the costs of vertical integration. Vertical integration is hence more likely to occur, all else being equal.

Leading up to the narratives remarked by Harrigan (1986) that firms should scan outsiders regularly to determine if operations can be done more cost-effectively than in-house activities. If vertical integration strategies result in exit barriers and cash traps rather than reliable sources of resources and markets, Harrigan (1986) predicted that broad vertical integration would give way to narrower vertical integration as sectors mature. Finally, according to Joskow (2010), vertical integration strategies have led to antitrust-related issues that have attracted much attention in antitrust laws in the United States and the European Union.

Lately, Histen (2022) depicted that firms' boundaries depend on market development and coordination technology and uniquely argues that firms can manoeuvre around change more efficiently; however, as change or uncertainty lessens/weakens, markets surpass and outperform firms in the long run. Correspondingly, this concept is linked to the latest evolutionary lens, the Vanishing Hand (Langlois, 2003). As shown in Figure 3, specialisation allows market forces to coordinate more effectively. Recently, it has been postulated that firms should have a systemic mindset that equates to how environmental changes can affect firms' systemic outcomes (Histen, 2022).

Furthermore, vertical integration benefits when many supply chain changes cause a cascade of disruption and need to be merged or redefined. At this stage, the market is at a disadvantage because it would be challenging to price activities; time is a constraint in readily acquiring information and activities among firms must be merged (Baldwin, 2008). Histen (2022), in conjunction, depicts how, as uncertainty weakens (certainty strengthens; therefore, in-house innovation tend to steer toward autonomy), markets become more attractive and efficient (have more technological and specialised offering).

Besanko et al. (2017) allude to three main theoretical flaws frequently associated with whether a firm should make or buy. These flaws should be acknowledged to eliminate industry inefficiencies. First, firms must buy rather than make to avoid suffering the particular costs themselves; this is not the case because the firms purchased from the activity are also experiencing costs and will charge the right price. Second, instead of buying, firms should maximise profits in-house and avoid independent firms; this is not the case as these profits are necessary to attract

investments. Lastly, vertically integrated firms can produce an input at cost, being advantageous over firms that need to buy at market-level input prices; this is not the case as it ignores the opportunity cost of sales in the market because it is using the input at that stage (Besanko et al., 2017).

2.3.2 Dynamic evolutionary models

Histen (2022) used an agent-based simulation model to study the trade-offs of firms responding to dynamic change. By analysing the vertical integration response of firms, he postulated that boundaries are dynamic; large firms can navigate change in systems more efficiently when markets are slow to emerge. Similarly, large expenditures in logistics and technology have caused advancement in the retail industry, e.g. logistical and technological specialisation, hence increasing entrance hurdles for small firms that cannot envisage investing on a large scale (Basker & Noel, 2013).

Conversely, integrated firms will be displaced by smaller networks that outperform the vertical integration structure over a more extended period (Histen, 2022). Argumentatively, Histen (2022) described the transition of coordination, adaptation and firm boundaries as interdependent; the market develops because of integrated firms, and comparatively, integration depends on market developments. Figure 6 depicts the long-run vertical boundaries of the firm and how firms respond to iteration/perturbation periods over the long run.

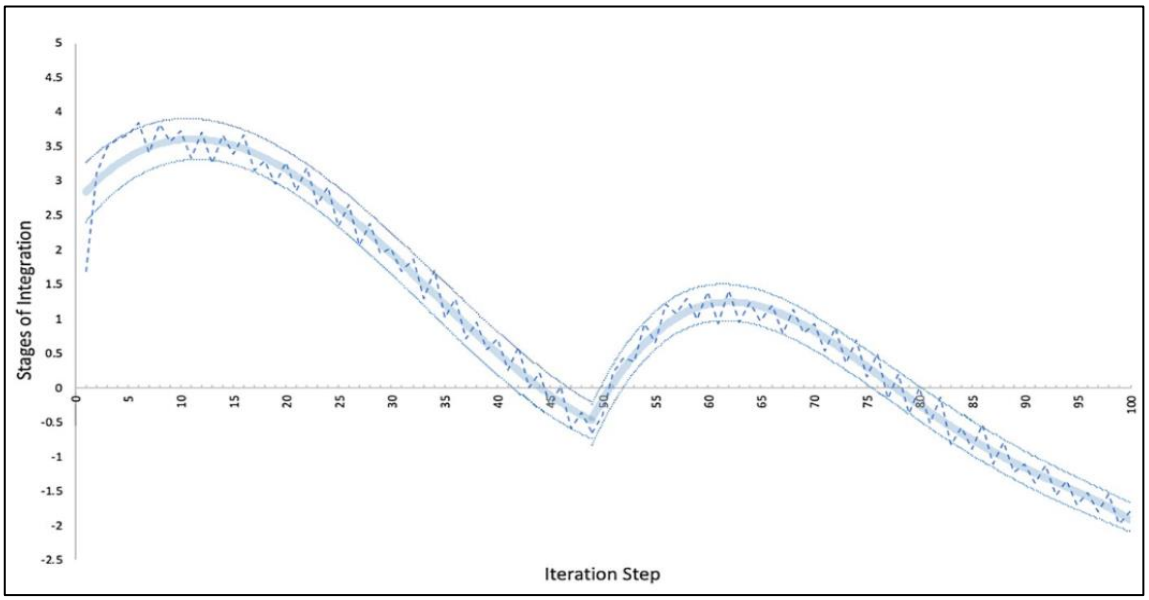
Systemic uncertainty cause firms to retract and integrate, outperforming the market as per Chandler (1993), portraying management's preference for in-house coordination and centralisation. However, as markets stabilise and supply chains adapt to the higher integrated firms, fewer integration results from the stable production and capability in the market (Simon, 1960). The dashed lines resemble consistent trade-of and competing effects in Figure 6 below.

Dynamic capability theory will add scope and clarity to this section (Teece et al., 1997). Teece et al. (1997) defined dynamic capabilities as the firm’s capacity to integrate, develop, and restructure internal and external skills in response to fast-changing circumstances. Given route dependencies and market positioning,

dynamic capabilities, therefore, represent an organisation's capacity to attain new and novel types of competitive advantage (Teece et al., 1997). Histen (2022) does not refer to dynamic capabilities in his paper, yet it aligns with concepts presented within the evolutionary scale of the firm.

Figure 6

Stages of firm integration responses to perturbations and periods of uncertainty



Note. Histen produced this figure in 2022 in an agent-based simulation model. From "The extent of the firm" by Histen, M. J. (2022), *Evolutionary and Institutional Economics Review*, 1-23.

2.3.3 Empirical vertical boundaries

“A bishop in hand is worth less than a rook, but the position on the board matters” (Histen, 2022, p.18).

The static approach to firms' vertical boundaries makes way for the boundary alternative over time. Alternatively, Histen (2022) regarded vertical integration as tremendously dynamic, even when internal governance and external transaction costs are constant. This illustrates that the typical narrative is incomplete. The literature on transaction costs tends to emphasise organisational design as a choice of firms or markets as fully developed and available choices, ignoring the critical role played by the market institution as a gradual process (Histen, 2022). Finally, the

firm's boundaries cannot be determined solely by static transaction cost factors (Histen, 2022).

Therefore, history posits firms' organisations as a choice of the market or the firm as a complete and available alternative (Histen, 2022). Vertical integration is contingent on both coordinating technology and market growth. However, this omits the dynamic institutional adaptation over time, as presented in the NK model by Histen (2022). Although the NK model extends beyond the scope of this research, it is necessary to identify it as a mathematical, agent-based simulation model constructed to depict market evolution caused by new entrants and firm innovation, emphasising a better understanding of complex organisational phenomena (Arend, 2022).

For this reason, a lack of empirical data becomes evident; however, a few are identified across sectors. Production was designed by chemical processing itself until later when specialised engineers originated due to market boundaries (Arora et al., 2001). Similarly, the computer industry, banking, pharmaceutical, and broader industrial studies were all initially highly integrated, then later decentralised, with various outsourcing and regularly contracted (Langlois, 2003).

2.3.4 Strategising and economising

Williamson (1991) is a prominent seminal author in challenging the conventional neoclassical economics approach to the firm's organisation and some strategy literature. Business strategy is a complex topic. It encompasses the functional areas of marketing, finance, manufacturing, and international business; however, it is also multidisciplinary, incorporating economics, politics, organisation theory, and legal concerns. The importance of business strategy has increased with the expansion of multinational corporations and international commerce and competitiveness (Williamson, 1991).

Williamson (1991) stipulated several distinct approaches to the substantive components of business strategy, and the major contenders cluster under two broad categories: strategising and economising. The strategy emphasises power, while the economy focuses primarily on efficiency. Both of these perspectives are relevant to

the study of business strategy, but the role played by power approaches(strategy) in modern literature belies their relative significance and value.

It is believed that the efficiency (economising) examination has advanced to the point where no more work of this sort is necessary. According to Williamson (1991), the general argument globally is that we don fully grasp strategy. Numerous new tactics and concerns fall under the strategy domain, but the most pressing realities of international competitiveness are also said to be strategic.

However, in total contradiction to these claims, Williamson (1991) postulated that while it is true that efficiency analysis of the firm-as-production-function genre has reached a high level of sophistication, this does not exhaust all significant aspects of the evaluation of efficiency. The comparative economic organisation (governance) analysis is still in its infancy, whereas the efficiency analysis incorporates production and governance costs. Moreover, Williamson (1991) advocated that, compared to strategy, economising is significantly more essential because strategising is primarily applicable to firms with market power, which constitute a small portion of the total (ephemeral market advantages ignored). Further, Williamson (1991) implied that planning and strategising endeavours would rarely be successful if a program is burdened by major manufacturing, distribution, or organisation cost excesses. All the ingenious ploys and positioning in the world will rarely save a severely defective project in first-order economising considerations.

Williamson (1991) consequently argued that the economy is more fundamental than strategy, or, to put it another way, claiming that the economy is the best strategy. Similarly, this remains the core message of transaction cost economics. The emphasis of top leaders on economising restores production and merchandising to a prominent position inside firms and on academic research agendas. Therefore, unambiguously, economising and strategising are not mutually exclusive.

Finally, strategic manoeuvres can be used to disguise economic weaknesses. More frequently, intelligent strategies can achieve cost-effective outcomes. Williamson (1991) suggests that students of economic organisation would be better served by focusing on more prevalent economising difficulties, such as harmonisation, credible

commitments, adaptation, and discriminatory alignments. It is vital to set and maintain clear priorities between strategising and economising.

2.3.5 Summarised evaluation

The static approach to firms' vertical boundaries makes way for the boundary alternative over time. Alternatively, Histen (2022) regarded vertical integration as tremendously dynamic, even when internal governance and external transaction costs are constant. This illustrates that the typical narrative is incomplete. The literature on transaction costs tends to emphasise organisational design as a choice of firms or markets as fully developed and available choices, ignoring the critical role played by the market institution as a gradual process (Histen, 2022). Finally, the firm's boundaries cannot be determined solely by static transaction cost factors (Histen, 2022).

In an ever-changing environment, such coordination necessitates transferring information beyond what can be conveyed by pricing (Langlois, 2003). Markets, hierarchical networks, and other organisational forms reflect different governance systems for disseminating rich information in support of the innovation and quality coordination. In addition to protecting against some types of change, ambiguous boundaries can create the circumstances for the emergence of new organisational structures (Langlois, 2003). Histen (2022) depicted that firms' boundaries depend on market development and coordination technology and uniquely argues that firms can manoeuvre around change more efficiently; however, as change or uncertainty lessens/weakens, markets surpass and outperform firms in the long run. Correspondingly, this concept is linked to the latest evolutionary lens, the Vanishing Hand (Langlois, 2003). As shown in Figure 3, specialisation allows market forces to coordinate more effectively. Recently, it has been postulated that firms should have a systemic mindset that equates to how environmental changes can affect firms' systemic outcomes (Histen, 2022).

Williamson (1991) consequently argued that the economy is more fundamental than strategy, or, to put it another way, claiming that the economy is the best strategy. Similarly, this remains the core message of transaction cost economics. The emphasis of top leaders on economising restores production and merchandising to

a prominent position inside firms and on academic research agendas. Therefore, unambiguously, economising and strategising are not mutually exclusive.

2.4 The South African agricultural sector

“Food is health. Food is national security. Food is job creation. Food is economic growth” (Shepard, 2021).

In SA, the food and agro-processing subsectors are controlled by large firms and have been marked by considerable anticompetitive behaviour (Cramer & Chisoro-Dube, 2021; Greenberg, 2016). Given the prevalence of vertical integration and oligopolistic market structures in many disciplines of agro-processing, it is essential to identify and appreciate the entry and expansion barriers in these markets, which in turn may affect innovation in the industry (Nkhonjera, 2020). Analysing the dynamics of entry and competition in food-processing value chains is crucial for expanding markets and encouraging economic participation (Nkhonjera, 2020).

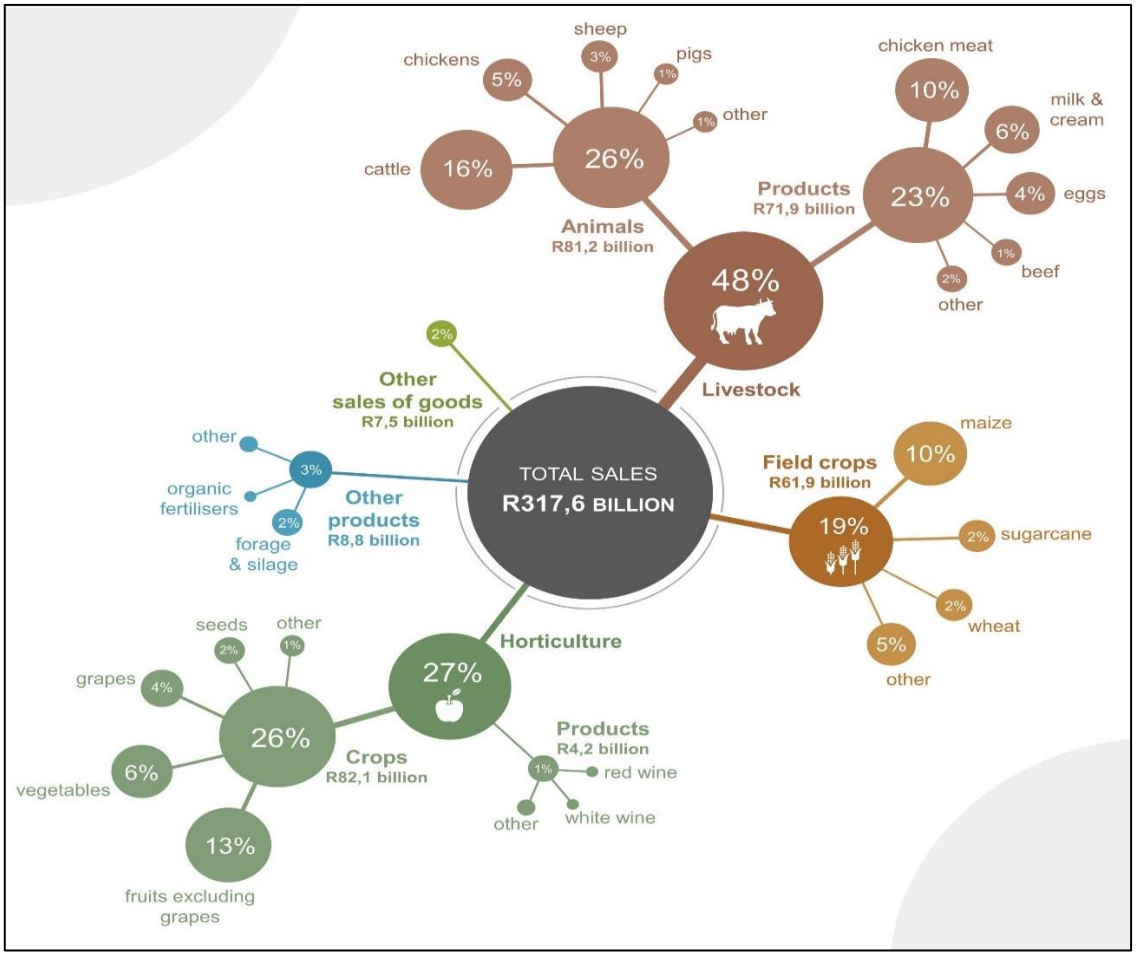
2.4.1 Definition and scope

In SAAS, recent peer-reviewed published literature and empirical data defining the industry statistics and intricacies are not readily available and seem scattered. However, as depicted in Figure 7 will be analysed and evaluated due to the urgent nature of food security and future population growth and health in the realm of global warming and climate change.

The fruit and vegetable industry was chosen to be investigated and analysed since it represents the horticultural sector of SAAS. Together with the poultry, egg, pig, and animal feed industries, these subsectors jointly comprise 75% of SAAS. One scenario chosen explicitly for the percentage of the trade of field crops, along with Livestock and Horticulture, raises the representation of SAAS in this study to 94%. This representation of SAAS aims to examine the consequences of vertical boundaries and the aftermath of the pandemic in SAAS.

Figure 7

Sales of goods that drive SAAS, 2019



Note. Stats SA created this infographic in 2019. From "The goods that drive SA agriculture" by Statistics South Africa. (2021, May 21) https://www.statssa.gov.za/?p=14370

“While we are downbeat about South Africa’s agriculture growth prospects this year, we are not suggesting that the sector is in bad shape per se" (Sihlobo, 2022, para. 8).

The question remains whether SAAS understands bad shape now vs bad shape in the future, whether SAAS is indeed in an economising or strategising shape, and whether optimal thinking is deployed within SAAS, being recognised as one of Africa's most diverse and advanced economies. For this reason, it is imperative to note the industry's size, position and general statistics regarding the growth and firm positioning.

The United States International Trade Administration [ITA] undertook outstanding work and produced frequent reports on ties between SA and the United States; consequently, summarised statistics would be based on ITA to provide a comprehensive perspective of SAAS. According to ITA (2021), SAAS is market-oriented, complex and varied and includes the production of all significant cereals (excluding rice), citrus, wine, oilseeds, deciduous and subtropical fruits, sugar, and the majority of vegetables. Livestock output includes cattle, dairy, well-developed poultry and egg industry, swine, and sheep. Among other food products, slaughtering, processing, crushing, and refining are developed specialisation, adding value across all sub-sectors of value chains of SAAS (ITA, 2021).

Between 2019 and 2020, the total income of SAAS will have increased by 3.9%, according to Stats SA (2020). Earnings were R356.8 billion in 2019 and R370.7 billion in 2020. Animals and animal products generated the largest revenue (R151,8 billion) in 2020, according to Stats SA (2020), followed by horticultural crops and products (R91,4 billion) and field crops (R65,0 billion). Finally, Stats SA (2020) reflected that the category with the greatest growth was "animals and animal products" (2.8%), followed by "field crops" (2.2%) and "horticultural crops and products" (0.2%).

In 2020, the agriculture business contributed around 10% of total export earnings at R185 billion. The most lucrative exports were citrus, wine, table grapes, corn, and apples (ITA, 2021). Additionally, SA produces wool, almonds, sugar, mohair, and pears, to name a few. In FY2020, SA would import agricultural and food products worth R116 billion, a 7% decrease from FY2019, primarily due to the impact of the C19 outbreak. SAAS is, therefore, a net exporting sector (ITA, 2021).

Regarding concentrations, in 2020, 26.4% of total revenue was generated by the 100 largest SAAS firms (based on total revenue). Also reported by Stats SA (2020) was income by business size; in 2020, major enterprises contributed 64.9%, or R240.6 billion, to the entire income, while small businesses contributed 20.4%, or R75.7 billion. Small to medium-sized firms contributed 7.9% and 6.8% to the GDP, respectively (Stats SA, 2020).

In 2020, total expenditures increased to R353,6 billion from R338,8 billion in 2019 (an increase of 5.6%). Total expenditures on new assets amounted to R26.6 billion, a 13.3% increase from R23.5 billion in 2019. The category of land and buildings saw the greatest growth, R2.3 billion (from R5.8 billion to R8.1 billion). Total employment in the SAAS business reached 777 879 at the end of June 2020, an increase of 1.6% compared to June 2019 (Stats SA, 2020).

2.4.2 Horticulture sub-sector boundaries

Vermeulen (2008) indicated that 78.5% of the total volume of fruit and vegetables purchased by agribusiness firms is based on some contracting arrangement, while the remaining volume is acquired via the free market, own estates, agents, and imports. 70% to 100% of the fresh fruits and vegetables offered in SA shops originate from local farmers (often through growing programs). Thus, according to Vermeulen (2008), the evidence documented that the procurement of raw commodities has shifted from the open market to a system of closed market supply with added contractual agreements comparable to the United States and Europe.

Finally, black farmers in 2008 were also contracted; however, they supplied less than 5% of the total procured fruit and veg market. Four hundred fifty-five black contract farmers supplied only 3.6% of the fruit and vegetable industry, and 4 723 commercial farmers supplied 73.9%, indicating the massive opportunity in diversifying the market and firm organisation (Vermeulen et al., 2008). Notwithstanding, respondents at the time had plans to move to more intentional procurement from smallholders to massive commercial farmers. Vermeulen (2008) identified results indicating the dire need for economists to broaden their analysis of various contracting arrangements. Further research on the latest organisation of firms is needed.

2.4.3 Livestock sub-sector boundaries

The feed industry confronts several risks in the listed subsectors. It significantly impacts production costs, contributing, for instance, 80% of production costs in the broiler production chain (Louw et al., 2011).

Nkhonjera (2020) documented the poultry industry's vertical integration challenges as poultry is not just the least expensive source of protein for SA consumers but also the most prominent segment of the country's agricultural industry. Vertical integration tactics are likely to be implemented by poultry firms that wish to enter or expand in the broiler market in order to remain competitive, according to Holland (2011). Vertical mergers can be a faster and more effective method of achieving these goals than going backwards or forwards from the company's primary business. Recent cases before the Competition Tribunal reveal that certain corporations have utilised vertical mergers to achieve this (Holland, 2011).

Louw et al. (2011) investigated feed procurement in the SA poultry industry and found that it is primarily reliant on contractual relationships. Growers are concerned about the chicken business's highly linked and coordinated condition, which impacts economic, pricing inputs, and financial sustainability and impedes innovation and long-term growth. In addition, the cascading effect of power outages in the sector was included as an issue. The competition commission is concerned about the holding company structures of Meadow Feeds (Astral), Epol (RCL), Afgri Foods (PhilAfrica), Nova Feeds (Quantum Foods), and Nutri Feeds (CBH), the top producers in the sector (Louw et al., 2011).

Similarly, Holland (2011) mentioned that the production process of the broiler industry is capital-intensive and asset-specific. As an example of site specificity, hatcheries and breeding farms are usually positioned near broiler farms to decrease transportation costs and the risk of stock death. Holland (2011) similarly refers to breeding and broiler farms that utilise a substantial quantity of fixed production equipment highly specialised for the sector and have little value for other applications. Holland (2011) refers to the broiler coop's automated garbage, feeding, watering, and ventilation systems as prime examples.

Similarly, as maize and wheat are the backbone and staple food for most of the SA population, anti-competitive behaviour has been documented across the grain value chain, including cooperation and price fixing in the final pricing of bread and white maize products (Nkhonjera, 2020). In 2010, new competitors entered the maize milling business with the referral of collusion proceedings. On the contrary,

multinational corporations, small farmers, and expanding processing dominate the dairy industry (Nkhonjera, 2020).

Additionally, Vermeulen (2008) excavated the dynamic example of the pork industry and determined that five firms account for approximately 70% of all activities in the pork processing industry today comprising (E.g. Molare, Eskort, and Lynca Meats). Several contractual agreements exist in the pork processing industry. RTV focus on niche markets and larger abattoirs procure live pigs via spot market and contract with farmers. Processors like Eskort and Molare have strict specifications to determine long-term contracted farmers to produce the exact specifications influencing the quality, price and relationship and leading to entry barriers for pig farmers (Vermeulen et al., 2008).

2.4.4 Summarised evaluation

SAAS is a net exporter of agriculture, highly diverse and seen as the pinnacle of agricultural growth in Africa.

Managing value chains by dominant entities necessitates an awareness of the dynamics at numerous value chain stages, especially for firms looking to enter this market. Effective entrance requires substantial assistance measures that recognise the challenge of entry in the face of vertically integrated, well-established enterprises (Nkhonjera, 2020). The potential for unilateral or coordinated use of market power in each industry is evident. The importance of supported entry, including links to necessary inputs, investment financing and warehousing partnerships, was documented (Nkhonjera, 2020). There is substantial potential for employment recovery, innovation, and expansion if smaller enterprises can effectively compete with larger firms in a more competitive industry.

2.5 Conclusion & limitations

A consistency matrix allowed the reader and the researcher to follow the process of analyses, data collection, and literature review sections to be concatenated with the relevant research questions. See Appendix A.

There is minimal evidence linking vertical integration to realised transaction costs; therefore, qualitatively, it is hard to evaluate the quantitative effects over time. It is challenging to explain broad industry patterns. It seems that initial work done on the boundaries of firms was primarily focused on the hold-up phenomenon, supply chain control and asset specificity (Holmstrom & Roberts, 1998). However, boundaries to ownership serve many purposes, and incentives to investment are also extended in many ways. Likewise, Holmstrom & Roberts (1998) also recognise that empirical data gathering (newspapers, case studies and consulting work) might not be definitive evidence. The interdependence of firms versus industry organisations remains a contradictory approach.

Histen (2022) sheds light on the limitations of models and simulations related to vertical boundaries; the models simplify environments as static, i.e. vertically integrating into uncertain environments versus decentralising in static, more certain environments. However, integration is much more dynamic, even if coordination versus transaction costs are fixed. This research project aims to add to the empirical body of knowledge about how firms cascaded along the vertical chain in the post-pandemic period.

Similarly, concerns about vertical integration strategies, as per Thompson et al. (2013), refers to reducing flexibility, misaligning with the firms' core skills, and increased risk & uncertainty. A decrease in pressure on suppliers to innovate and offer the latest technological components also typically occur.

However, the benefits of vertical integration include backward integration, as per Thompson et al. (2013), which can increase differentiation capabilities, strengthen core competencies, add customer value through new features and lessen vulnerability to powerful suppliers with bargaining power which could typically raise prices at a any given point in time.

Furthermore, benefits also include forward integration, as per Thompson et al. (2013), which allows for better access to end users, improving visibility in the market by setting up local sales agents and enhancing control of manufacturing & distribution channels. Therefore, this research report aims to acquire knowledge about the

benefits and concerns of vertical integration and whether the management of firms has acknowledged these during strategic implementation.

Another fundamental problem was identified: no formal assessments or matrix speak to past governance affecting the current integration state (Argyres and Zenger, 2012). Correspondingly, studies find it difficult to decouple the dynamic interaction of boundaries vs transaction costs (Histen, 2022). This speaks to the postulations of Williamson(1991) that the economy is the best strategy

The intention is, therefore, to address firms' cognisance of frameworks associated with the above vertical boundary constraints and specifically assess fundamental questioning to obtain how often these frameworks are revisited and implemented in the economic sense before making a “make-or-buy” decision. Firms should recognise that accessing the benefits and costs of using market inputs will add value to the economic environment. Forthwith, the literature review has unpacked and revealed three research questions, restated the research problem and guided the necessity to create a model which will assist firms in consistently evaluating the position of adaptation versus coordination in a period of deep uncertainty.

Chapter 3: Research questions

The literature and the significance of the three constructs, namely post-pandemic, vertical boundary strategies and SAAS, were reviewed, evaluated and summarised in Chapter 2. The interdependencies, interrelated effects, and significance of these three pillars were examined. The research intends to primarily focus on SAAS, thereby analysing vertical boundary strategies in a specific time frame: post-pandemic (after a period of shock or deep uncertainty). See Figure 4, which showcases the constructs' interdependences with the research questions. Three main research questions emanated from the literature review analyses. See Appendix A for the consistency matrix, depicting which sections and literature refer to the particular research question.

3.1 RQ 1

How were post-pandemic uncertainty, change and resilience addressed in SAAS?

The first research question emanated from the interest in the short-term effects of a Black swan event, a period of shock, or a pandemic, on the firm's behaviour. Literature proved that firms act significantly, knowingly and unknowingly in times of uncertainty, which is the primary reason to acknowledge change and build resilience (Antipova, 2020; Arthur,2019; Desai,2022; Ding et al.,2020; Feldman & Masalha, 2007; Gu et al., 2020; Hasa, 2021; Hynes et al.,2020; King and Kay, 2020; Linkov & Trump, 2019; Marchau et al.;2019, Mishra; 2020, Reinhart, 2020; Taleb,2007). The aforementioned citations are seminal papers which predominantly spoke to and were used in Section 2.2, the effects of the pandemic. Refer to the consistency matrix Appendix A for additional papers used.

Populated to SAAS, this project aims to qualitatively acquire information and analyse the intangible meaning top management of firms attach to strategies as they react to the period after the pandemic. It also aims to address the firms in SAAS to understand what resilience means and how they perceive resilience. Moreover, whether they are acting knowingly or unknowingly according to the understanding of long-term thinking in this regard. Ultimately, this question aims to add to the body of

knowledge within SAAS, effectively ensuring that food security remains resilient, vibrant, viable, and at the top of the list of decision-makers and policymakers in SA.

3.2 RQ 2

How did post-pandemic vertical boundaries of firms in SAAS evolve?

Following question one and now that the consequences of a period of shock should be defined and established, the dire need for the economic principles of vertical boundaries needs to be excavated and theories tested. The foundation of question two lies in the fundamental reality of firms being organised in a specific manner which influences the microeconomic environment of the firm and the sector in which the firm (Arend, 2022; Besanko et al.,2017; Coase, 1937; Grout,1984; Harrigan, 1986; Histen, 2022; Holland, 2022; Holmstrom Roberts, 1998; Jacobites & Winter, 2015; Joscow, 2010; Ketokivi & Mahoney, 2020; Klein et al., 1978; Thompson et al., 2013; Williamson, 1971; Williamson, 1991). These section citations are seminal papers predominantly used in Section 2.3, the vertical boundaries of the firm. Refer to the consistency matrix Appendix A for additional papers used.

The lens of economic theories, see Figure 3, pertaining to vertical integration and vertical boundary strategies of firms dates to the early 1900s and, therefore, to emphasise these critical economic concepts' relevance, the need for recent and relevant dialogue regarding such evolution and modern stance exists.

3.3 RQ 3

What post-pandemic strategising vs economising narratives resonated in SAAS?

The third question emerged from the research posed by Williamson (1991), which links vertical boundary strategies to the dynamic modelling of long-term impacts vs short-term impacts after periods of shock and uncertainty. There is an apparent lack of understanding of the real impact of this concept. Therefore, the question aims to understand whether there is a link between the vertical boundary strategies of firms and the long-term vision of firms, concatenated with the idea of efficiency versus efficacy (Gu et al., 2020; Harrigan, 1986; Mishra, 2020; Teece et al., 1997; Williamson, 1991; Williamson, 2005). These section citations are seminal papers

which predominantly spoke to and were used in Section 2.3.4, strategising and economising. Refer to the consistency matrix Appendix A for additional papers used.

The implications of qualitative data from such questions can fundamentally alter how firms think, operate and exist. They should answer if a period of shock kindled or hindered top management from reacting and steering the firm to either strategise, economise, or both.

Chapter 4: Research methodology

4.1 Choice of research design

4.1.1 Purpose of research design

The research project undertook an exploratory form, which looked at in-depth detailed insights from the open-ended data. As per Saunders and Lewis (2018), "What?" and "How?" questions reflexively identified and compared post-pandemic vertical boundaries and related strategies of firms in SAAS. It opted to clarify the understanding of the post-pandemic period of uncertainty. Gaining knowledge about resilience strategies or lack thereof in SAAS. Comparatively, the aim was to acquire information and analyse the intangible meanings by which top management of firms attach to strategies as they react to the period after the pandemic. It also aimed to address the firms in SAAS to understand what resilience means and determine whether they are acting according to that understanding.

As summarised by Flick (2018), the purpose was first to recognise the essential components that influenced the construction of this project's design, consequently obtaining knowledge about the most critical designs in qualitative research that had to be investigated. The basic designs were analysed to distinguish between the extremes and their weaknesses. The design had to be selected in the context of the research process, and a clear understanding of the advantages and limitations had to be acknowledged (Flick, 2018).

4.1.2 Philosophy

The philosophy of choice was interpretivism: Collins and Hussey (2013) identified this philosophy as a theory-generating philosophy. It was an interactive method intended to explain the phenomenon from an individual's/insider's perspective giving voice to the interviewees.

It posed to engage smaller data sets in the realm of microeconomics' subjective and dismal world, yet where the truth remained context-dependent. Therefore, the philosophy acknowledged that multiple interpretations of firms' strategic approaches might be evident, prompting intricacies we could not necessarily observe (Pham, 2018). Theories encapsulating vertical boundaries dated back to the 1900s and

evolved dynamically over the last decade; therefore, the research philosophy aimed to explain how resilience was addressed, evolved and shaped post-pandemic thinking. The research posed limitations on empirical data and therefore needed to be placed in context and shaped to subjectively understand the post-pandemic modern era and the genuine social construction of SAAS post-pandemic (Creswell & Poth, 2016).

This study's epistemological goal of interpretivism is to explain the ascribed meanings that senior management in SAAS attach to their firms' activities. Therefore, the upper echelon theory would comprehensively and primarily apply to the investigation (Hambrick, 2007).

4.1.3 Approach selected

The inductive approach complemented this research paradigm and was selected. It related to interpretivism in qualitative research and aimed to build theory by observing post-pandemic incidents and strategic patterns of firms in SAAS. Similarly, due to the iterative nature of economic principles, and vertical boundaries in this instance, fresh eyes were needed to provide a new lens to the theory and understanding of the phenomenon.

Flick (2018) emphasises the contrast to quantitative induction, which concludes a totality based on the quantitative attributes of a sample. Qualitative induction augments the observed characteristics of a sample with those that are not necessarily perceived. This induction surpasses the limits of the sole experience of the sample in question. This inference only broadens our understanding to the extent that it advances from a small sample to a bigger whole (Flick, 2018).

Induction was the optimum approach to qualitatively use uniquely flexible and emerging designers, as per Creswell & Poth (2016). It aimed to rely on theoretical data within the microeconomic context and explore the relationship within SAAS (Saunders and Lewis, 2018).

4.1.4 Methodological choice

A multi-method, qualitative research with an interview guide consisting of open-ended questions was used as primary data collection for this research project (Saunders & Lewis, 2018). It was backed by secondary data collection (non-numerical in essence), emails via respondents and general observations, which gave insights into more detailed analyses and data triangulation to ensure that the intended firm's strategies and vertical boundaries have fully transpired in process.

The aim was to speak to the interrelated phenomenon within firms' vertical boundaries. It will emphasise the post-pandemic process of understanding and addressing resilience due to the lack of empirical data and the evolutionary nature of firms' vertical boundaries—this methodological choice aimed to add trust to the body of knowledge. Interviews, secondary data inside the case, followed by coding and theming of the observations, would be the gist of the methodology (Saunders & Lewis, 2018).

4.1.5 Strategy

Lindgreen et al. (2021) maintain that academics who research business-to-business phenomena seek to characterise complicated occurrences using theoretical frameworks, explain the links between the framework's elements, and offer direction and insight to decision-makers. Unsurprisingly, business-to-business researchers frequently conduct qualitative case studies (Lindgreen et al., 2021).

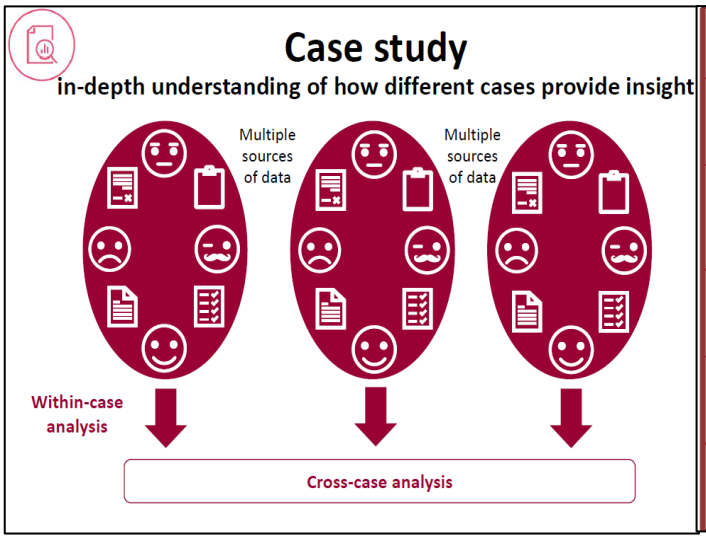
Figure 8 below depicts a multiple case study (cross-case study), which was chosen to be the optimal strategy for this research project as it focuses on understanding the real-life dynamics of a firm and exploring a complex issue within the SAAS setting (Eisenhardt, 1989). The strategy aimed to be embedded, examining only key aspects pertained to the vertical boundaries of firms in SAAS. An in-depth investigation into "Why?" and "How?" firms' post-pandemic vertical boundaries and economic strategies evolved drove the excavation of a complex issue by utilising multiple perspectives from different sub-sectors in SAAS (Saunders & Lewis, 2018).

As per Lindgreen et al. (2021) rationale, cases were explicitly selected, instruments and protocols meticulously crafted, and data carefully analysed. It was essential to comprehend and explain the phenomena of vertical boundaries in microeconomics and demonstrate the generalisability of results to SAAS. Upper echelon theory has comprehensively and primarily applied to the investigation within cases as they drive strategic thinking of the firm. Respondents (top management), who have experience in the industry for many years, occasionally shared insights prior to C19, which conceptualised the entire narrative/ social story, consequently studying the phenomena within its context (Yin, 2003).

See Sections 4.2 and 5.2 for detailed sample and case descriptions of this research project.

Figure 8

Aspects of a multiple case study strategy in qualitative research design



What is it?	Detailed investigation to explore complex issues. Best for 'how' or 'why' questions
When to use it?	When you want to answer research questions through in-depth analysis and multiple perspectives
How to sample?	Select cases for their ability to illustrate (or contradict what you are studying. Then select respondents and secondary data inside the case
How to collect data?	Typically secondary and primary data, multiple respondents within the case to provide holistic description / triangulation
How to analyse data?	Within case and cross-case analysis to identify key themes
How to report	Rich, holistic description of triangulated data that describes

Note. Myres produced this figure in 2022 to showcase the intricacies of a case study strategy in qualitative research. From "Qualitative research skills by Myres, K. (2022), Gibs Blackboard, https://gibs.blackboard.com/ultra/courses/_5624_1/cl/outline

4.1.6 Time horizon

Lindgreen et al. (2021) allude to case studies ideally suited for addressing processes, change and transformation concerns. However, longitudinal research is challenging due to difficulties of access, time commitment, and the sheer volume of data

generated. Therefore, this project gauged a cross-sectional approach and studied the post-pandemic economic strategies of firms in SAAS at a given time based on the respondent's feedback at a particular time (Saunders & Lewis, 2018). The project was not concerned with observing responses over time, and the strategy was chosen based on time- and resources/ network availability within SAAS.

See Appendix B for a detailed project plan which was constructed at the onset of this research project and followed and completed as planned.

4.2 Research methodology

4.2.1 Population/selection of the case

Refer to Sections 2.4.1 & 5.2 and revisit Figure 7, which depicts the baseline assumptions and infographic of the SAAS in conjunction with Table 2, which serves as the summary of cases and respondents framed and selected.

The population comprised all firms in SAAS. The nominated target population was selected as the top ten firms in SAAS to holistically depict the most successful entities and represent a generalisable selection of SAAS. Furthermore, the aim was to analyse three of the top five firms in the livestock sub-sector within SAAS (nominated on a per annum revenue basis) and three of the top five firms in the horticulture subsector within SAAS (nominated on a per annum revenue basis). This approach aims to provide holistic insight into the different sectors of SAAS and whether synergies, similarities or opposites within SAAS could be detected.

Access to firms in these two subsectors (regular contact with current clientele and networks) proved beneficial as opening up firms to share intel regarding strategies was challenging. However, it was with confidence and delight that two of the top five horticulture (fruit and veg firms) were selected and permitted to participate. Four of the top 5 firms in the livestock subsector were selected and permitted, two of which were selected specifically for the level of integration and two for the level of trading and cross-border sales.

These combined cases represented 94% of SAAS. According to base studies conducted for case study analyses, 3 –5 participants are considered to be sufficient

in case studies sample sizes (Creswell & Poth, 2016). These selected cases collectively honoured the diverse narrative regarding their level of integration or buying versus selling strategies, geographical position (nationally and internationally), supply chain intricacies and size of the organisation, which allowed for a thorough exploration of RQ1-3.

Similarly, Hill et al. (1997) recommended that researchers randomly pick from a homogeneous population who are extremely informed (preferably with recent experience) about the topic being studied. These rules have been therefore adhered to in this study.

Alternatively, Lindgreen et al. (2021) highlight the relevance and value of proper sample collecting. First, the context was established, as noted in CH1&2; and an indication of how this project will contribute to theory within the context was provided, such as through replication of prior findings, expansion of existing theory, identification of theoretical sub-groups, or illustrative examples of positive and negative scenarios (Lindgreen et al., 2021). Second, attention was made to how the chosen research environment will facilitate theoretical advancements and whether these findings can be replicated. Finally, clear and defined requirements for firms and respondents were stipulated. (Lindgreen et al., 2021).

4.2.2 Unit of analysis

The unit of analysis was post-pandemic vertical boundary strategies at the six firms' or cases' levels. Selecting various organisations in SAAS provided meaningful insight and a significant and defensible sample frame.

4.2.3 Sampling method and size

Non-probability, purposive sampling enjoyed the highest priority with maximum variation as the strategy to engage in a wide range of company complexities (Miles & Huberman, 1994). Top management served as the respondents; therefore, the sample elements comprised upper echelon theory (leaders/decision-makers in the six selected cases), as per Hambrick (2007). Initially, the intent was to nominate middle to top-level management to establish the company's diversified nature, as per

Nishi et al. (2007). However, it was observed that this approach was more detailed than what was needed within a limited time. Also, see Chapter 5 for a sample description and the summary is in Table 2.

While there are no clearly established guidelines for sample size (Patton, 1990), qualitative research sampling typically relies on small numbers to investigate in depth and in great detail (Tuckett, 2004). To achieve a high level of data regarding a particular occurrence, the sample was purposefully and not arbitrarily selected (Tuckett, 2004).

Henceforth, the selection criteria for participants can be summarised as follows:

- Leaders (top management),
- > 5 years of experience,
- SA livestock industry of SA horticulture industry.

Cases were carefully and specifically selected based on the level of integration, size, sector and sub-sector. Key issues were identified within each of the subsectors, and an outlier case was explicitly identified due to the level of this integration. See Chapter 5. Respondents within each case had to meet the selection criteria for participants.

4.2.4 Measurement instrument & data gathering

Appendix C depicts the interview guide consisting of a detailed pool of open-ended questions related to each construct. The interview guide was split into three sections to facilitate axial group and theme flow emanating from the answers.

As in a typical qualitative study, the indirect measurement instrument was the interviewer, as senses and opinions are used to obtain, interpret and analyse the responses and data (Maxwell, 2012). Therefore, the direct measurement instrument primarily took the nature of a simple one-page interview guide consisting of semi-structured open-ended questions, focusing on key questions or themes related to the research questions. See Appendix C for the sections. The idea was to incorporate the grand narrative (big open-ended questions) to engage as much as possible with the highly recognised interviewees (McCracken, 1988). For this reason, questions

were as open-ended as possible, and not all questions would typically have been covered within approximately one hour as some of the questions overlap.

Confidentiality was offered, and the interview guide (Appendix C), together with the permission letter (Appendix D) and consent letters (Appendix E), was sent to all identified respondents prior to engaging and booking a formal interview. At the onset of the interview, all respondents agreed to have the sessions recorded. Interviews were automatically recorded and saved on the Microsoft®Office 365 -Teams or -OneDrive cloud platform within a password-protected and encrypted folder. Microsoft Excel was used to summarise case and respondent interview dates. See Table 1 below.

Table 1

Interview summary; date, duration & word counts

Respondent	Date	Duration (min)	Word count
i	05-Sep-22	57.11	4216
ii	06-Sep-22	68.38	N/A
iii	21-Sep-22	48.26	3576
iv	23-Sep-22	70.40	5272
v	23-Sep-22	36.37	2350
vi	12-Oct-22	46.09	3206
Total		**326.61**	**18620**

Note. Created by the researcher.

Interviews were conducted via the latest version of Microsoft® Teams with access to camera facilities to make it more personal and engaging. Windows® 11 Business programming and i7CORE processor, together with fast fibre data line speed, allowed for minimal interruptions ensuring clarity of interviews.

See Appendix C. The interview protocol followed a simplified approach as per Jacob & Furgerson (2012): 1) write about an exciting topic, 2) the research guided the questions, 3) a script was being used, 4) questions will be open-ended, 5) the interview started with background and basics, 6) questions was arranged from easy to complicated, 6) "tell me about", “how” and “what” was used regularly, 7) prompts

as sub-questions assisted the golden thread 8) adjustments and notes as new questions arose was documented and added to the data 9) the durations averaged between 1hr to 2 hrs, and 10) follow up interviews/ email correspondence eliminated any uncertainty (Jacob & Furgerson, 2012). The recordings were then imported into ATLAS.ti 22 for analyses and linked to the transcriptions, which Microsoft® Teams automatically transcribed. Explained in Section 4.2.5 below.

Secondary data collection aimed to drive triangulation (Patton, 1990). The associations of which the respondents' firms' are members, e.g. The Animal Feed Manufacturing Association (AFMA) and Bureau for Food and Agricultural Policy (BFAP), and the relevant firms' websites concatenated the respondents' insights to the theory to gain an understanding of the data points and comprehensively enhance quality. Additionally, Microsoft® Outlook was used after the interviews to obtain more in-depth secondary data regarding the specific cases and the firm. Secondary data collectively and consequently also took the form of observation when visiting face-to-face for business meetings throughout the project timeline. Unfortunately, respondents were hesitant to share financial statements and strategic documents.

4.2.5 Data analysis

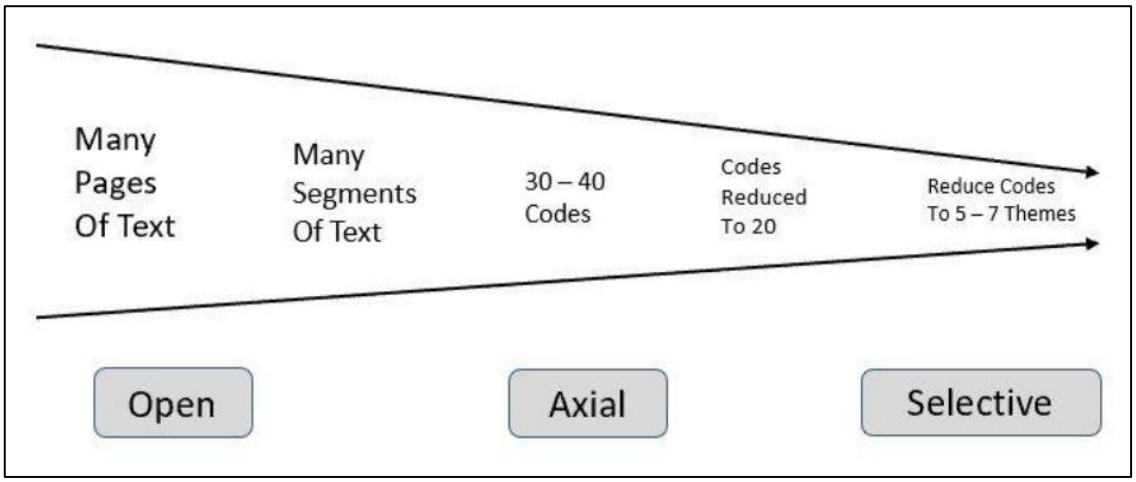
Williams and Moser (2019) provide a comprehensive summary of the significance and structure of using coding in qualitative research to analyse and present data. It consists of methods that enable acquired data to be combined, classified, and thematically sorted, giving a structured foundation for meaning development (Williams & Moser, 2019).

Williams and Moser (2019) also emphasise that although qualitative research orientations range in their theoretical and operational approaches to data management, each uses coding to organise acquired information. Similarly, coding approaches utilise procedures that uncover themes in the data, providing thematic direction toward classifying data so that meaning may be negotiated, documented, coded and presented (Williams & Moser, 2019). Coding is a crucial structural function in qualitative research since it enables data processing and subsequent project procedures to align with the project purpose. The typical process which was endeavoured is depicted in Figure 9 below.

Henceforth, inductive thematic analyses prioritised the construction of codes, quotations and themes from Microsoft®Teams recording documentation using ATLAS.ti 22 analytics software. Interview transcriptions were linked to the recordings to triangulate quotations and as data backup for the recordings. The primary intent was to get fresh eyes and a new lens to the theory of a known phenomenon. This is a "bottoms-up approach where codes are entirely derived from the data (secondary, primary and observations).

Figure 9

Overview of the coding process: Open, Axial and Selective Coding



Note. Williams and Moser constructed this figure in 2018 to showcase thematic analyses. From " The art of coding and thematic exploration in qualitative research" by Williams, M., & Moser, T. (2019*), International Management Review*, 15(1), 45-55.

Selected data (literature review), secondary data (public domain info as mentioned in Section 4.2.4 and observations) and all primary data were reflexively categorised, and sub-categories were created to eventually build evident themes which supported thematic analyses (Braun et al., 2019). Codes per respondent were analysed during this journey to achieve and demonstrate data and coding saturation (Guest et al., 2006). See Section 5.3.

Furthermore, the intention was to find the relationships between the themes (thematic analyses) and conceptualise the RQs. Codes were sorted into and within code categories, presented descriptively, interpreted and then discussed conjunctively. All results, word clouds, raw binary data, Sankey organic construct

maps and theme respondent relation maps/network maps were included and presented in the analyses and discussions section using ATLAS.ti 22, Microsoft® Excel and word construction.

Theoretical saturation was not planned for, given the vast economic models pertaining to vertical boundary strategies. The interviews were unstructured and did not necessarily plan to cover all parts of the theoretical underpinning, rather inductively portraying narratives of cases mentioned and the phenomenon behind upper-echelon strategic thinking of post-pandemic vertical integration and -boundaries (Straus & Corbin, 1998). Herefore, the strength of the result lies in the diversity arising out of different thinking in the SAAS leadership and the dynamic approach to obtain interpretive results.

4.2.6 Quality controls

As per Hill et al. (1997), researcher bias is unavoidable and should be extensively explored (constructive) so that it is controlled so as not to affect the outcomes (positivistic) significantly. As accurately as feasible, it was wished to depict how participants behaved, to describe individual experiences rather than relating how we feel.

Scientific rigour relates to trustworthiness (Cypress, 2017) and is evident/ reached when the researcher can audit developments and replicate the data (Koch, 1994). Controls are adequate and trustworthy when the study can be evaluated as dependable, credible, transferable and confirmable in qualitative research (Saunders & Lewis, 2018). The following methods constructed served to achieve the trustworthiness of data. See Chapter 5 for findings:

- To achieve credibility (internal validity): prolonged engagement with the industry throughout the collection process (timing of interviews, emails and in-depth interviews) was achieved, and triangulation across industries with primary and secondary data was done by means of revisits of the coding process and re-checks occurred regularly throughout the two month collection period(Koch, 1994). See Appendix B for the project timeline.

- To achieve dependability (reliability): evidence was provided for the entire process, and decisions were made to create themes (Koch, 1994) via ATLAS.ti22. Data was stored in an encrypted safe folder. See Section 4.2.4.
- To achieve transferability (external validity): to provide meaningful fittingness to the data, therefore, the focus was placed on the thick description of the problem, and purposive sampling, which was emphasised via World Clouds and visualising data saturation, codes and theme development via ATLAS.ti 22, to be placed into the context of all readers. Frequencies per axial groups are also discussed.
- To achieve confirmability: all interviews were recorded, automatic transcription linked, and evidence was clearly shown through analyses via ATLAS.ti 22, that findings come from recorded data (Tobin and Begley, 2004). Summarised case and respondent criteria are shown in Table 1.

The five types of triangulation were also excavated and investigated as per Nancy Carter et al. (2014) to ensure scientific rigour and trustworthiness:

- Data triangulation by using multiple data types was achieved.
- Respondent triangulation was implemented using various geographical locations and sources across cases. See Figure 7 and Table 1.
- Method triangulation by using interviews and secondary data was conducted. See Chapter 5. One limitation is the worthiness of the chief executive officers' engagement compared to other top leaders within the firm, which poses room for further investigation and research.
- Investigator triangulation by using various investigators was not anticipated for this study, although supervisor assistance was provided.
- Theoretical triangulation uses various theories to evolve firms' vertical boundaries (Nancy Carter et al., 2014).

4.2.7 Ethical considerations

The research ethics process aims to guarantee that any research undertaken under the jurisdiction of GIBS is conducted ethically, in conformity with the University of Pretoria's policy, and in a manner that protects the rights of all stakeholders involved in the research. GIBS's master's research and ethics committee [MREC] delivered an official report approving the submission of an application for ethical clearance. Report and proof submitted separately as part of the data list. See Appendix F for

summarised proof. After approval, formal interviews will be initiated in September 2022.

Due to the nature of the study, which needs firm-level strategy analyses, all respondents were told of the importance and significance of the research and were required to sign a letter of informed consent and an official permission letter on the company's letterhead. This was a requirement for the MREC as well. See Appendices D & E. At the beginning of every interview, participants were reminded of the consent statement, confidentiality, and their ability to withdraw at any time. All respondents consented, signed, and finished their interviews in their entirety.

4.2.8 Limitations

Replicability may be difficult given the level of analyses, respondents' insight into all decisions during analysis, and the extent of data disclosed regarding companies' strategies (Queirós & Almeida, 2017). Objectivity was not always maintained as interpretivism seeks subjectivity, and companies' strategies might not be fully disclosed. Nevertheless, ironically this speaks to the nature of interpretivism, asking why and how regularly. (Queirós & Almeida, 2017).

The study may be deemed non-quantifiable / verifiable and challenging to establish cause-and-effect connections, as microeconomic theories are evolutionary and complex. However, this study aimed to obtain a holistic and empirical view of companies' post-pandemic strategies and how these strategies evolved. Therefore, the quantity might remain subjective (Queirós & Almeida, 2017). Queirós & Almeida (2017) refer to projects that might not be regarded as generalisable from the sample to the population and might pose limitations. SAAS is incredibly vast and diversified, and only 6 cases were selected; therefore, it was difficult to justify the selection of the cases; however, in the interest of extending the representation on the top firm level, generalisability may very well be granted.

Trust was crucial, as companies may have viewed talking about intrinsic strategies as highly confidential, not giving away any trade secrets. Therefore ensuring confidentiality by providing detailed explanations of the problem before the interviews and ensuring that respondents were highly regarded as adding to the body of

knowledge was of utmost importance. Ethically, this topic was also considered highly confidential and was carefully treated when engaging in enquiries regarding whether participants agreed to participate or not (Queirós & Almeida, 2017). Notwithstanding, the multiple-case study investigated a complex issue with multiple variables under analysis. Unfortunately, respondents were hesitant to share financial statements and strategic documents.

The case study remained beneficial in adding vastly to the body of knowledge and was the best strategy in applied and social sciences. However, the limitation explained in Section 5.2 was the level of secondary info (financial statements, strategic documents) obtained within cases as they did not want to disclose. The difficulty in interviewing more than one top leader within the firms also brought about a possibility for further research and studying the cascading effect of vertical boundary strategies down the hierarchy of the company organogram. This paper aimed to innovate, design and critically challenge current long-standing theoretical and empirical assumptions, but a longitudinal study would perhaps serve better (Queirós & Almeida, 2017).

Chapter 5: Results

5.1 Introduction

After data collection, Chapter 5 summarises the most significant discoveries and insights from respondents i-vi [Ri-vi]. It aims to give a substantial picture of evidence resulting from the data analysis procedure. To guarantee fluency and credibility, initial comparisons of respondent interpretations, ab initio and ex post facto, will be made in this chapter, but the body of discussion will begin in Chapter 6.

In order to offer context to the presented results, the chapter begins with a description of the chosen cases and the samples within SAAS, followed by a discussion of sample fit and case justification. Thereafter, the codes, groups, and significant themes that arose during the qualitative analysis of each of the three RQs, will be presented visually and illustrated in detail. Moreover, evidence of data saturation is provided. In conclusion, tables and frameworks will be shown.

Consciously, the value of subjectivity will be emphasised since the interpretivism phenomenon technique is employed in this study. Therefore the narrative of the research question is explained as an introduction, evidence is given emanating from data, and direct quotes from respondents i-vi will be linked to the evidence. The purpose of the analyses, presentation, and illustrations is to give a unique perspective on the significance of dismal sciences (in this case, microeconomic vertical boundaries) to society. To allow for triangulation and to enhance credibility, convincing quotations and respondent perspectives will be highlighted and portrayed.

Complexities, challenges, and divergent opinions of respondents will be noted, however, explained in Chapter 6. Roadblocks encountered throughout the data gathering and -analysis phase will be disclosed, and their resolution will be reflected so the reader can engage in transparency. In Section 5.5, unexpected or surprising findings that developed from the data will also be discussed.

5.2 Sample description

Table 2

Case summary and criteria for respondent selection

Case	Respondent	Position	Experience (yrs)	Industry	Sector	Sub-sector	# in sub-sector	Firm Head - count	Firm Turnover 2022FY	In-country (%)	In-house production (%)	VI Level
1	v	CEO	5	SAAS	Horticulture	Fruit & Veg	1	35	1.2 bn. Zar	50%	100%	High
2	ii	CEO	25	SAAS	Horticulture	Fruit & Veg	2	9400	2.2 bn. Zar	50%	100%	High
3	i	CFO (Group)	11	SAAS	Horticulture & Livestock	Grain and Feed Trade	1	300	14.7 bn. Zar	100%	10%	Low
4	iv	MD (Feeds)	30	SAAS	Livestock	Poultry and Animal feeds	3	564	4.4 bn. Zar	99%	100%	High
5	iii	MD (Africa)	15	SAAS	Livestock	Poutry Animal Feeds and Additives	1	2278	3.2 bn. Zar	65%	58%	Medium
6	vi	CEO	14	SAAS	Livestock	Swine and processing	2	1223	1.5 bn Zar	85%	85%	High

Note. This table was created by the researcher using Microsoft® Excel.

Similar to Lindgreen et al. (2021), setting the boundaries and defining why cases were selected was imperative to case study strategies. The purpose was to illustrate the microeconomic phenomenon of vertical boundaries and the generalisability of findings within SAAS. Upper echelon theory was predominantly applied to the analysis of cases, as it embedded firms' strategic thinking (Hambrick, 2007). The strength of the output derives from the diversity of thought emerging from different sub-sectors within SAAS's leadership and the dynamic approach employed to achieve interpretive results. See Table 2 above.

The selection criteria for participants can be summarised as leaders (top management) with more than five years of experience within the SA livestock sub-sector or the SA horticulture sub-sector.

Selection criteria for cases are summarised as follows: the level of integration, the size (be in the top 5 firms re revenue), the SA agriculture sector and within the livestock or horticulture sub-sector.

Cases were selected accordingly. Within each subsector, representative cases were chosen. Case 3, for example, was explicitly identified as an outlier and selected due

to its disintegration level. In each instance, respondents were required to meet the participant selection requirements.

Participant homogeneity was purposeful and visible in that all interviews were conducted with top executives and leaders in their respective SAAS firms. Homogeneity was evident in the clear interview guide and the prompts prior to the interviews. Due to the decision to carefully nominate instances for variance per subsector, several interviews exhibited subtle heterogeneity and distinctions (e.g. respondent i, being focused solely on trading in the realm of vertical integration). Refer to Table 2 and Figure 7 to review the position of the participants within the SAAS setting.

At the outset of this project, it was evident that the case study approach and research method would be the most effective means of capturing vertical boundaries within a firm embedded in a particular industry. As possible, respondents/ candidates were approached and requested to engage in interviews with only top management about the firm's strategy; it became clear that finding the examples was reasonably straightforward. However, securing in-depth, sophisticated, trustworthy interviews with highly regarded top management within SAAS was challenging, as it is perceived that one needs an “in” or network to engage at this level. Fortunately, every responder was accessible and willing to participate in the survey project as networks within the researcher's realm were utilised (see Appendix D for the permission letter that all six respondents signed).

The second difficulty emerged when attempts were made to secure interviews with alternate members of senior management within the group/firm, such as the chief executive officer vs the chief financial officer or the managing director versus the financial director, which would have assisted in effective triangulation and demonstrated a variety of ideas within a particular case. In addition, respondents were unwilling to provide trade secrets, financial statements, or documents relating to their strategy. Thus it became clear that obtaining the required degree of evidence at this time was not possible.

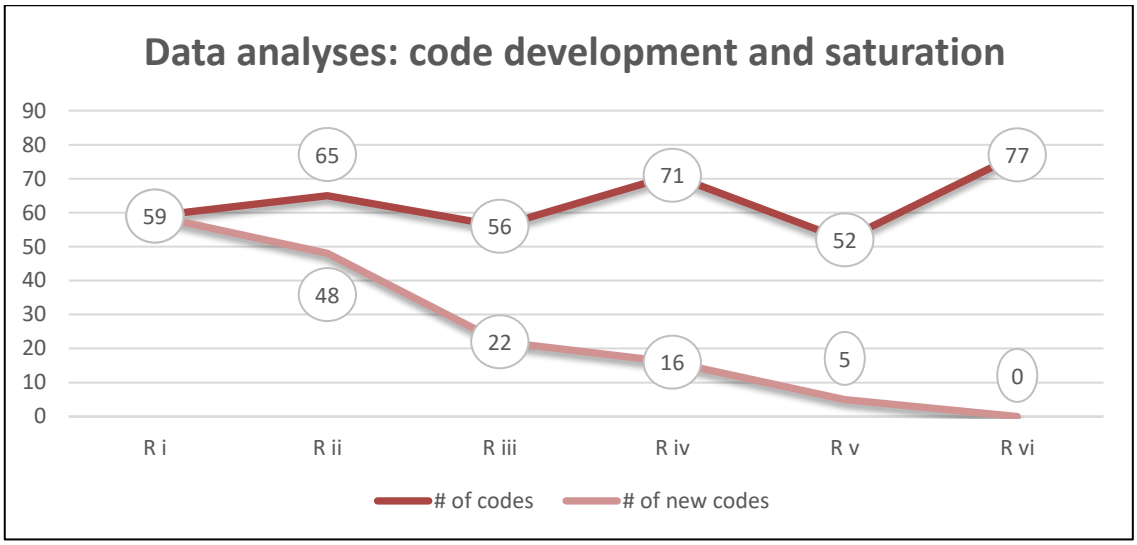
However, as depicted in Table 2, all respondents were contacted after interviews via e-mail to obtain revenue information for 2019 to 2020, market share percentages,

export narrative headcounts, and the general size of the company. This data is not freely available in the public sector and can be seen as valuable insights within the cases. All respondents replied to the emails, confirmed the data, and addressed how strategies have cascaded within the firm; more participants from different levels of management can be interviewed.

5.3 Data saturation

Figure 10

Process of data saturation



Note. This figure was created by the researcher using Microsoft® Excel.

Figure 10 demonstrates the process of data saturation and how it was achieved. As per Section 4.2.5, codes per respondent were established and analysed to reach and demonstrate data saturation (Guest et al., 2006). Rvi's subsequent interview elicited no new information concerning the phenomenon, indicating that the phenomenon was saturated (Morse et al., 2002).

Saunders et al. (2018) explain that theme saturation alternatively is the point in data coding when no new codes are found. At Rvi, the analyses reached data saturation, which allowed for a comprehensive sample of the six nominated cases and respondents representing such cases. All codes in the data have been exhausted, indicating that sufficient information or data are available to reproduce the study and that no more coding is required (Fusch & Ness, 2015).

Additionally, according to Flick et al. (2004), a hypothesis derived from a single sample/data type never fits or functions. Hence the samples as described and the various avenues of data collection were unpacked in this research project. Flick et al. (2004) further explain that theoretical saturation has been reached when adding fresh data no longer yields new information. Where the application of additional methods may corroborate existing knowledge in the sense of confirming it, triangulation approaches the limit of theoretical saturation.

5.4 Analyses of results and theme presentation

In this section, the results associated with the data analysis procedure outlined in Chapter 4 will be detailed, together with the complete data extraction and presentation.

First, all recordings and interviews collected and completed via Microsoft®Teams were methodically uploaded into ATLAS.ti 22 and coded (see Section 4.2.4). Ri was reviewed first, then chronologically until Rvi. In order to be familiar with respondents' tone and perceptions and to allow for the manual editing/merging of generic code segments and quotation structures, it was judged beneficial to revisit often and listen to the recordings.

Except for Rii, who wanted to respond in his native tongue and was consequently analysed in Afrikaans, transcriptions (automatically transcribed by Microsoft®Teams) were also linked to the relevant respondent's audio. In this research report, the researcher manually translated segments of code. It was determined that transcriptions would only be used for direct quotes, data triangulation, and verification that the sections coded matched what Microsoft®Teams automatically transcribed, should it be needed.

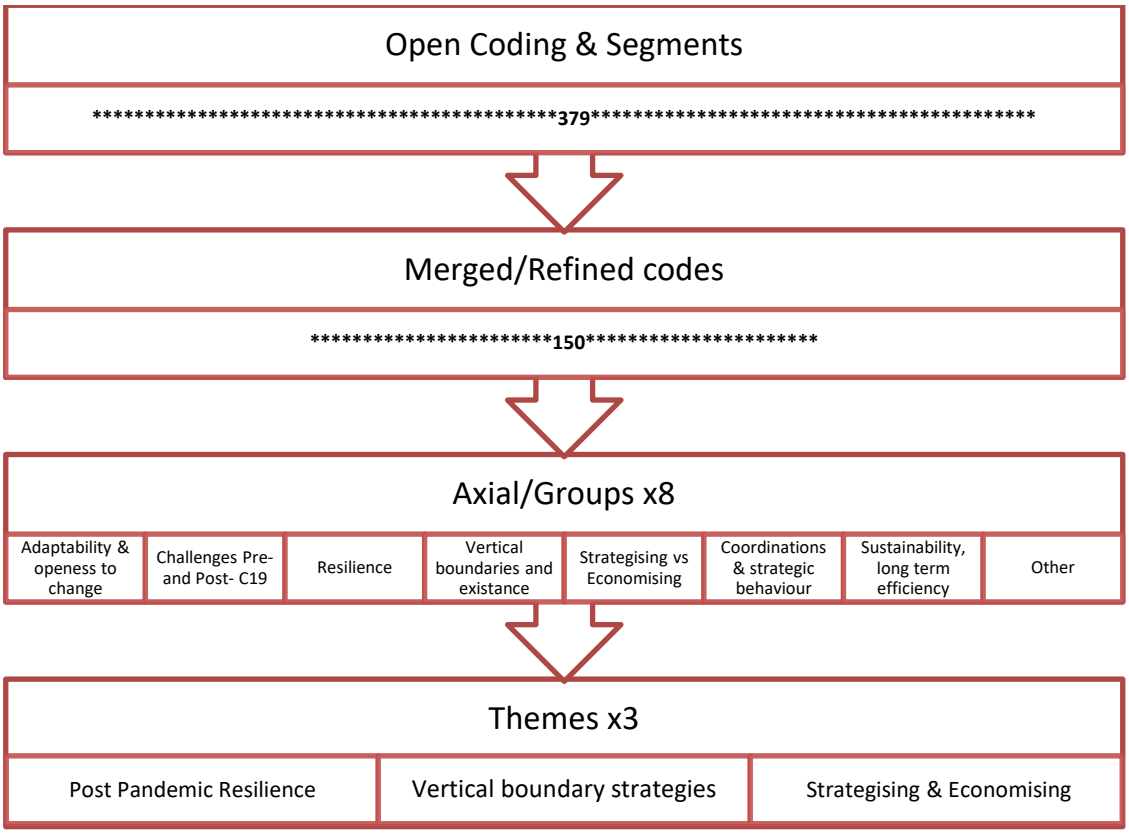
380 General or open codes were developed, with the complete range of Ri to Rvi analysed and coded. Following the completion of coding from top to bottom, 150 improved codes were produced by merging open codes or segments. Revisit Figure 9 and Table 3, explaining theme development and the coding process. Merging permitted the elimination and filtration of tautology and repetition, correcting spelling

errors, and a greater familiarity with the data provided. Although, some tautology remained inevitable. See Appendix G for the complete raw data code list.

Words and revised codes were colour-coded to help identify and reveal axial/grouped codes. Produced were eight relevant axial groups that spoke directly to the refined axial codes. See Appendix C. The remainder of this project will employ these colour codes to facilitate or simplify data recognition and analysis. The eight axial groupings were further developed and allocated to three themes that arose from these axial groups. Sections 5.4.1 to 5.4.3, RQ1 to RQ3, and themes created for each axial group will be described in depth.

Table 3

Ri-Rvi coding process; overview of theme construction



Note. This figure was created by the researcher using Microsoft ®Word Smart Art.

In addition, Figure 11 below illustrates an original word cloud composed of the entire data set summary (150 refined codes). This word cloud represents the most grounded codes (i.e. the concepts presenting the highest frequency in the data set). Similarly, this word cloud aims to provide a simplified depiction of the richness and

Figure 11

Word cloud of the entire data set; grounded iterations per axial group

Note. Created by the researcher in ATLAS.ti 2.

Word clouds are a powerful resource for illustrating particular concepts' weight and grounded nature. As an introduction to the data, Figure 11 illustrates a summary of the themes that held the most weight across the entire study. Similar descriptions will be used for the subsections of RQ 1-3.

Figure 11, for example, indicates that all respondents agreed on the concept and necessity of short-term continuous change and adaptation. When firms were questioned about their openness to change, adaptability, or willingness to change after C19, the typical evidence was that change and adaptation constantly occur in the short term, that it is fundamental to the firms, that the firm and its staff must be flexible, and that as firms migrate, they must anticipate change (thinking on their feet). These findings are depicted as purple-coloured codes in Figure 11.

Figure 11, for example, displays blue code concepts. When respondents were asked about their understanding of vertical integration, the firm's vertical boundaries, and whether the firm makes or buys, they frequently responded to vertical integration in the entire data set. Vertical integration drives specialisation; diversity increases the firm's competitiveness and needs to remain within its core competencies, and the consolidation of products drives vertical boundary strategies. In addition, it was discovered that vertical integration is very prominent in SAAS.

The subsequent sections will describe the narratives, evidence, and summaries for every relevant research question. The narratives would be assessed independently according to subgroups or axial codes, code quotations from respondents to substantiate and triangulate data, and then by topic summaries and associations to complete the research questions. Also, some axial groups have unique interdependencies with others; however, the topic at hand would only be discussed in one of the axial groups.

To demonstrate data triangulation and obtain a natural sense for the constructs mentioned above, all sections also highlight and link respondents' quotations or direct narratives, which were occasionally rich, sardonic, and purely inventive. In other words, the respondent's, interpreter's and microeconomic nomenclature may have differed, so it was decided to showcase the most critical direct quotations from respondents.

5.4.1 Results RQ-1

How were post-pandemic uncertainty, change and resilience addressed in SAAS?

5.4.1.1 The narrative

This question aimed to focus on the post-pandemic period vis-à-vis SAAS. In other words, the actions and reactions of firms in SAAS following a period of shock or severe change. Although RQ1 also touches on the vertical boundaries of the firm, and the question contains narratives of uncertainty, change, adaptability, coordination, and resilience, the focus of this question was to bring SAAS and the pandemic closer together with the focus on the tangibility of the movement or adaptation narratives of SAAS firms following a period of shock. The conceptual framework depicting the link between RQ1, the pandemic, and SAAS is depicted in Figure 4.

5.4.1.2 Evidence; theme 1- post-pandemic resilience

Figure 12

Grounded codes linked to adaptability and willingness to change

Note. Constructed by the researcher using ATLAS.ti

All respondents in this axial group agreed that the ability to change and adapt in the short run consistently is of the utmost significance and imperative to the firm. Change was likewise considered non-negotiable and essential to the company's success.

In addition, most respondents acknowledged that not just C19 but also the re-ignition of the war between Russia and Ukraine in February 2022 raised uncertainty and unpredictability, enhancing the firms' adaptation narratives.

Most respondents cited an innovative mentality and the ability to adjust to tiny changes as critical drivers of adaptability and change inside a firm. Similarly, respondents believed that in order to adapt and evolve, new facilities and the ability to sweat present assets are required. However, the sentiment was that new facilities add capital expenditure or -availability, which can be tough to meander, are essential to the ability to innovate continuously.

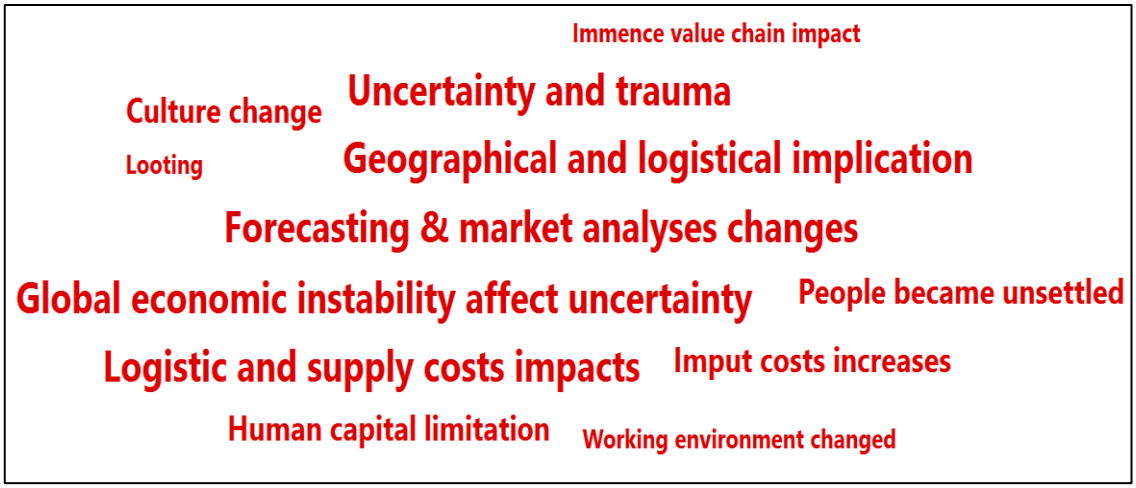
Intriguingly, Rvi referred to the importance of a company's ability to chart its own path, which has been attributed to what has been termed “The benevolent dictator”, which enhances adaptability. This sentiment is consistent with the narrative of contrasting bureaucracy and agility. Ri&vi believed that having a bureaucratic

mindset might possibly be a trade-off for agility and adaptability, which must continually be considered in firms. Respondent vi observed that the willingness to change and the capacity to change might be viewed as an ongoing trade-off. In other words, the balancing act between funding requirements and growth potential was documented as a significant driver of the company's existence.

During and after a period of shock, two respondents noted a change in leadership drastically results in a change in the firm and -strategies, which in effect changes the adaptability. It was recognised as a necessity to retain highly trained or experienced employees, as documented by Rii and Ri, in order to maintain a firm's adaptability.

Figure 13

Grounded codes linked to C19-related challenges



Note. Constructed by the researcher using ATLAS.ti

Figure 13 depicts the most significant constructs related to firms' challenges during and after C19. This axial group's novelty stems from the fact that five respondents highlighted that logistics and supply costs severely impacted the firm. Forthwith, the firm's geographical location directly impacted the logistical issues raised in C19. Consequently, the immense value chain impact substantially affected the firm's revenue and input costs. At least four respondents cited the ability to do an accurate market analysis and projections in the realm of change as the second major issue. Local businesses have been affected by global export- and, similarly, import safety rules. Comparatively, Ri-ii and v mentioned the impact of global economic volatility.

Staff loss or absence due to C19 was another factor to consider, as it hindered the firm's capacity to move quickly and to be agile. Similarly, Staff morale and the perception of staff was presented as significant barrier to the firm's success. Three respondents noted looting, which presented an issue for the firm because retail and direct product transport and access to the market were affected. At least 50% of the cases stated that there was a shift in the general working environment and a clear cultural shift.

Uncertainty and trauma were cited by three of the six respondents as a real challenge following the period of C19 and during the period of coverage. Other noteworthy findings were C19 increasing unnecessary meetings, procedural modifications, end-user payment regimes/capabilities, human capital capacities, access to skills and skill development, currency volatility, and credit restrictions. Consumer demand and local market consumer access, to name a few, were also allegedly documented to have contributed to oversupply situations.

Figure 14

Grounded codes linked to resilience

Note. Constructed by the researcher using ATLAS.ti

When respondents were asked about post-pandemic resilience, appropriate responses and reflections emerged, as depicted in Figure 14. All respondents cited staff management, employee empowerment and staff engagement as significant reasons for maintaining resilience during times of unpredictability and change.

Similarly, regular staff development and multiskilling personnel or multi-skill training were suggested to enhance a firm's resilience.

Access to technology and genetic improvement ranked high in remaining resilient. Culture, maintenance inside the company, availability of working capital, recognition of competition, co-opetition in a closed market, and maintaining exponential growth were also identified as additional resilience-building elements.

Similarly, when asked how respondents defined resilience within the industry, the most common responses were to diversify within your lane and maintain a balance between the exceptional influence of professional management and the ability to build buffers. Proper human capital management, the ability to predict climate or global warming factors, and sticking to your core business and competencies were.

Respondents also believe that risk can be reduced by being well-informed of what is happening in the market and constantly seeking new opportunities.

5.4.1.2.1 Direct quotes from Ri-vi substantiating RQ1

Ri;

"Due to the cost of inputs and freight costs, debtors' credit limits became significant; all of a sudden, you can only give half the product for the same limit, affecting revenue."

"Our founder's motto is change; progress is a mindset."

Rii;

"You need a consistent staff development program."

"Resilience is the balance between the exceptional influence of professional management; you need to keep the team balanced."

"Climate predictions made us resilient in Horticulture.

"My passion is genetic innovation; it allows for resilience."

Riii;

"We like to buy and sell, don't always like the people-problems linked with the infrastructure."

"Doing business in Africa; your clients teach you what resilience is."

"C19 just another bump on the road."

“Sales were impinged because of the lockdown due to the physical ability of people to go and buy the product.”

“ Genetics and technology is what we invest in.”

Riv;

“Covid and the war brought about a lot of uncertainty and trauma, also in our company's culture. We’ve seen crazy things, and we don’t know what’s going on anymore, e.g., increased interest rates = ZAR depreciates.”

“Our biggest enemy is time, so we need to create capacity and buffers.”

Rv;

“You need to be wide awake and knowledgeable of all the different challenges.”

“After C19 we were in a changing phase with new leadership on board, taking us out of our comfort zone.”

“You need to be tough in negotiations with customers in order to get value out of the customers, not just be a price taker”.

“All the change we have been subjected to, monumental food safety requirements and various levels of integrations constantly forcing us to change and evaluate how you do business have made us resilient, no question.”

Rvi;

“To be resilient, you need to sweat assets and have working capital.”

5.4.1.3 Summary; post-pandemic resilience

In summary, many constructs emanated from the questions describing resilience after a shock period. Most respondents confirmed the idea behind adaptability, coordination, uncertainty and change as being of utmost importance to the company's survival. Challenges related to C19 were excavated and acknowledged with a unique set of outcomes; however, most firms confirmed that back-to-back uncertainty, for example, the pandemic and then the Russian-Ukrainian war, global economic instability and logistics are the prime concerns.

Companies' strategies and strategic thinking regarding resilience and adaptability were similar in highly integrated firms; in cases one, two, four and six. Cases three and five had a slightly different strategic mindset due to a lower level of integration.

Staff management and engagement was a construct recognised of utmost by most respondents; technology and the influence of genetic improvement were regarded as similarly significant. Interestingly two respondents mentioned that C19 has eliminated complacency and increased resilience and adaptability, allowing for quick decisions and a balance between coordination and adaptation.

5.4.2 Results RQ-2

How did post-pandemic vertical boundaries of firms in SAAS evolve?

5.4.2.1 The narrative

This research question specifically focused on the microeconomic principles of vertical boundaries. It aimed to empirically enlighten the extent of how boundaries were addressed within firms in SAAS. Although a small component is linked to the narrative of the specific period aftershock, this question focuses on the boundaries per se and whether companies within SAAS consciously or unconsciously acted upon- and within these boundaries. Revisit Figure 4 for the conceptual framework of the relationship between research question 2 vertical boundaries and SAAS.

5.4.2.2 Evidence; theme 2- vertical boundary strategies

Figure 15

Grounded codes linked to vertical boundary strategies

Note. Constructed by the researcher using ATLAS.ti

The intended central construct under this research project is unambiguously the construct of vertical integration and vertical boundaries of firms. For this reason, only a few open-ended questions were asked to respondents i-vi to determine their understanding of the vertical boundaries of firms. As reflected in Figure 15. Clear grounded codes emanated from the three questions in Section 2 of the interview guide, see Appendix C.

Most respondents mentioned vertical integration, which fosters specialisation and boosts profitability. Alternately, the reference to doing what you are good at and avoiding things you do not understand arose from the inquiry regarding the cases' understanding of vertical integration and vertical boundaries. Integration upstream was primarily motivated by the ability to control supply/supply chain security. Eliminating uncertainty was also a typical response, ironically related to diversification increasing competitiveness, although the sentiment remained to stay in your lane. In other words, maintain focus on your core competencies.

Typically, respondents also indicated that having control over one's value chain, assets, operations, and product consolidation demonstrate vertical boundaries and integration. Most responders have both a make and a buy model, while a few have a make model and one has a buy-only model. Revisit table 2 for the respondents' and case summaries. In contrast, two respondents stated that investing in your internal infrastructure and knowledge falls within the domain of vertical boundaries.

Two respondents mentioned co-opposition and competition with the client when integrating downstream. These respondents also mentioned why firms should integrate downstream, attributing them to clients' idiosyncrasies. Rvi emphasised the client's ability to integrate upstream, ensuring a level playing field.

All responders mentioned the capital-intensive nature of vertical integration as an issue. However, becoming central to the market and the client is one of the primary motivating elements or forces for downstream integration. Additionally, downstream integration has advantages in retail and customer service. The concept of vertical boundaries was also affirmed by having a model that facilitates value addition and flows, hence igniting vertical integration.

Rv then discussed contractual matters and the concept of rent, but control remained crucial. Most respondents also mention that different divisions within the organisation have distinct models of make-vs-buy, enhancing diversification. One respondent also alluded to integration involving several distinct production processes in several business units. Finally, three respondents mentioned vertical boundaries that allow a company to be tested outside its comfort zone.

5.4.2.2.1 Direct quotes from Ri-vi substantiating RQ2

Ri;

"You make money where you are specialised."

"We are trying to diversify but stay in our field of specialisation."

Rii;

"Integration is typical and beneficial to the Agri sector, but there are elements of contracting out."

"Where one firm split into more than one division involved in the processes of the value chain."

Riii;

"If we would have more working capital, we would have more room to work."

"Security of supply, eliminating uncertainty, motivated the evolution of backward integration."

"Being central and geographically available to the market drove vertical integration."

Riv;

"We try to remain with making everything ourselves, a small line of diversification, but sticking within our lane".

Rv;

"We do not own the ships; we do not own the trucks, but we own the cargo."

"Having control until the power of the consumer is essential."

Rvi;

"Forward integration is moving into B-C non-comfort zone and getting closer to your market."

"Not relying on idiosyncrasies of farmers, managing your own risk."

"Playoff between bureaucracy and flying by the seat of your pants."

“Competing with your clients when forward integrating. When farmers backward integrate, they also start competing with you.”

5.4.2.3 Summary; vertical boundary strategies

A unique diversified mindset emanated from the data regarding vertical boundary strategies. Five respondents acknowledged supply chain security and eliminating uncertainty as the prime objective of vertical integration. Some respondents mentioned that downstream integration is more critical to get central to the market and to eliminate end-consumers idiosyncracies. At the same time, others also mentioned that upstream integration is more critical to secure supply and control the value chain and assets during times of uncertainty. However, all respondents mentioned that vertical integration drives specialisation, ensuring that the company remains within its core competencies and invests in in-house infrastructure. Another noteworthy response was that diversification brings competitiveness; however, five respondents believe that you need to stay within your core competency, which becomes problematic in the realm of diversification. It was also evident that vertical integration is capital expensive and not easy.

5.4.3 Results RQ-3

What post-pandemic strategising and economising narratives resonated in SAAS?

5.4.3.1 The narrative

The third and final research question focused on strategising versus economising, as postulated by Williamson (1991). See Appendix C. Famous papers presented this concept in the early 90s and proposed that it perhaps should be explored empirically within SAAS. Three actual groups emanated from this section; the idea behind strategising, the idea behind efficiency versus efficiency (economising) and the idea behind long-term efficiency and sustainability.

The purpose of this RQ was to determine whether or not SAAS leaders genuinely grasped this notion of strategising vs economising and whether or not they had intentionally or unknowingly acted on any or both of these concepts. This research

question sought to objectively explore how vertical borders have been affected by the pandemic; a portion of the issue also pertains to SAAS. The conceptual framework of the interaction between RQ3, vertical boundary methods, and the pandemic is depicted in Figure 4.

5.4.3.2 Evidence; theme 3- strategising vs economising

Figure 16

Grounded codes linked to coordination and strategic behaviour

Note. Constructed by the researcher using ATLAS.ti

The concept underlying coordination and strategic behaviour was the first step in solving research question three. When respondents were asked to define the company's behaviour during sessions, it was clear that organisations have daily strategic mindsets associated with a tightly interwoven agile and dynamic thought process. See Figure 16 above.

The majority of respondents indicated that C19 presented unique opportunities, such as requiring more frequent team meetings, challenging new lines of supply within the realm of being an essential service, and inflating revenue. However, a few respondents noted that ab initio, close-knit face-to-face agility was lost during C19 and occasionally ex-post facto C19 due to back-to-office rules. When respondents were asked how the company's philosophy or strategy evolved over the years, it was clear that protocols and mentalities shifted and divisional cooperation differed. When applicable, formal annual budgets were included within key performance indicators (KPI) for all divisions of the majority of respondents.

Most respondents believed that internalising strategy yields far more significant benefits; the use of management consultants is reduced to between once per year and once per five years and is limited to EXCO development. In addition, the practicality of consultants understanding the business's complexity and the lead times of results driven by this strategy is insufficient. See Figure 16. However, two respondents mentioned that leadership involvement and leadership training facilitated by consultants are crucial for the organisation's internal growth. Most respondents indicated that they have a high-level five-year plan, with cost being the primary driver for having and developing strategies (strategising).

Figure 17

Grounded codes linked to strategising vs economising

Note. Constructed by the researcher using ATLAS.ti

When respondents were asked about their understanding of strategising versus economising, it was rather interesting to observe the divergent viewpoints that resulted (see Figure 17). The majority of responders indicated that strategising trumps the economy. The common consensus was that strategising is ultimately about yield control and effectiveness. Similarly, respondents indicated that strategising might amount to inefficiency, but it is of the utmost importance, for example, to keep more inventory on hand than necessary due to food security duties.

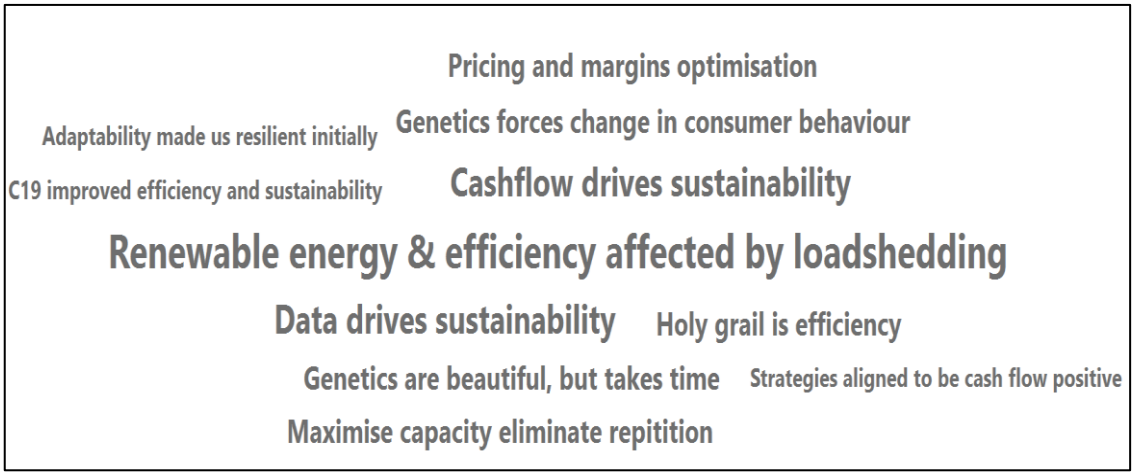
In contrast, one respondent reversed the order of strategy and economy and was unfamiliar with the jargon. When this respondent was approached a second time to confirm his understanding, he changed his mind. He returned to his previous belief

that strategising is more productive and the economy is more efficient in the long term. See Figure 17.

Some respondents also alluded to strategising as having a mentality or thought process before five years or in the near term and that the margin of error is small, leading to shortcuts in the income statement. In contrast, economising entails establishing a research and development team that increases long-term efficiency. Riv & Rv hypothesised that strategy leads to greater efficiency and economising. Rv regarded strategy and economy as equal. Rii referred to the utmost importance of a balanced mindset regarding economising vs strategising. Therefore, it is essential always to have a balanced perspective.

Figure 18

Grounded codes linked to sustainability and long-term efficiency



Note. Constructed by the researcher using ATLAS.ti

Figure 18 summarises the most common notions that emerged when respondents were asked to identify in their own words long-term sustainability or efficiency, as well as how they believe their company can exist or play better.

Initially, it was unclear what drove organisations' sustainability. However, after rigorous re-evaluation and analysis, data, renewable energy, cash flow, technology, and the concept of genetics in upstream supply emerged as the predominant concepts that drove and would continue to drive long-term efficiency. Respondent vi also mentioned sustainability in conjunction with environmental impact, adding that

investing in minimising ecological impact encourages sustainability within the company and its SAAS sector. See Figure 18.

Other important notions emanating were the idea behind cash flow driving the firm's sustainability, pricing narratives and margin optimisation, and adaptability linking to resilience, creating long-term efficiency and sustainability.

Riii noted that there is a focus on the long term in all of the company's food-related endeavours. According to respondent vi, efficiency is the holy grail of any business, and C19 may have improved efficiency and sustainability due to the company's learning and adapting mentality being tested. Similarly to creating resilience, the concept of diversity within your firm's key competencies emerged from the sustainability and long-term efficiency axial group.

5.4.3.2.1 Direct quotes from R i-vi, substantiating RQ3

Ri;

"You can trade long with loss, but not one day without cash; sustainability is linked to cash flow."

In our industry, feed millers, the power situation in the country can be a sustainable issue."

"There's formal session, but we focus on informal daily sessions. We try to change our annual formal sessions so that people do not get bored."

Rii;

"Sustainability and efficiency evolve over time."

"Covid created unique opportunities to engage and adapt, e.g. Teams meetings."

"Genetics and global warming alter long-term thinking and innovation."

"We have formal annual strategic sessions."

"Imperative to balance strategy and economy."

Riii;

"Strategy more important to us than our economy, although inefficient, but we have to because security is more important than the economy."

"Our stock management and position strategy was the key to success."

Riv;

“Maximising capacity and eliminating repetition enables long-term sustainability.”

“We have daily interactions and strategies, eliminating weekly meetings, which I hate; it means management is not engaged.”

“Strategy is small window focus, not economy.”

“Exco makes use of leadership consultant”.

Rv;

“I don’t want my kids to be in the same company and company structure position: diversify to be risk averse in the long run.”

“Covid challenged our thinking and allowed for innovation.”

“Being well informed and having data allows for good decisions.”

“For me, they are pretty much the same thing; success lies in balancing strategies and economies.”

Rvi;

“Economising is unfamiliar jargon; strategising is what we focus on.”

“Genetics forces customers to trade down/ alter the behaviour of procurement, hence affecting sustainability."

“We get Exec team management consultants to frame our rubbers stamps better, and we have leadership workshops.”

“We articulate yearly budgets annually and strategically look at 3yrs financially with a revolving 5-year plan.”

5.4.3.3 Summary; strategising vs economising

The third and final theme emanated from the idea behind the short-term and long-term strategy, behind thinking for the firm or thinking for their economy, and lastly behind sustainability effectiveness and efficiency.

Evidently, all companies attributed daily strategy, agility and dynamic strategic thinking as the core behaviour of coordination and the company's strategy. This means that strategy effectively trumps economy, yet three respondents said that the Holy Grail is efficient. Most respondents noted that formal annual budgets are conducted, and semi-annual or irregular workshops for particular staff members or arranged, with a high-level 5-year plan noted for two respondents.

When discussing sustainability, all respondents mentioned the idea behind renewable energy, new technologies and genetic improvement, which will affect efficiency, and long-term thinking. Four companies mentioned that cash flow would drive stainability. Five companies mentioned that data drives sustainability. Lastly, three respondents mentioned that efficiency is economising, which is long-term, and strategising how to get there.

5.5 Other findings

Figure 19

Grounded codes linked to all axial groups; other findings

Note. Constructed by the researcher using ATLAS.ti

Figure 19 depicts the final leg of results that emerged from the complete interviewing and analysis of all axial groups. The most surprising finding was that respondents believed relationships improved business, reducing transaction costs, and generally influenced vertical boundary strategies and how the organisation evolved after the epidemic.

The majority of respondents mentioned that the company provided an essential service and that production was normal or, as per usual, if not better, being privileged to be a part of the agriculture supply chain for food security. Three respondents stated that C19 brought about growth and record-breaking years and that, in general, C19 had a favourable impact and helped the business adapt and change

faster. Respondents also thought leniency and trust had increased during the past C19 years. It was posited that C19 helped bring the industry together.

The question of whether C19 is indeed nearing its end and what long-term and short-term actually mean in the context of the time was an intriguing discovery. One respondent stated that being ahead of your time, whether short- or long-term, involves recognising opportunities first, which is imperative to strategising and economising.

Two respondents said they are incredibly proud of what they have accomplished as a firm through these times of rapid change. One respondent stated that the logistics constraint had a positive impact because it allowed for integration into logistics and the development of diverse contract narratives and partnerships with shipping lines.

5.6 Conclusion & limitations

The 6C finding assessment criteria opted to ensure a relevant and clear result presentation (Lindgreen et al., 2021) and allow for a cohesive summary of the finding:

1. Choice; clear decision was taken regarding what story to tell off the data analysis in ATLAS.ti. Convincing displays were presented for each of the eight axial groups. Frequencies for the Axial group are also depicted in Figure 20. The axial bearing the most significant average frequency per respondent were C19 challenges, vertical integration and resilience. The lowest is Econimising vs strategising.
2. Completeness; unit of analysis, sample size, variables and all axial groups were discussed in detail, ensuring that RQs had adequate data.
3. Consistency; themes, axial groups, weighted quotations and summaries were used precisely the same way in all the sections of this chapter.
4. Credibility; interpretations were correct by drawing association orthogonal tree figures in ATLAS.ti, which will be discussed in Chapter 6 and depicted code groundedness and density.
5. Clarity; effort has been made not to discuss the results in Chapter 5; however, portraying and visualising subgroups and themes find means of word clouds which can be linked to the orthogonal tree figures in Chapter 6.

6. Cohesion; an attempt was made to keep the golden thread and mentioned gaps identified separately and bring the reader back to the key findings in Chapters 6.

Figure 20

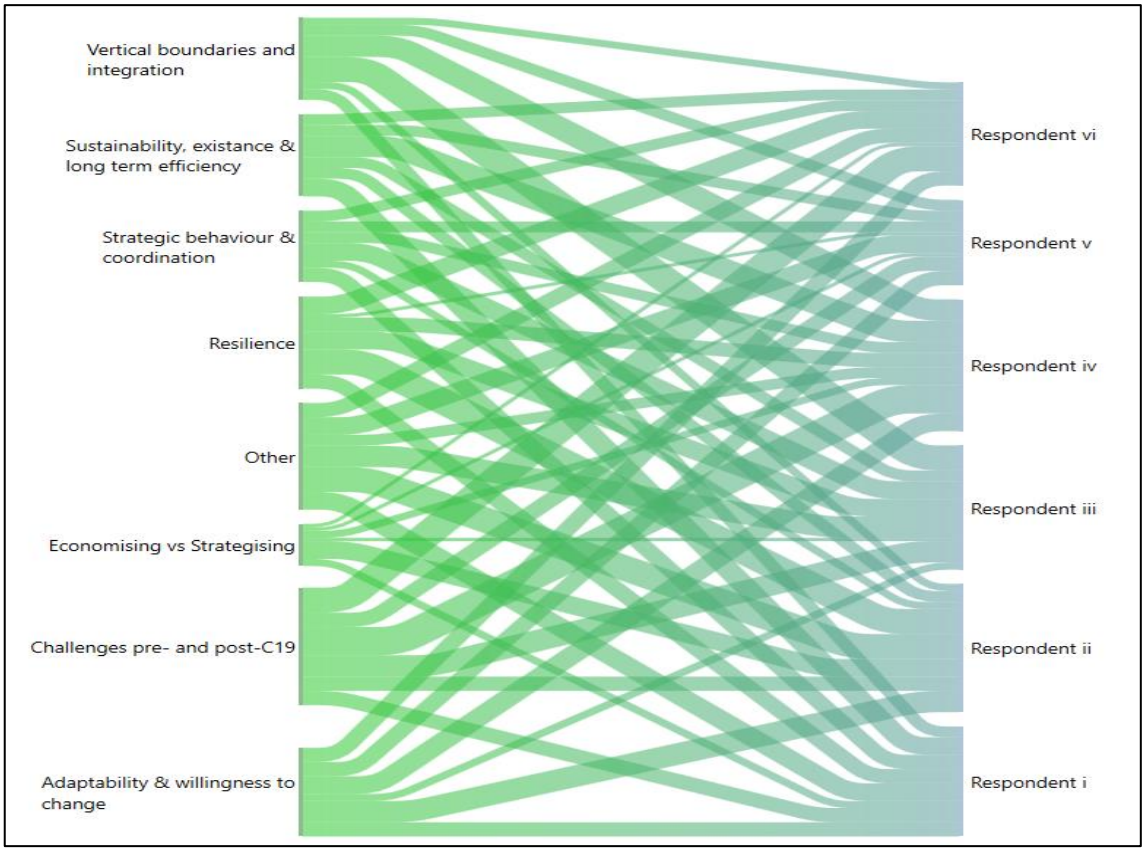
Code frequency of respondents per axial group

	Frequency per group									
Respondent	Adaptability, Openess to change	Challenges Pre- and Post- C19	Economising vs Strategising	Other	Resilience	Strategic behaviour & response	Sustainability, Existance & Long term efficiency	Vertical Boundaries and Integration	Total per respondent	Average per respondent
Ri	10	10	6	6	6	9	8	13	68	
Rii	2	11	4	7	12	8	6	18	68	
Riii	10	10	9	13	15	4	4	5	70	
Riv	10	24	4	4	9	6	10	12	79	
Rv	10	14	5	6	7	4	4	7	57	
Rvi	14	19	7	6	8	8	12	12	86	
Total per theme	56	88	35	42	57	39	44	67	428	71.3
Average per theme	9.3	14.7	5.8	7.0	9.5	6.5	7.3	11.2		

Note. Created by the researcher using Microsoft ® Excel

Figure 21

Sankey diagram; respondent feedback per axial group



Note. Created by the researcher using ATLAS.ti 22.

The Sankey diagram, Figure 21, illustrates this research project's complexity, dynamic and interdependencies. It is evident from this graphic that every respondent has discussed at least one of the axial codes or -subgroups. Using the Sankey diagram, it is possible to theorise that the three themes of vertical boundaries, post-pandemic resilience and economising vs strategising have been discussed in an integrated manner throughout the interviews. The length of the specific axial group in green indicates the weights or complexities of the subjects. For instance, C19 challenges, resilience, and vertical boundaries were the most often discussed subjects. Others were nominated as well.

One of the limitations of this study was evident in that vertical boundaries strategies are highly complex and dynamic. When respondents engaged with open-ended questions, answers and narratives had to be revisited constantly to ensure topics referred to align with the nomenclature of the microeconomic environment. Furthermore, the complexity within the timeframe became a limitation as many interesting findings emanated; however, this project's scope could not be addressed. Additional limitations also refer to respondents not willing to disclose financial statements as well as the believability of secondary data available in the public domain

Some of the roadblocks encountered during the analysis were that one interview load shedding halted the interview for about 10 minutes, so it took time to combine the different recordings and decreased engagement, as the respondent only had one hour for the interview. One interview was conducted in the respondent’s tongue Afrikaans; therefore, the transcription was not used, and for this reason, because transcription narratives could not be used for all of the respondents, it was decided to use the recording and interpretation coding method. Typical roadblocks also included time constraints in terms of training on the latest ATLAS.ti programming use and functionality, however, was manageable.

Chapter 6: Discussion of results

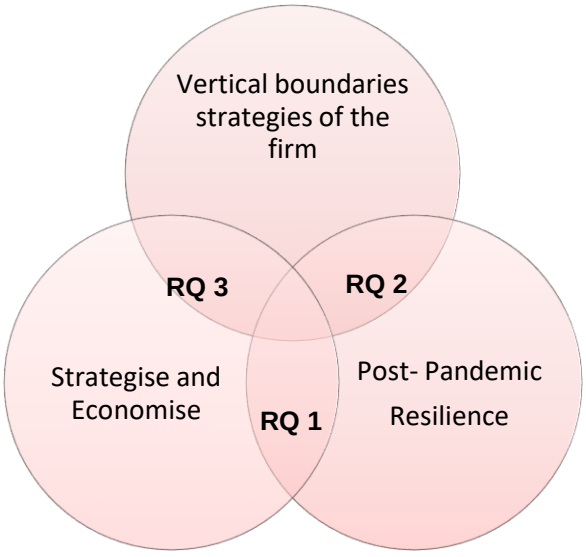
6.1 Introduction

This chapter is an in-depth discussion of the data analysis reported in Chapter 5, which emanated from the data collection procedure depicted in Chapter 4. The results were compared and contrasted with the existing literature (offered in Chapter 2), and definitive conclusions were made regarding the research questions (Chapter 3) to see whether the findings supported or contradicted the literature and to contribute to the body of knowledge. Similarly, the discussion of the findings aims to contribute to a better understanding of post-pandemic vertical boundaries concerning SAAS, revealing how businesses have evolved along the vertical supply chain during times of shock and high uncertainty. Ultimately, the discussion aims to provide recommendations and conclusions to business practitioners and academics.

The conceptual framework, which depicts the relationship between the literature review components, is repeated below, however, refined to incorporate data emanated in Chapter 5 and to facilitate reference to the findings. The concept of SAAS is accepted and thus omitted. See Figure 22. A revised suggested model development emanating will be presented later in Chapter 6.

Figure 22

Refined conceptual framework; the relationship between the literature components and emanated data



Note. Created by the researcher using Microsof®Word Smart art design

Refer to Appendix A and C consistently in order to devise the consistency matrix and questions asked during the interview, specifically questions applying to the axial groups. It is imperative to note that only the significant or concrete and grounded constructs will be discussed in the findings, codes explicitly related to the three themes emanating from the axial groups, as per Section 5.4.

6.2 RQ 1- discussion of the findings

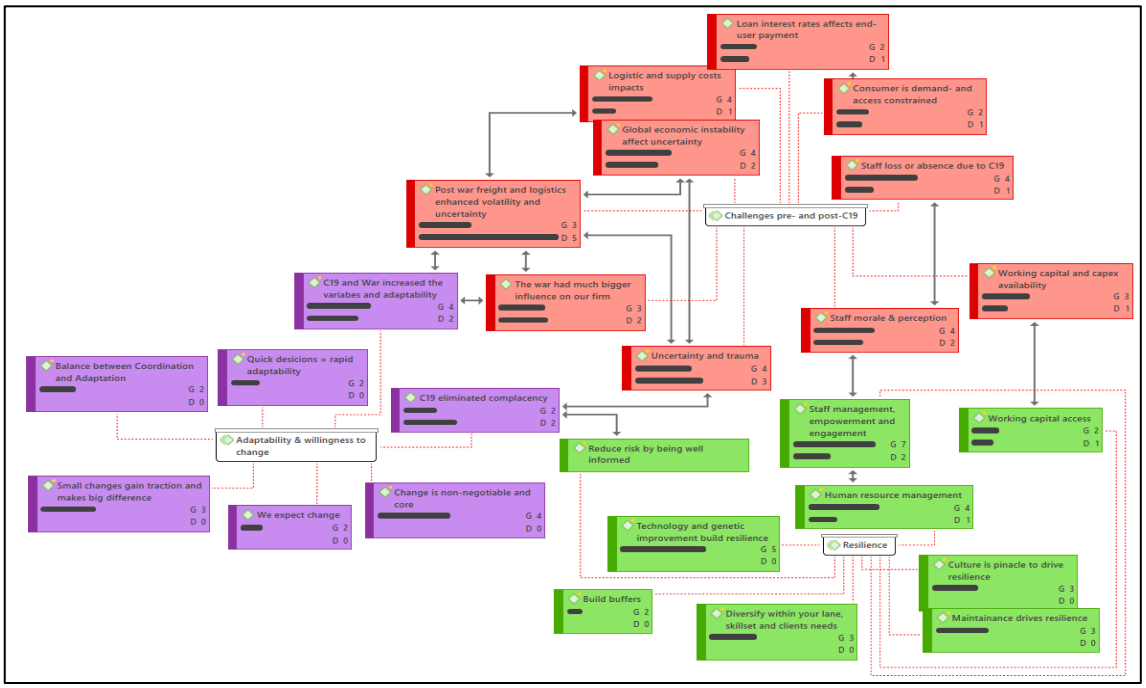
How were post-pandemic uncertainty, change and resilience addressed in SAAS?

6.2.1 Theme 1- post-pandemic resilience

In order to facilitate the discussion of theme one within the realm of RQ1, the axial groups are discussed separately; however, at the onset of the section, a constructed network orthogonal tree aims to guide the reader's attention to the main concepts and associations applicable to theme one. Figure 23 provides a summary illustrating the relationships between constructs and the main concepts coming from resilience in SAAS.

Figure 23

Theme 1- post-pandemic resilience; orthogonal tree



Note. Created by the researcher in ATLAS.t

6.2.1.1 Adaptability and willingness to change

Respondents concurred that the firm's ability to consistently modify and adapt quickly on a short-term to small changes basis is of the utmost importance. Change was viewed as non-negotiable and fundamental to the organisation's success.

> *"Our founder's motto is change; progress is a mindset."(***Ri**)

This finding confirms and accords with the following literature: Both Marchau et al. (2019) and Desai (2022) argue that the C19 pandemic and that change anticipation are critical for decision-making In the long run. Similarly, Williamson (1991) confirmed that an imperative concept of adaptability is seen as an economising rather than a strategising narrative. In contrast, the data in the results and by respondents approved the theory that strategising is much more essential and enjoys power over economising. This speaks to Williamson's (1991) argument and is a profound finding.

Most respondents stated that C19, as well as the resumption of war between Russia and Ukraine in February 2022, increased uncertainty, and unpredictability, enhancing the firms' adaptation narratives.

> *"All the change we have been subjected to, monumental food safety requirements and various levels of integrations constantly forcing us to change and evaluate how you do business, eliminated complacency has made us resilient, no question."* **(Rv*)***

The effects of black swans support these conclusions, and it was an intriguing discovery that the back-to-back occurrences of uncertainties might create a black swan event in itself and coincidently also distorts the ability of the firm to adapt (Taleb, 2007; Mishra, 2021; Antipova, 2020). Marchau et al. (2019) illustrate deep uncertainty, which is concluded as a clear statement and proof in the data presented within this study.

Similarly, respondents believed that in order to adapt and evolve, new facilities and the ability to sweat present assets are required. However, the sentiment was that

new facilities add capital expenditure or -availability, which can be tough to meander, and are essential to the ability to innovate continuously.

> *"To be resilient, you need to sweat assets and have working capital."* ***(*Rvi*)***
> "If we would have more working capital, we would have more room to work." **(Riii)**

This concept was addressed by the current state of SAAS (Stats SA, 2020) and Holland (2011), alluding to the asset specificity and high specialisation within the poultry sector.

During and after a period of shock, two respondents remarked that a change in leadership dramatically impacts the organisation, culture and strategies, thereby altering its adaptability.

> "After C19 we were in a changing phase with new leadership on board, taking us out of our comfort zone." **(Rv)**
> *"Covid and the war brought about a lot of uncertainty and trauma in our company's culture. We've seen crazy things, and we don't know what's going on anymore, e.g., increased interest rates = ZAR depreciates."* ***(*Riv)**

Marchau et al. (2019) & Hynes et al., (2020). Showcases the value of leadership and policymakers' engagement in implementing the correct strategies under deep uncertainty. Minimal information is presented here, or it is essential to note that due to leadership's involvement in strategising and economising, changing leadership will effectively also change the strategic and economic narrative of the company.

Topics not addressed in the literature review, which will be added to additional topics noteworthy for further research in this subcategory, include:

1. "The benevolent dictator", which enhances adaptability. This sentiment is consistent with the narrative of contrasting bureaucracy and agility,
2. the willingness to change and the capacity to change might be viewed as an ongoing trade-off or balancing act between funding requirements, and growth potential was documented as a significant driver of the company's existence
3. staff retention and engagement.

6.2.1.2 C19-related challenges

Four respondents cited uncertainty and trauma as a real challenge following the period of C19 and during the period of coverage.

> *"Covid and the war brought about a lot of uncertainty and trauma, we've seen crazy things, and we don't know what's going on anymore, e.g., increased interest rates = ZAR depreciates."* **(Riv)**

Deep uncertainty and the ability to adapt and strategise effectively have been advocated by Marchau et al. (2019), And it has been confirmed that it affects the company's ability to predict and act efficiently and effectively.

Respondents indicated that C19-related logistics and supply costs significantly impacted the company and the payment capacity of clients. Similarly, geographical location directly affected the logistical challenges raised in C19, affecting the firm's revenue and input costs. Respondents also alluded to local businesses that have been affected by global export- and, similarly, import safety rules. Comparatively, the impact of global economic volatility was raised.

> *"Due to the cost of inputs and freight costs, debtors' credit limits became significant; all of a sudden, you can only give half the product for the same limit, affecting revenue growth."* **(Ri)**

Numerous efforts have been made to determine the impact of logistical costs and supply chain costs on the input cost of a business. In support of the International Trade Administration (2021), SAAS is highly market-driven, with around $6 billion in imports and $10 billion in exports; as a result, the logistical sector has been increasing rapidly. Nkhonjera, M.(2020) alludes to efficiently processing and delivering products to market. Therefore, competitiveness depends on the processing and distribution across the cold chain and the logistics costs involved. Transport and logistics capabilities can greatly influence a company's competitiveness. Similarly, large expenditures in logistics and technology have caused advancement in the retail industry, e.g. logistical and technological

specialisation, hence increasing entrance hurdles for small firms that cannot envisage investing on a large scale (Basker & Noel, 2013).

At least four respondents named the ability to conduct precise market analyses and accurately predict climate or global warming elements and projections in the arena of change as the second most crucial challenge.

> *"You need to be wide awake and knowledgeable of all the different challenges."* **(Rv)**
> *"Climate predictions made us resilient in Horticulture."* **(Rii)**

This can also be related to and linked to Marchau et al. (2019) findings of deep uncertainty, producing drama and misrepresentation. Consequently, it was also acknowledged that in a rapidly changing world, the pursuit of forecasts and reliance on the analytical tools required for them could be counterproductive and even dangerous (Marchau et al., 2019).

Topics not addressed in the literature review, which will be added to additional topics noteworthy for further research in this subcategory, include:

1. Looting, which presented product transport difficulties,
2. Shifts in the general working environment and a clear cultural shift,
3. C19 increasing unnecessary meetings (inefficiencies),
4. End-user payment regimes, human capital capacities.

6.2.1.3 Resilience

Respondents cited staff management, employee empowerment, and staff engagement as important factors for retaining resilience during uncertainty and change. Similarly, consistent staff development and multiskilling individuals or multi-skill training were recommended to increase a company's resilience.

> *"You need a consistent staff development program."* ***(Rii)***
> *"Resilience is the balance between the exceptional influence of professional management; you need to keep the team balanced."* **(Rii)**

“We like to buy and sell, don’t always like the people-problems linked with the infrastructure.” (**Riii)**

There are few findings from resilience studies that pertain mainly to employee involvement. Typical responses include human capital management and balancing professional staff management and capacity. However, according to Nilakant et al. (2014) posit that while leadership and staff participation had a key influence on adaptive resilience, collaboration and learning were the catalysts that promoted continuous resilience, particularly in the public sector.

Commitment to one's core business and capabilities and building buffers were credible and remarkable comments about maintaining resilience.

*“Our biggest enemy is time, so we must create capacity and buffers.”(***Riv***)*

Comparatively, Hynes et al. (2020) dissected two ideologies that characterised gains in resilience and threat buffers. The first step is to eliminate the threat or, if that is not feasible, to lessen, tolerate, and absorb its effects. However, this method is inadequate since errors may cascade fast in today's complex environment, as we have seen with C19, and hence, efforts to minimise complexity would be expensive (Linkov & Trump, 2019). The second philosophy acknowledges uncertainty, unpredictability, and randomness of danger, therefore addressing uncertainty by establishing system resilience and focusing on the world of disruption to absorb, recover, and adapt all systems for future survival. This strategy capitalises on possibilities to advance and adapt (Linkov & Trump, 2019).

Marceau et al. (2019) addressed decision-making in the setting of profound uncertainty, citing the need for a paradigm that is not focused on forecasts of the future (known as the "predict-then-act" paradigm) but instead seeks to "watch-and-adapt" (to prepare for uncertain events). Prepare-and-adapt entails observing how the future unfolds and permitting adaptations when new knowledge is obtained through time, therefore implementing long-term strategies (Marchau et al., 2019). The "watch and adapt" paradigm openly admits and emphasises the need to account for substantial uncertainty in decision-making for unpredictable occurrences and long-term changes.

Respondents ranked access to technology and genetic enhancement high when asked how to remain adaptable.

> *"My passion is genetic innovation; it allows for resilience."***(Rii)**
> *"Genetics and technology are what we invest in."* **(Riii)**

Currently, no textbook provides a cohesive and thorough examination of the methodologies and instruments for formulating policies and strategies under high levels of uncertainty and their implementation (Marchau et al., 2019). Walker et al. (2012) are a significant outlier paper pre-2019 exploring decision-making under high uncertainty. Current research focuses on putting these innovative methodologies and technologies to the test in the field (i.e., the "real world"). New analytical tools (e.g., exploratory modelling, scenario discovery) and procedures (e.g., adaptive approaches) for dealing with profound uncertainty have been developed in relation to the theory. Thus, experimentation and implementation of these tools and methods in the actual world have commenced.

Marchau et al. (2019) demonstrated Robust decision-making (RDM) as a collection of concepts, techniques, and supporting technologies that employ computers not to provide more accurate forecasts but to make better judgments under extreme uncertainty. Marchau et al. (2019) similarly demonstrated RDM by combining decision analysis, scenarios, and modelling to test strategies through potential futures(foresight) and then identify robust adaptive methods. Histen (2022) also demonstrated that firms' boundaries are contingent on market growth and coordinating technology, and he argues that firms may more efficiently manoeuvre around change.

Culture was also mentioned as a driver of resilience at the firm level.

> *"Covid and the war brought about a lot of uncertainty and trauma, also in our company's culture. We've seen crazy things, and we don't know what's going on anymore, e.g., increased interest rates = ZAR depreciates."* **(Riv)**

Culture is perhaps the most neglected aspect of the study of risk and resilience (Feldman & Masalha, 2007,p.2). According to (Panter-Brick, 2015),

resilience is the act of mobilising resources in the face of significant adversity to achieve one's objectives. However, research on resilience and culture yields limited insights when culture is seen as a single predictive component (Panter-Brick, 2015).

Other elements of resilience alluded to by respondents and also included in adaptability Section 6.2.1.1 is:

1. Access to working capital,
2. recognition of competition,
3. co-opetition in a closed market, and
4. maintaining exponential growth were also identified as additional key resilience-building elements.

In conclusion, it is affirmed that the five essential pillars of lessons learned recommended by Mishra (2020) to improve resilience refer: 1) dynamic risk assessment tools to be revisited, 2) substitutes for community action is non-negotiable, 3) risk arises globally, resilience is triggered locally, 4) management of risk changes to the focus on managing uncertainty and 5) management of risk kindles the focus on building resilience.

6.3 RQ 2- discussion of the findings

How did post-pandemic vertical boundaries of firms in SAAS evolve?

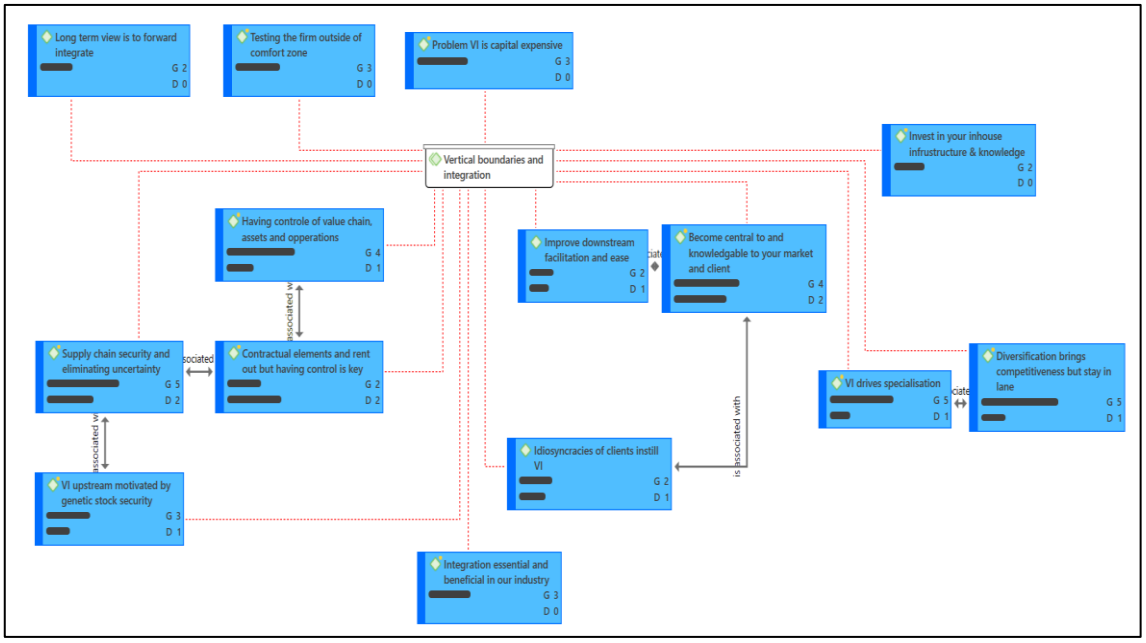
6.3.1 Theme 2- vertical boundary strategies

In order to facilitate the discussion of theme two within the realm of RQ2, the axial groups are discussed separately; however, at the onset of the section, a constructed network orthogonal tree aims to guide the reader's attention to the main concepts and associations applicable to theme two. Figure 24 provides a summary illustrating the relationships between constructs and SAAS's central concepts of vertical boundary strategies in SAAS.

The intended central theme of this research project is unmistakably the concept of vertical integration and vertical boundaries of organisations. Ri-vi was asked a few open-ended questions to ascertain the respondents' awareness of the vertical boundaries of businesses.

Figure 24

Theme 2- vertical boundary strategies in SAAS; orthogonal tree



Note. Constructed by the researcher using ATLAS.ti

6.3.1.1 Vertical boundaries and firm existence

Most respondents attribute vertical integration to the promotion of specialisation and increased profitability. Alternately, a reference was made to doing what you are strong at and avoiding what you do not understand (core competencies). Similarly, the capacity to monitor supply directly to improve supply chain security was the primary driver of integration upstream.

> *"You make money where you are specialising in."* **(Ri)**
> *"We are trying to diversify but stay in your field of specialisation."* **(Ri)**
> *"We try to remain with making everything ourselves, a small line of diversification, but within our lane".* **(Riv)**

According to Baldwin (2008), this is highly comparable to the theory of vertical integration advantages when several supply chain alterations generate a cascade of disruption and necessitate merging or redefining the supply chain. At this juncture, the market is at a disadvantage because it is difficult to price activities; time is a restriction in rapidly getting information, and enterprises' operations must be combined (Baldwin, 2008). In contrast, Histen (2022) illustrates how, as uncertainty

decreases (certainty increases; thus, in-house innovation tends to move toward autonomy), markets become more attractive and efficient (have more technological and specialised offerings), as evidenced by respondents' responses in the present day, where uncertainty has decreased. Even though firms specialise in activities appropriate to their skills, production involves coordinating complementary activities beyond the information sent via pricing, particularly in a constantly changing world (Robertson and Langlois 1995).

In addition, respondents frequently cited eliminating uncertainty and enhancing competitiveness as the leading reasons for vertical integration, which, paradoxically, was also connected to diversification boosting competitiveness, but the sentiment continued to preserve core competency emphasis.

> *"Security of supply, eliminating uncertainty, motivated the evolution of backward integration."* **(Riii)**
> *"Playoff between bureaucracy and flying by the seat of your pants." (***Rvi)**

Compared to Histen's (2022) assertion, the answer to vertical integration is contingent on a number of transaction expenses, contractual issues, and strategic considerations. In contrast, business historians tend to view the firm's borders as the result of a process that evolves through time and in reaction to change.

This directly relates to the theory of vertical boundaries since Histen (2022) showed that firms' boundaries depend on market development and coordination technology and contends that firms can manoeuvre change more effectively; nevertheless, as change diminishes, markets exceed and outperform firms over time. This notion corresponds to the most recent evolutionary lens, the Vanishing Hand (Langois, 2003).

Typically, respondents also claimed that vertical barriers and integration are demonstrated through control over the value chain, information, assets, operations, and product consolidation. On the other hand, two respondents said that investing in your internal infrastructure and expertise falls within the realm of vertical boundary strategies

“Integration is typical and beneficial to the Agri sector, but there are elements of contracting out.” **(Rii)**

“We do not own the ships; we do not own the trucks, but we own the cargo.”

“Having control until the power of the consumer is essential.” ***(Rv)***

In alignment with Holmstrom & Roberts (1998). Postulates that volatility, fluctuating frequency and interdependency, therefore, appear to facilitate, rather than inhibit, continuous collaboration, moving away from the "buy" narrative. Knowledge transfer is an example of what affects ownership patterns (Bank, 2021). This also pertains to (Besanko et al., 2017). Integration theories' stance on controlling/managing all levels of the vertical chain.

Williamson (1991) also stressed the importance of internal and market transactions-, as well as production costs and that firms should align their transactions (costs and attributes) with governance (costs and competencies) in an economising way.

When integrating downstream, respondents highlighted co-opposition and competitiveness with the customer. These respondents also highlighted why firms should integrate downstream, attributing such a strategy to clients' idiosyncrasies and becoming closer to the market and the customer. The client's capacity for upstream integration, which ensures a fair playing field, was acknowledged.

“VI Forward integration is moving into B-C non-comfort zone and getting closer to your market.” **(Rvi)**

“Not relying on idiosyncrasies of farmers, managing your own risk.” **(Rvi)**

“Competing with your clients when forward integrating. When farmers backward integrate, they also start competing with you.” **(Rvi)**

“Being central and geographically available to the market drove vertical integration.” ***(*****Riii)**

This coincides with the benefits described by Thompson et al. (2013), which allow for improved access to end users, enhanced market awareness through the establishment of local sales agents, and increased control over production and distribution routes.

All respondents cited the capital-intensive aspect of vertical integration as a challenge.

> "If we would have more working capital, we would have more room to work."(**Riii**)

Supported by the asset acquisition level in SAAS (Stats, 2020). Holland (2011) comparatively refers to the broiler industry's capital-intensive and asset-specific manufacturing process. As an example, location specificity increases the required investment amount.

In a similar manner, the notion of vertical boundaries was validated by a model that promotes value addition and flows, thereby sparking vertical integration.

> *"Being central and geographically available to the market drove vertical integration."* **Riii**
> *"Our business is so important now; we have a massive responsibility of nutrition supply to Africa, we had to control supply."* **Riii**

This is supported by Williamson's (1991) claim that economising enjoys primacy and contributes genuine economic benefit. Furthermore, common asset concerns and knowledge transfer are all examples of what affects ownership patterns (Bank, 2021). Emerging hybrid firms are also posed to exist in high uncertainty, high frequency, and asset-specific environments; however, they remain disintegrated. It is critical to revisit this dynamic aspect of firms in SAAS post-pandemic. Coase (1937) claimed that transaction costs with the market might be inefficient in a world of imperfection. As a result, formal organisation and intentional integration coordination may help to improve efficiency (Holmstrom & Roberts, 1998). This statement aligns with respondents thinking of improving efficiency.

Finally, respondents discussed the value of contractual issues and the idea of rent but said that control remained essential. Additionally, most respondents note that different divisions within the firm have separate make-vs-buy models, promoting diversification. Most respondents have both a make and a purchase model, while

one has only a make model and another only a buy model. Summaries of respondents and cases may be found in Table 2.

> *"Where one firm split into more than one division involved in the processes of the value chain."* **(Rii)**

Besanko et al. (2017) comparatively mention three common theoretical problems linked with whether a company should make or buy and depicts that balance is critical to such a strategy. Klein et al. (1978) re-examined the dangers of post-contractual opportunistic behaviour on the part of firms hypothesising that as assets get more specific, more quasi-rents will develop. Contracting will be less expensive than vertical integration in this circumstance. Leading up to Harrigan's (1986) discovery that organisations should routinely scan outsiders to see whether operations may be conducted more affordably than in-house activities. Harrigan (1986) predicted that as sectors mature, extensive vertical integration would be replaced by less vertical integration if vertical integration strategies resulted in exit barriers and cash traps rather than reliable sources of resources and markets.

Therefore, with concluding insight, the relationship between adaptation and coordination within firms, as stated by the timeline and evolution of vertical boundaries, exists and is alive and evident within SAAS. Although the nomenclature of historic theories seems to be changing and evolving with time, principal matters align with the theory of centuries of evolution. In the last two decades, firms have moved within the Vanishing hand speculation of specialisation, allowing market forces to coordinate more effectively. That integration is necessary for the extent of the market (Langlois, 2003; Histen. 2022; Chen et al., 2019; Claussen et al., 2015).

6.4 RQ 3- discussion of the findings

What post-pandemic strategising and economising narratives resonated in SAAS?

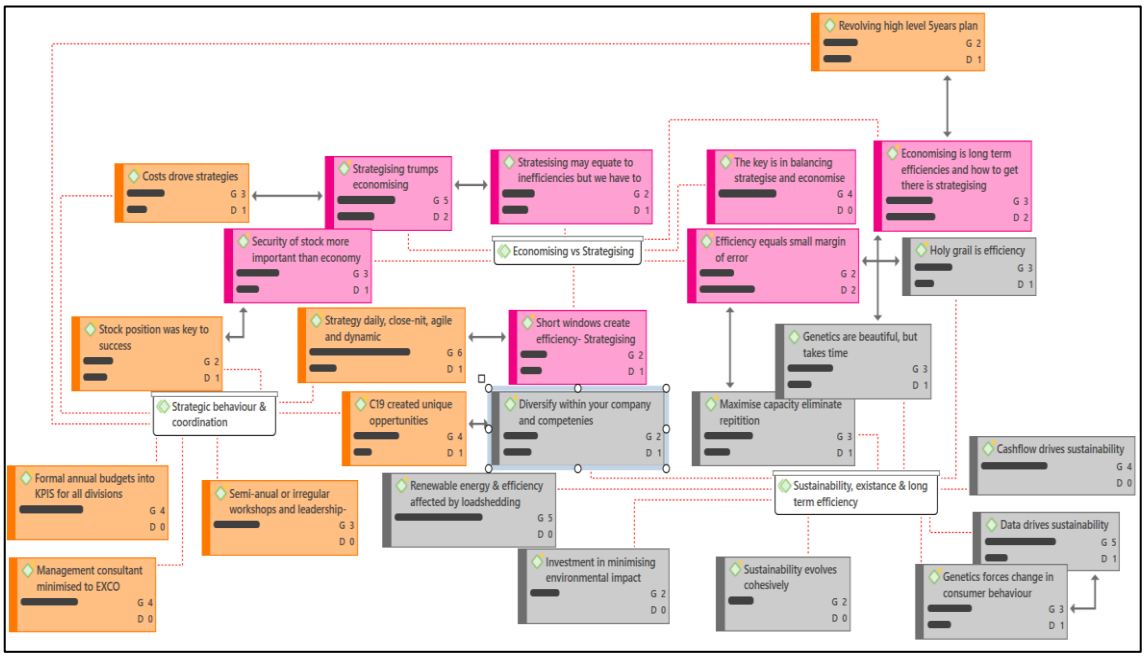
6.4.1 Theme 3- strategising and economising

Likewise, in order to facilitate the discussion of theme three within the realm of RQ3, the axial groups are discussed separately; however, at the onset of the section, a

constructed network orthogonal tree aims to guide the reader's attention to the main concepts and associations applicable to theme three. Figure 25 provides a summary illustrating the relationships between constructs and SAAS's central concepts of strategising and economising.

Figure 25

Theme 3- strategising & economising; orthogonal tree



Note. Constructed by the researcher using ATLAS.ti

6.4.1.1 Coordination and strategic behaviour

According to the majority of respondents, everyday strategic behaviour, associated with a tightly interwoven, agile and dynamic thought process, defines their company's strategy. Protocols and mentalities evolved post-pandemic, and collaboration between divisions varied.

> *"There are formal annual sessions, but we focus on informal daily sessions. We try to change our annual formal sessions so that people do not get bored." (***Ri)**

> *"We have daily interactions and strategies, eliminating weekly meetings, which I hate; it means management is not engaged." (***Riv)**

Harrigan (1986) says that firms should constantly assess outsiders to determine whether operations may be conducted more affordably than in-house activities. The more the supply chain's complexity and network density, the more challenging it is for intensely integrated businesses to maintain speed and adaptability owing to their reliance on internal resources. Therefore, the theory corresponds with the fading visible hand of management over time, "the vanishing hand" (Langlois, 2003).

Similarly, (Histen, 2022) argued that the transition of coordination, adaptability, and firms' vertical boundaries was interdependent. The market grows due to integrated firms, whereas integration depends on market growth. In contrast, Teece et al. (1997) indicate that, barring exceptional conditions, excessive "strategising" might lead businesses to underinvest in core competencies and disregard dynamic capabilities. According to Chandler (1977), systemic uncertainty causes firms to retreat and integrate to outperform the market, reflecting management's propensity for internal coordination and centralisation. However, when markets stabilise and supply chains adjust to the intensively integrated enterprises, less integration occurs due to steady market production and capabilities (Simon, 1960).

The majority of respondents indicated that C19 gave unique opportunities that challenged new supply lines within the context of an essential service (hard lockdown regulations did not necessarily hit essential services).

> *"Covid created unique opportunities to engage and adapt, e.g. Teams."* (**Rii)**
> *"Covid challenged our thinking and allowed for innovation." (**Riv)***

Similarly, Histen (2022) illustrated that firms' boundaries depend on market development and coordination technology and argued that firms could manoeuvre around change more effectively; nevertheless, as change diminishes/weakens, markets exceed and outperform firms over time. This concept is also consistent with the notion that corporate strategies should be focused on adaptation, resilience, and complex coordination due to the onset of the pandemic, i.e. C19, which introduced complexity, uncertainty, and change to the economy. (Williamson,1991) In addition, Williamson (1991) suggests that planning and strategising efforts are rarely successful if a programme is burdened by excessive manufacturing, distribution, or

organisation costs. Rarely can even the most inventive strategies and positioning save a badly flawed project based on first-order economising concerns.

Respondents informed that formal annual budgets were included within KPIs for all divisions of the majority of respondents. It was noted that internalising strategy yields far more significant benefits; the use of management consultants is reduced to between once per year and once per five years and limited to EXCO development, as it becomes tedious and timely to grasp business dynamics. However, leadership involvement and leadership training facilitated by consultants were regarded as crucial for the organisation's internal growth. Most respondents indicated that they have a high-level five-year plan, with cost being the primary driver for having and developing strategies (strategising).

> *"We have formal annual strategic sessions."* **(Rii)**
> *"Exco makes use of leadership consultant".* ***(Rv)***
> *"We get exec team management consultants to frame our rubbers stamps better, and we have leadership workshops."(**Rvi)***
> *"We articulate budgets annually and strategically look at 3yrs financially with a revolving 5-year plan."(**Rvi)***

This view is aligned with the notion that business strategy is a multifaceted topic that encompasses not only the functional areas of a company (marketing, finance, manufacturing, international business) but also economics, politics, organisation theory, and legal matters. With the rise of multinational organisations, global trade, and global competition, the significance of business strategy has grown significantly (Williamson, 1991). Williamson (1991) furthermore asserts that there are several approaches to the substantive components of corporate strategy, with the primary contenders falling into two broad categories: strategising and economising. The strategy's emphasis is on power, whereas that of the economy is on efficiency. Both of these viewpoints are pertinent to the study of business strategy. However, the prominence of power approaches (strategy) in contemporary literature overstates their relative importance and worth vs economising.

6.4.1.2 Strategising vs economising

When respondents were asked about their understanding of strategising versus economising, it was interesting to observe the divergent viewpoints. Most responders indicated that strategising trumps economising, ultimately about yield control and effectiveness. Strategising might amount to inefficiency, but it is of the utmost importance, for example, to keep more inventory on hand than necessary due to food security duties. Two respondents mentioned that strategy leads to greater efficiency and economising. One respondent mentioned they are the same. Rii referred to the utmost importance of a balanced mindset regarding economising vs strategising.

> *"Imperative to balance strategy and economy."* (**Rii)**
> *"Strategy more important to us than our economy, although inefficient, but we have to because security is more important than the economy."* (**Riii)**
> *"Strategy is small window focus, not economy."* (**Riv)**
> *"For me, they are pretty much the same thing; success lies in balancing strategies and economies."* (**Rv)**
> *"Economising is unfamiliar jargon; strategising is what we focus on."* (**Rvi)**

Williamson (1991) is the father of challenging the economic and strategy mentality. Business strategy is a complex topic. It encompasses the functional areas of business-marketing, finance, manufacturing, international business, etc.-but it is also multidisciplinary, incorporating economics, politics, organisation theory, and legal concerns. The importance of business strategy has increased with the expansion of multinational corporations and international commerce and competitiveness (Williamson, 1991). Williamson (1991) stipulates several distinct approaches to the substantive components of business strategy, and the major contenders cluster under two broad categories: strategising and economising. The strategy emphasises power, while the economy focuses primarily on efficiency.

Both of these perspectives are relevant to the study of business strategy, but the role played by power approaches(strategy) in modern literature belies their relative significance and value. Williamson (1991) consequently argues that the economy is more fundamental than strategy, or, to put it another way, that economy is the best strategy. This is the consistent core message of the transaction cost economics

perspective. The emphasis of top leaders on economising restores manufacturing and merchandising to a prominent position inside firms and on academic research agendas. Therefore, unambiguously, economising and strategy are not mutually exclusive.

Strategic manoeuvres can be used to disguise economic weaknesses. More frequently, intelligent strategies can achieve cost-effective outcomes. Williamson (1991) suggests that students of economic organisation would be better served by focusing on more prevalent economising difficulties, such as harmonisation, credible commitments, adaptation, and discriminatory alignments. It is vital to set and maintain clear priorities between strategising and economising. The efficiency (economising) examination has advanced to the point where no more work of this sort is necessary. According to Williamson's (1991) theory, we do not fully grasp the role of strategy, and we must learn strategy. Numerous new tactics and concerns are said to fall under the domain of strategy, but the most pressing realities of international competitiveness are also said to be of a strategic nature.

However, in total contradiction to these claims, while it is true that efficiency analysis of the firm-as-production-function genre has reached a high level of sophistication, Williamson (1991) postulates that this does not exhaust all significant aspects of the evaluation of efficiency. The comparative economic organisation (governance) analysis is still in its infancy, whereas the efficiency analysis incorporates production and governance costs. Moreover, Williamson (1991) advocated that, compared to strategy, economising is significantly more essential because strategising is primarily applicable to firms with market power, which constitute a small portion of the total (ephemeral market advantages ignored). Likewise, Williamson (1991) implies that planning and strategising endeavours will rarely be successful if a program is burdened by major manufacturing, distribution, or organisation cost excesses. All the ingenious ploys and positioning in the world will rarely save a severely defective project in first-order economising considerations.

Some respondents also alluded to strategising as having a mentality or thought process before five years or short-term thinking; in contrast, economising entails establishing a research and development team that increases long-term efficiency. Linked to sustainability, respondents believed that long-term thinking resides in all of

the companies within food-related endeavours. Interestingly, it was mentioned that efficiency is the Holy Grail of any business (which contradicts companies' sentiment regarding strategising), and C19 may have improved efficiency and sustainability due to the company's learning and adapting mentality being tested.

6.4.1.3 Sustainability & long-term efficiency

Data, renewable energy, cash flow, technology, and genetics in upstream supply emerged as the predominant concepts that drove and would continue to drive long-term efficiency.

> *"Sustainability and efficiency evolve over time."* (**Rii)**
> *"Genetics and global warming alter long-term thinking and innovation."* (**Rii)**
> *"Maximising capacity and eliminating repetition enables long-term sustainability."* (**Riv)**
> *"Being well informed and having data allows for good decisions."* (**Rv)**
> *"Genetics forces customers to trade down/ alter the behaviour of procurement, hence affecting sustainability."* (**Rvi)**

Argumentatively, Histen (2022) described the transition of coordination, adaptation, and firm boundaries as interdependent; the market develops because of integrated firms, and comparatively, integration depends on market developments. Figure 6 depicts the long-run vertical boundaries of the firm and how firms respond to iteration/perturbation periods over the long run.

Lately, Histen (2022) depicted that firms' boundaries depend on market development and coordination technology and uniquely argues that firms can manoeuvre around change more efficiently; however, as change or uncertainty lessens/weakens, markets surpass and outperform firms in the long run correspondingly, this concept is linked to the latest evolutionary lens, the Vanishing Hand (Langlois, 2003).

Other elements of strategising vs economising theme that emanated include:

1. cashflow drives sustainability
2. pricing narratives and margin optimisation is key
3. Investing in decreasing ecological impacts drive sustainability in SAAS

6.5 Other findings

In contrast, one respondent reversed the order of strategy and economy and was unfamiliar with the jargon. When this respondent was approached a second time to confirm his understanding, he changed his mind and returned to his previous belief that strategising is more productive and the economy is more efficient in the long term. See Figure 19.

Noteworthy findings include C19 bringing record years to the company predominantly due to the inflation of commodity prices, which distorted efficiency as profitability relative to turnover decreased (cost input increases). The respondent mentioned that C19 was just another bump in the road. It was mentioned that relationships generally improve businesses, decreasing transaction costs. This aligns with transaction cost theory, but it was interesting to note that it specifically attributed to the efficiency of our relationships instead of finances or the economy's efficiency. One respondent mentioned that C19 jeopardy increased logistics opportunities to improve relationships with one specific shipping line, improving efficiency in the long run.

A few correspondents mentioned that because agriculture operates within the realm of essential services (food security), the hard lockdown did not affect the business directly. It only affected the customer and the customer's ability to access products.

Two respondents mentioned that the term economising is unfamiliar jargon, and most respondents focused on strategising instead of economising. Showing the clear need to improve understanding and educate SAAS regarding its firms' organisation and position in the sector rather than in-house profitability and success. Mentions were made regarding the concept of long versus short-term being ambiguous. It is interesting because its alliances with efficacy versus efficiency are ambiguous (economising vs strategising).

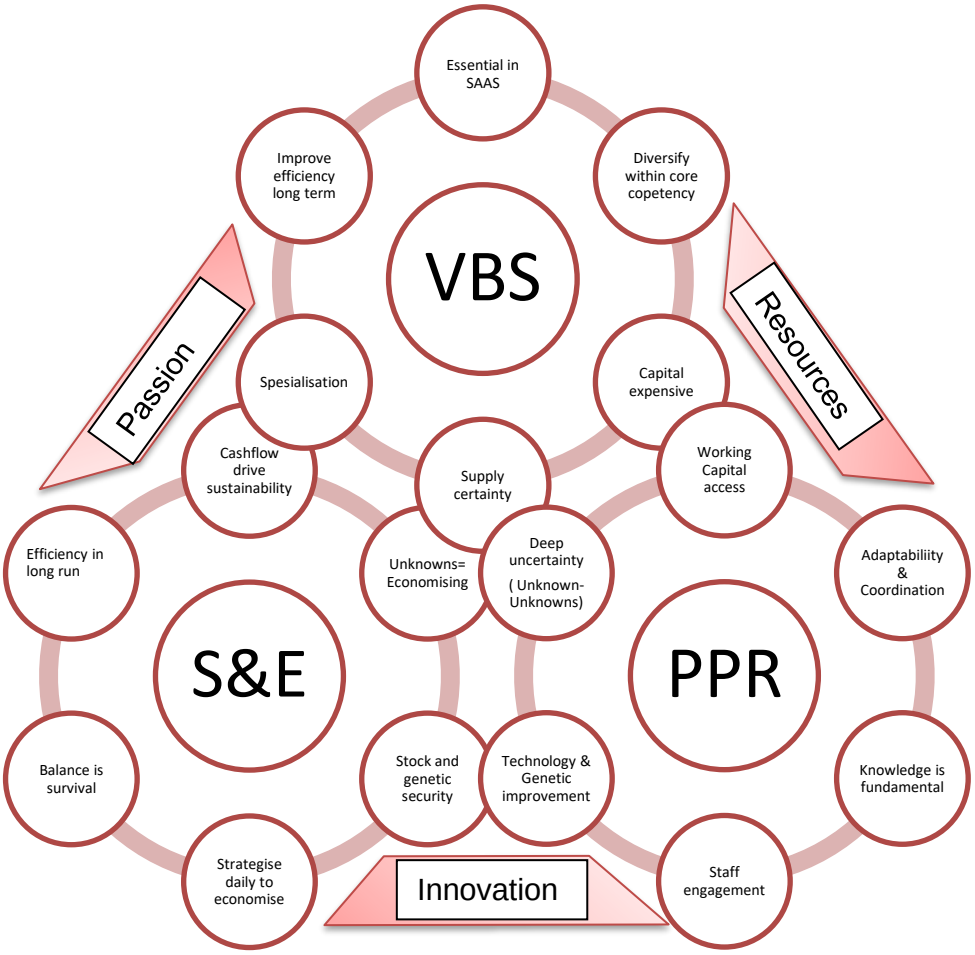
Lastly, one respondent mentioned that the company tried to keep a low profile, and another respondent was hesitant to share secondary data and not willing to share trade secrets, implying that knowledge is still power and that secrets are of utmost

concern within a realm of rapid change, effectively contradicting rapid agility/ relationship building narratives.

6.6 The dynamic gears model of strategy in SAAS

Figure 26

The dynamic gears model



PPR= Post-Pandemic Resilience, S&E= Strategising & Economising, VBS= Vertical Boundary Strategies.

Note. This figure was created by the researcher using Microsoft® Word SmartArt design.

The researcher developed the dynamic gears model based on the data and results of discussions emanating from this project. It aims to holistically address the dynamic nature of SAAS firm's strategies and economies after a period of shock. The model aims to visually explore a firm's existence and allow the firm to have a one-page

evaluation of what factors need to be regularly considered to be the most economically, in other words, efficiently positioned.

The gears model's basis is that the three larger circles represent post-pandemic resilience, strategising and economising and vertical boundary strategies, which are the core themes of the firm's existence. The idea behind the model is for the gears to run smoothly, which is the analogy optimal firm's existence in the dynamic world of business. The gears can only run smoothly when all parts are lubricated (analogy of well-functioning smaller circles, e.g., genetic improvement or technological considerations have been taken). When the leavers, which represent any constraints that might cause the firm to become static, are applied (in other words, when resources are lacking, the lever is set), the gears will become stuck and not move, which means that the entire system functions less optimal for the firm (i.e., will result in firm failure in the long run). Resources, innovation, and passion for the vision are typical levers that cause static firms and static markets. Numerous other levers can be included.

Post-pandemic resilience is a reminder of a period after deep uncertainty or shock or an unknown environment. Strategising and economising is the analogy of the firm's long-term or short-term strategic mindset and how the firm is supposed to operate within its existence. Vertical boundaries strategies illustrate what functions within the strategy and period of certain uncertainty the firm relies on out of the market, as well as what functions are relied on in-house to keep the firm successful.

The justification of the model explains how the firm consistently operates in a period of uncertainty and, therefore, should consider supply chain security. To be secure in supply, firms need to envisage backward integration. In order to be secure in delivery, the firm needs to consider forward integration. However, as the firm becomes specialised and cash flow availability cascades, the market is also busy adapting. When the market becomes more adapted, price efficiencies and transaction costs out of the market can outcompete the firm's coordination abilities. This leads to the firm having to accept moving toward less integrated levels or responses and more diversified approaches. These factors are essential when the firm wants to improve efficiency in the long run. Focusing solely on efficacy in the short run will inevitably

make the firm's strategy less optimal. Therefore the mindset needs to shift towards a more balanced approach when thinking strategy.

In the South African agricultural sector, the availability of supply, specifically genetics and technology, knowledge of all environmental influences and working capital availability would drive economic growth. Therefore, firms need to accept the responsibility to improve in-house profitability and innovation for the sake of the economy and not necessarily for the firm alone. This mindset is contrary to the historical belief vis-à-vis business analysts. Nevertheless, the period of uncertainty has brought about this agile approach, also called the Vanishing hand, due to the global networking system, which will undoubtedly influence the firm's ability to compete with the market.

Chapter 7: Conclusions and recommendations

This chapter's purpose is to summarise Chapter 5's key findings in conjunction with Chapter 6's discussions concerning the literature review (Chapter 2). It aims to conclude the project in encapsulation, therefore, revisits theme summaries and figures. Similarly, it intends to inform academics and business professionals about the relevance of this project.

The project's limitations will be summarised, and suggestions for further research will be provided. The proposed dynamic gears model, explained in Chapter 6, will be visualised and linked to the project's recommendations to prove the value to the body of knowledge.

7.1 Problem, purpose, and significance

This research project aimed to investigate and analyse the impact of C19 on the vertical boundary strategies of firms in selected industries in SAAS. It attempted to determine how firms have reacted and adapted to the disruption of their vertical supply chains during this period of extreme uncertainty, characterised as an example of fundamental uncertainty (Arthur, 2019), deep uncertainty (Marchau et al., 2019) and radical uncertainty (King & Kay, 2020), or as a "black swan" event (Taleb, 2007).

According to Williamson (2005), vertical integration is a "paradigm" problem that explains the distribution of firms and markets in contemporary economics. Argumentatively, Histen (2022) described the transition of coordination, adaptation and firms' vertical boundaries as interdependent; the market develops because of integrated firms, and comparatively, integration depends on market developments. Revisit Figure 3 for the theoretical timeline of economic evolution related to firms' vertical boundaries constructed by the researcher.

SAAS is an example of a diverse and highly integrated industry essential for food security and employment (Stats SA, 2019). SAAS is a net exporter of agriculture, highly diverse and seen as the pinnacle of agricultural growth in Africa. Production in the sector is volatile. Despite the emergence of C19, the growth rate of SAAS in 2020 was exceptionally high. During C19 in 2020, SAAS accounted for 10% of SA's

total exports, was regarded as a growth platform for the Southern African developing community and employed 70% of the rural population in SA (Statista, 2020).

However, conversely, a significant decline in production, a decrease of 22% in citrus exports, and a decrease in wool exports by 42% due to trade regulations and disease outbreaks resulted in SA (Kriel, 2022). In tandem with a fall in animal productivity and a substantial increase in feed and other input costs arising from the escalating effects of C19 and the Russia-Ukraine war, SAAS consequently contracted 7.7% to R117 billion in the second quarter, adding -0.2% to a negative GDP growth (Stats SA, 2022). Consequently, the literature and the significance of the three constructs, namely post-pandemic, vertical boundary strategies and SAAS, were reviewed, evaluated, and summarised in Chapter 2.

Three main research questions emanated from the literature review analyses: **RQ 1;** ***How were post-pandemic uncertainty, change and resilience addressed in SAAS?*** **RQ 2;** ***How did post-pandemic vertical boundaries of firms in SAAS evolve?*** **RQ 3;** ***What post-pandemic strategising vs economising narratives resonated in SAAS?***

The research adopted a qualitative analysis approach, embracing interpretivism and an exploratory, multi-case study strategy to identify and compare the insights concerning vertical boundaries strategies of leading firms' senior management. In-depth-, semi-structured-, and open-ended interviews were conducted, and secondary data were collected to investigate the three pertinent research questions.

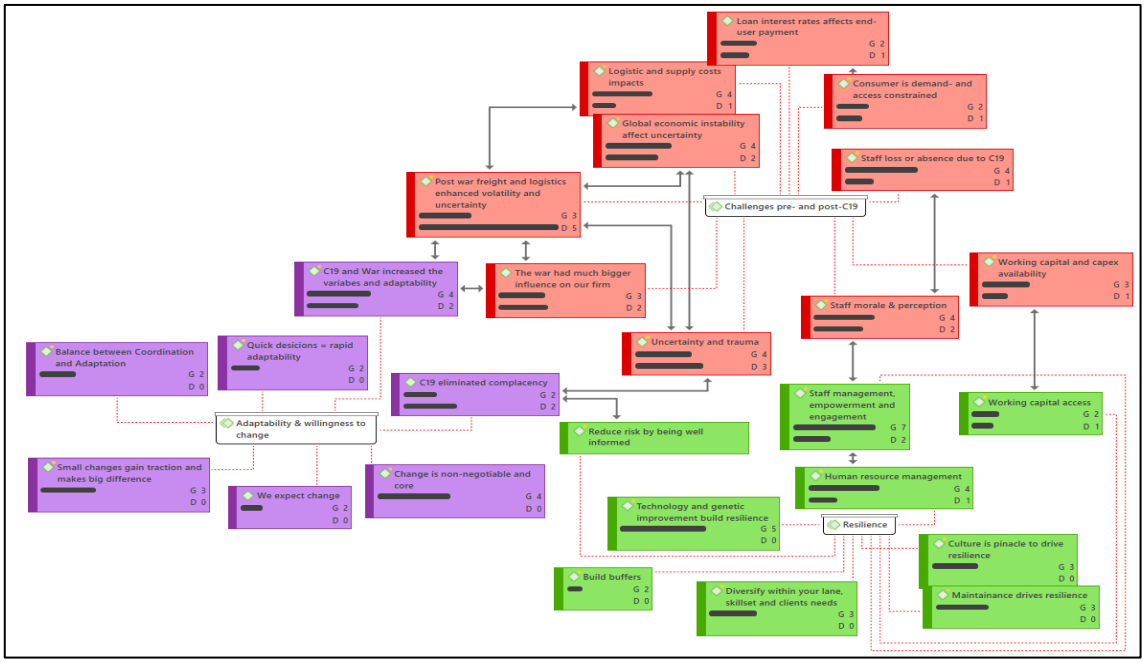
The researcher created a dynamic gears model to illustrate the value and interdependence of three themes which emanated from the results and analyses: post-pandemic resilience, vertical boundary strategies, and strategising vs economising. See Chapter 6, Figure 26.

7.1 Principal findings

Orthogonal tree figure summaries related to the three themes, as depicted in Chapter 6, will be repeated in order to facilitate theme conclusions and the grounded nature of findings finding.

7.1.1 Post-pandemic resilience

Theme 1- post-pandemic resilience; orthogonal tree



Note. Created by the researcher in ATLAS.ti22

Findings

Respondents provided numerous grounded constructs describing resilience after a shock and deep uncertain periods in SAAS. Key identifiers were that respondents recognised that C19 has eliminated complacency and increased resilience and adaptability, allowing for quick decisions and a balance between coordination and adaptation. Most respondents confirmed the idea behind adaptability, coordination, uncertainty and change as being of utmost importance to the company's survival. Challenges related to C19 were excavated and acknowledged with a unique set of outcomes; however, most firms confirmed that back-to-back uncertainty, for example, the pandemic and, after that, the Russian-Ukrainian war, had an even larger effect on resilience. Global economic instability and logistics were also noted as prime concerns. Staff and engagement, culture was constructs recognised of utmost importance by most respondents; technology and the influence of genetic improvement and building buffers were regarded as similarly significant.

Evaluation

The findings in this research project are related to the seminal work by Hynes et al. (2020), which argues that crises are non-repetitive. Complacency is repetitive and

causes the business environment to believe it can manage and contain future crises (e.g. SARS vs the latest C19). However, anticipation and foresight only give us insight into how future occurrences might significantly affect the business environment. Hynes et al. (2020) concluded that shocks due to vast interconnectedness might be induced from unrelated sectors.

Similarly, anticipating all possible threats will be difficult; therefore, systems must instead be designed to be adaptable and resilient and to build capacity regardless of the challenge on the horizon. Furthermore, the primary difference between risk and uncertainty is that risk is quantifiable, but uncertainty is neither quantifiable nor foreseeable (Hasa, 2021). In finance and business, uncertainty refers to the inability to foresee outcomes or consequences due to a lack of data or knowledge, which renders prediction impossible (the unknown-unknowns). There are many conceivable outcomes, but neither their occurrence nor consequences are known (Hasa, 2021). Prepare-and-adapt entails observing how the future unfolds and permitting adaptations when new knowledge is obtained through time, therefore implementing long-term strategies (Marchau et al., 2019). The "watch and adapt" paradigm openly admits and emphasises the need to account for substantial uncertainty in decision-making for unpredictable occurrences and long-term changes.

Gu et al. (2020) justified the scope for policymaking to give appropriate government aid to businesses worthy of assistance. Emphasis was determined to be on fiscal policy decisions, swift implementation, and the undoubtedly need to assess the long-run impact of C19 uncertainty on the economy (Gu et al., 2020). It serves as a platform for aid recognition in SAAS.

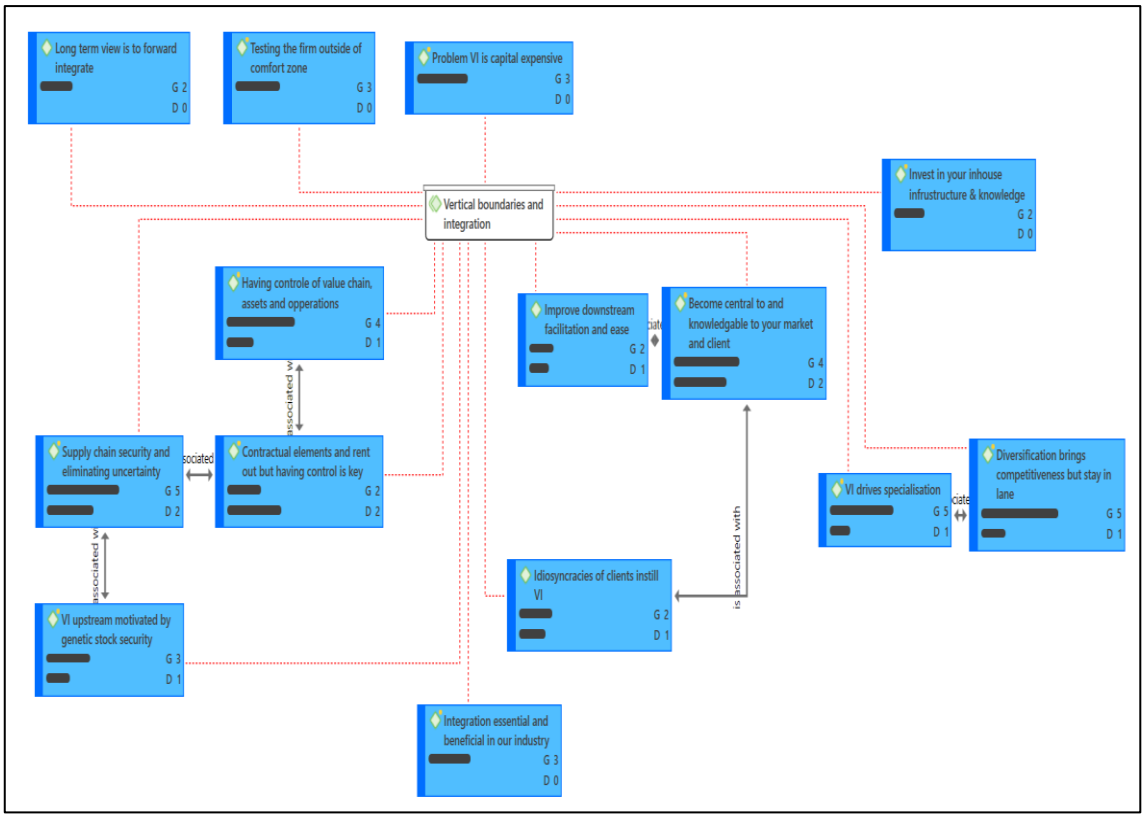
According to Nilakant et al. (2014), while leadership and engagement had a critical impact on adaptive resilience, collaboration and learning were the catalysts that promoted continuous resilience, particularly in the public sector. In addition, culture is recognised as the most neglected topic in the study of risk and resilience when risk and resilience are combined (Feldman & Masalha, 2007). According to (Panter-Brick, 2015), resilience is the act of mobilising resources in the face of significant adversity to achieve one's objectives. However, research on resilience and culture

yields limited insights when culture is seen as a single predictive component (Panter-Brick, 2015).

SAAS has witnessed remarkable economic and human development growth over the previous decades. As evidenced by C19 and the recent Russia-Ukrain war, most of this development was jeopardised. C19 and other events over the past two decades have illustrated the consequences of failing to reduce these risks. SAAS therefore, must also bolster its adaptability and resilience structures in periods of shock, becoming more advanced during periods of deep uncertainty.

7.1.2 Vertical boundary strategies

Theme 2- vertical boundary strategies in SAAS; orthogonal tree



Note. Constructed by the researcher using ATLAS.ti2

Findings

A diversified mindset emanated from the data regarding vertical boundary strategies. Five respondents acknowledged supply chain security and eliminating uncertainty as the prime objective of vertical integration. Some respondents mentioned that downstream integration is more critical to get central to the market and to eliminate

end-consumers idiosyncracies. At the same time, others mentioned that upstream integration is more critical to secure supply and control the value chain and assets during times of uncertainty. However, all respondents mentioned that vertical integration drives specialisation, ensuring that the company remains within its core competencies and invests in in-house infrastructure. Another noteworthy response was that diversification brings competitiveness; however, five respondents believe that you need to stay within your core competency, which becomes problematic in the realm of diversification. It was also evident that vertical integration is capital expensive and not easy, yet regarded as necessary for SAAS.

Evaluation

The evolution of the firm boundaries is constructed in a timeline; revisit Figure 3. The evolution of numerous theories is evident when a firm considers its position, its organisation and strategic thinking. The most recent work done by Histen (2022) encapsulates the firm's dynamic capabilities and the environment in which it operates.

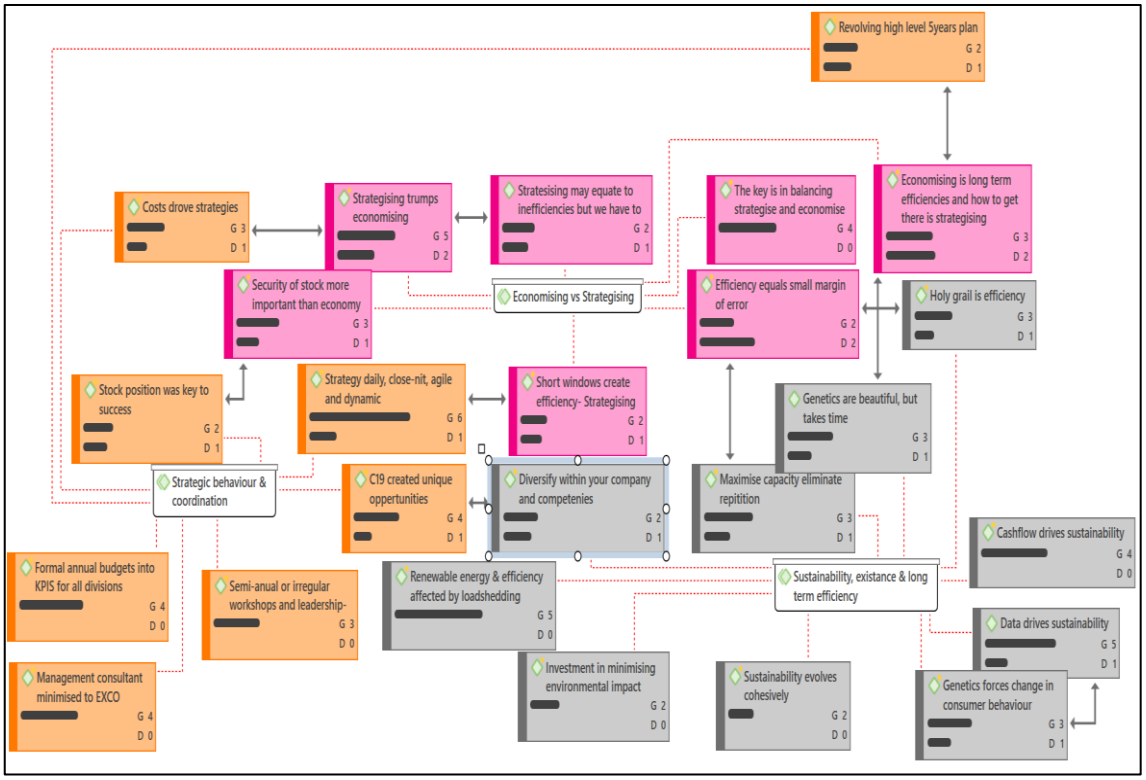
Holland (2011) summarised firms' choice of organisation as being contingent on decisions to minimise their transaction and production costs, decisions that have a significant impact not only on the firm's boundaries but also on supply chain organisation and industry competition dynamics. Ketokivi & Mahoney (2020) also alludes to the importance of transaction cost economics in firms' boundary decisions. For this project's scope, however, transaction cost economics was not studied in the singularity and was notable in respondents' results.

Histen (2022) regarded vertical integration as tremendously dynamic, even when internal governance and external transaction costs are constant. The literature on transaction costs tends to emphasise organisational design as a choice of firms or markets as fully developed and available choices, ignoring the critical role played by the market institution as a gradual process (Histen, 2022). Finally, the firm's boundaries cannot be determined solely by static transaction cost factors (Histen, 2022). Histen (2022) depicted that firms' boundaries depend on market development and coordination technology and uniquely argues that firms can manoeuvre around change more efficiently; however, as change or uncertainty lessens/weakens, markets surpass and outperform firms in the long run.

Correspondingly, this concept is linked to the latest evolutionary lens, the Vanishing Hand (Langlois, 2003). As shown in Figure 3, specialisation allows market forces to coordinate more effectively. Recently, it has been postulated that firms should have a systemic mindset that equates to how environmental changes can affect firms' systemic outcomes (Histen, 2022). Similarly, this work concatenates with Teece et al. (1997), which defined dynamic capabilities as the firm's capacity to integrate, develop, and restructure internal and external skills in response to fast-changing circumstances. Given route dependencies and market positioning, dynamic capabilities represent an organisation's capacity to attain new and novel types of competitive advantage (Teece et al., 1997).

7.1.3 Strategising vs economising

Theme 3- strategising & economising; orthogonal tree



Note. Constructed by the researcher using ATLAS.ti

Findings

"The economy is the best strategy" (Williamson 1991, p. 77)

As summarised in detail in Chapter 6, all companies attributed daily strategy, agility, and dynamic strategic thinking as the core behaviour of coordination and the

company's strategy. This means that strategy effectively trumps economy, yet three respondents said that the Holy Grail is efficient, illustrating the understanding of efficiency coupled with daily strategy. Most respondents noted that formal annual budgets are conducted, and semi-annual or irregular workshops for staff members or arranged, with a high-level 5-year plan noted for two respondents. When discussing sustainability, all respondents mentioned the idea behind renewable energy, new technologies and genetic improvement, which will affect efficiency, and long-term thinking. Four companies mentioned that cash flow would drive stainability. Five companies mentioned that data drives sustainability. Lastly, three respondents mentioned that efficiency is economising, which is long-term, and strategising how to get there.

Evaluation

Interesting and pertinent data arose from this study showing that although leadership's mentality unambiguously leans towards strategising, the belief in efficiency and long-term sustainability was also considered significant. This contradicts the theory of Williamson (1991), who consequently argued that the economy is more fundamental than strategy, or, to put it another way, claiming that the economy is the best strategy. Similarly, this remains the core message of transaction cost economics. The emphasis of top leaders on economising restores production and merchandising to a prominent position inside firms and on academic research agendas. Therefore, unambiguously, economising and strategising are not mutually exclusive.

Finally, strategic manoeuvres can be used to disguise economic weaknesses. More frequently, intelligent strategies can achieve cost-effective outcomes. Williamson (1991) suggests that students of economic organisation would be better served by focusing on more prevalent economising difficulties, such as harmonisation, credible commitments, adaptation, and discriminatory alignments. It is vital to set and maintain clear priorities between strategising and economising.

Without ambiguity, firms in SAAS need to consider in-house coordination and market development adaptation as dynamically related strategies within the economic setting. Historically and still today, the sentiment remains that most firms in SAAS have a strong preference towards coordination, strategising and in-house

specialisation rather than having a globally market-related economic orientation. Firms have to deal with this daily. The economic principles and the evolution of economic theories underlying this research project are of great value. See Figure 3. It needs to be revisited by firms within the realm of the firm's strategic and economic culture, as it is not of prime concern in SAAS and or not familiar territory.

7.2 Implications for business

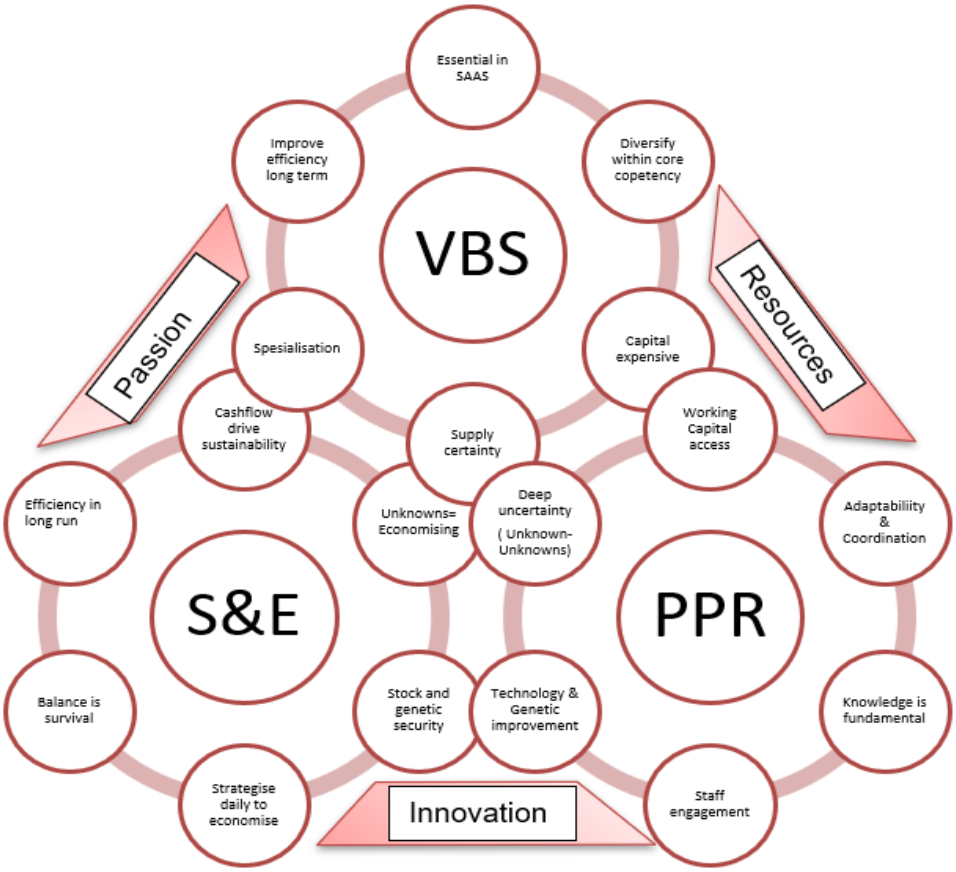
7.2.1 Practitioners

“A bishop in hand is worth less than a rook, but the position on the board matters” (Histen, 2022, p.18).

Managing value chains by dominant entities necessitates an awareness of the dynamics at numerous stages of the value chain, especially for firms looking to enter this market. Effective entrance requires substantial assistance measures that recognise the challenge of entry in the face of vertically integrated, well-established enterprises (Nkhonjera, 2020). The potential for unilateral or coordinated use of market power in each industry is evident. The importance of supported entry, including links to necessary inputs, investment financing and warehousing partnerships, was documented (Nkhonjera, 2020). There is substantial potential for employment recovery, innovation, and expansion if smaller enterprises can effectively compete with larger firms in a more competitive industry.

The dynamic gears model (constructed by the researcher in Chapter 6), Figure 26, is revisited below for depiction purposes to business practitioners and was developed based on the data and results of discussions emanating from this project. It aims to holistically address the dynamic nature of SAAS firm's strategies and economies after a period of shock. The model aims to explore a firm's existence visually and allow the firm to have a one-page evaluation of what factors need to be regularly considered to be the most economically, in other words, efficiently, orientated to be able to add value within the industry.

The dynamic gears model



PPR= Post-Pandemic Resilience, S&E= Strategising & Economising, VBS= Vertical Boundary Strategies.

Note. This figure was created by the researcher using Microsoft® Word SmartArt design.

7.2.2 Academia

In 2022, research by academics and business consultancies recommended holistic approaches in a rapidly changing, uncertain and complex environment for firms to develop more resilient, economic, strategic, efficient, and sustainable strategies (McKinsey, 2022).

SAAS need to revisit the five pillars identified by Mishra (2020) for firms to manage risk and uncertainty during uncertainty: 1) dynamic risk assessment tools to be revisited, 2) substitutes for community action is non-negotiable, 3) risk arises globally, resilience is triggered locally, 4) management of risk changes to the focus on managing uncertainty and 5) management of risk aims to focus on building resilience.

The emphasis of top leaders on economising restores production and merchandising to a prominent position inside firms and on academic research agendas. Therefore, unambiguously, economising and strategising are not mutually exclusive. Williamson (1991) suggests that students of economic organisation would be better served by focusing on more prevalent economising difficulties, such as harmonisation, credible commitments, adaptation, and discriminatory alignments. This research project has proven this theory as firms' strategic practices have indeed been adapted during these times of deep uncertainty.

7.3 Limitations of the research

Replicability

Replicability may be difficult given the level of analyses, respondents' insight into all decisions during analysis, and the extent of data obtained/ disclosed regarding companies' strategies (Queirós & Almeida, 2017).

Objectivity and bias

Objectivity was not always maintained as interpretivism seeks subjectivity, and companies' strategies might not be fully disclosed. Nevertheless, ironically this speaks to the nature of interpretivism, asking why and how regularly. (Queirós & Almeida, 2017). Biasness must be acknowledged as interpretations remained that of the researcher, however

Verifiable

The study may be deemed non-quantifiable / verifiable and challenging to establish cause-and-effect connections, as microeconomic theories are evolutionary and complex. However, this study aimed to obtain a holistic and empirical view of companies' post-pandemic strategies and how these strategies evolved. Therefore, the quantity might remain subjective (Queirós & Almeida, 2017).

Generalisability & participants per case

Queirós & Almeida (2017) refer to projects that might not be regarded as generalisable from the sample to the population and might pose limitations. SAAS is incredibly vast and diversified, and only 6 cases were selected; therefore, it was difficult to justify the selection of the cases; however, in the interest of extending the representation on the top firm level, generalisability may very well be granted. The difficulty in interviewing more top leaders within the firms also brought about a

possibility for further research and studying the cascading effect of vertical boundary strategies down the hierarchy of the company organogram.

Trust

Trust was crucial, as companies may have viewed talking about intrinsic strategies as highly confidential, not giving away any trade secrets. Therefore ensuring confidentiality by providing detailed explanations of the problem before the interviews and ensuring that respondents were highly regarded as adding to the body of knowledge was of utmost importance. Ethically, this topic was also considered highly confidential and was carefully treated when engaging in enquiries regarding whether participants agreed to participate or not (Queirós & Almeida, 2017). Notwithstanding, the multiple-case study investigated a complex issue with multiple variables under analysis. Unfortunately, respondents were hesitant to share financial statements and strategic documents.

Time horizon

This paper aimed to innovate, design and critically challenge current long-standing theoretical and empirical assumptions (Queirós & Almeida, 2017), but a longitudinal study would perhaps serve better.

7.4 Recommendations for future research

The case study may further the reality of the in-depth research employed for this project by longitudinally addressing the cascade effect of strategy and data validity and by interviewing additional leadership team members. Additional cases can be added to ensure triangulation and build the trustworthiness of SAAS. In-depth financial analysis contributions or value-added services might be presented to senior management, and a nondisclosure agreement may be formed to conduct a longitudinal study enhancing the qualitative aspect of microeconomics.

Techniques for measuring SAAS economic performance need to be revisited. Gu et al. (2020) portrayed techniques using power utilisation. The long-term efficiency of SAAS needs to consider measuring data and the validity of statistics in general, as seminal journal articles in this research field are minimal. In addition, risk management tools (Monte Carlo technique) should be studied together with uncertainty management tools (RDM) to create an optimal computer-based technique for SAAS.

Interdependencies must be drawn between the dynamic gears model and dynamic capabilities (Teece et al. 1997) and agent-based dynamic evolution models (Histen, 2022) to fine-tune theories and overlay practical implementation strategies to SAAS.

Finally, it can be argued that the "unknown unknowns" could open the door to an additional investigation into this phenomenon. The literature poses ample enquiry into firms being able to prepare for the future effectively and efficiently and whether the current capacity is proportional to the future capacity. Histen (2022) implies that the market loses functionality during vulnerability and uncertainty; however, when the market recovers and adapts, the firm's internal functionality may be at stake—showing the clear need to improve this understanding and educate SAAS in terms of its firms' organisation and position in the sector rather than in-house profitability and success.

7.5 Conclusion

The answer to this study's three research questions was developed and tested in the SAAS. A dynamic gears model was created to illustrate the value of three themes emanating during RQ's results' analyses: post-pandemic resilience, vertical boundary strategies, and strategising vs economising. A theoretical timeline visualises complex firm organisation within economic evolution, reflecting leadership's strategic and economic mindset. It was affirmed that contrary to the argument by Williamson (1991), SAAS firms are not economically but instead strategically focused. Seminal research on vertical boundary strategies within the South African agricultural sector setting and their effect on the economy has been minimal.

Principal findings aligned with the agent-based model of Histen (2022), arguing that integrated firms better negotiated systemic change and deep uncertainty. However, as uncertainty decreases, markets outperform firms, indicating that dynamic interdependencies exist and vertical integration is crucial in market expansion and firm existence. Effective and efficient firm coordination and partnerships have the potential for employment recovery, innovation, and economic expansion if smaller enterprises can effectively compete with larger firms in a more competitive industry.

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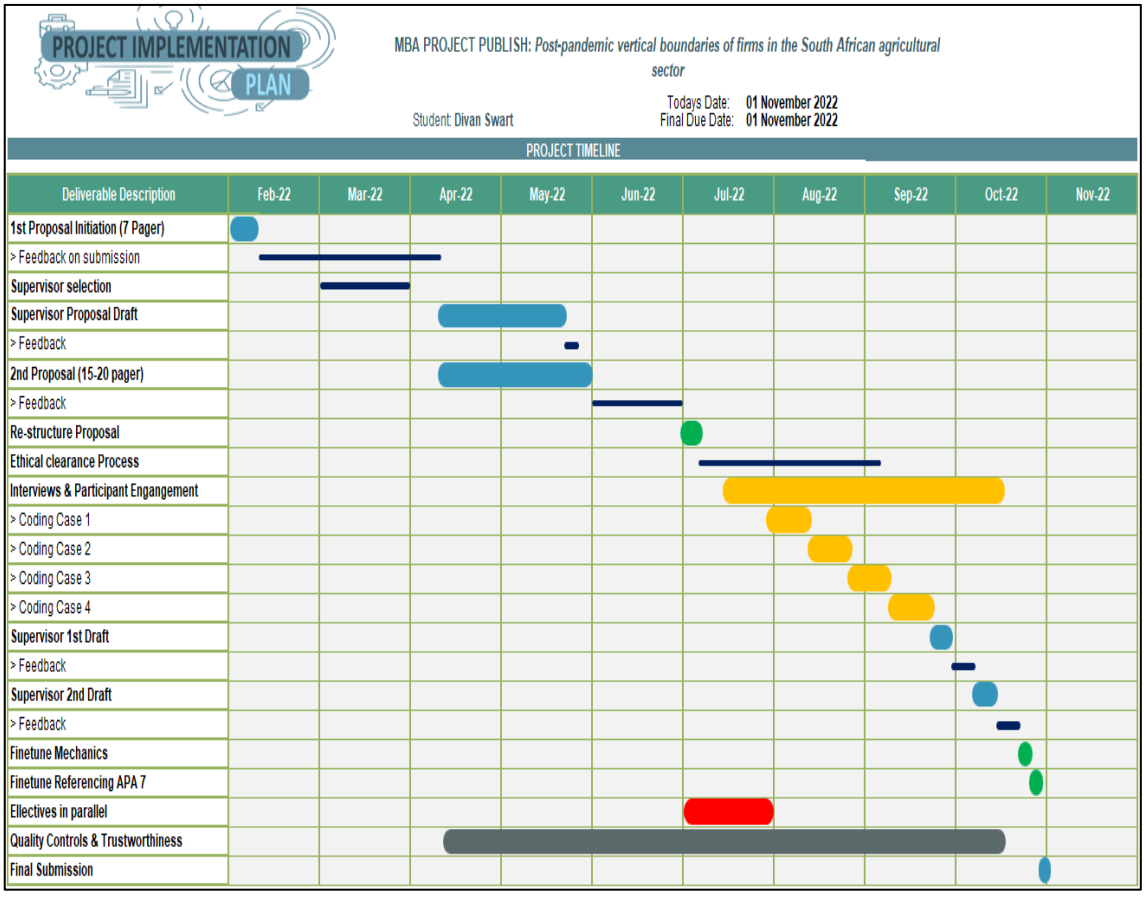
Appendix A:

Consistency matrix

Research questions	Sections in the literature review	Data collection tools	Analyses techniques
RQ1- *How were post-pandemic uncertainty, change and resilience addressed in SAAS?*	• Section 2.2 1. Antipova,(2020), 2. Arthur (2019), 3. Desai (2022), 4. Ding et al. (2020), 5. Feldman & Masalha, 2007; 6. Gu et al. (2020), 7. Hasa (2021), 8. Hynes et al. (2020), 9. King and Kay (2020), 10. Linkov & Trump, (2019). 11. Marchau et al. (2019), 12. Mishra (2020), 13. Nilakant et al. (2014) 14. Nilakant et al. (2014); 15. Panter-Brick, 2015). 16. Reinhart (2020), 17. Taleb (2007), 18. Van Kets (2022), 19. Walker et al. (2012).	Questions in Appendix; interview guide; Section 1. ,Microsoft® Teams Organisational records Public data domain (associations)	• ATLAS.ti22, Code and Thematic content analyses. Binary Code formation, Word Clouds and results. • See CH 5.4.1
RQ2- How did post-pandemic vertical boundaries of firms in SAAS evolve?	• Section 2.3 & 2.4 1. Arend, (2022). 2. Arora et al., (2001). 3. Baldwin (2008), 4. Bank (2021), 5. Baye & Prince (2017), 6. Besanko et al. (2017), 7. Chandler (1993), 8. Chen et al., 2019, 9. Claussen et al , 2015, 10. Coase (1937), 11. Gibbons (2005), 12. Greenberg (2016), 13. Grossman & Hart (1986), 14. Grout (1984), 15. Harrigan (1986), 16. Histen (2022), 17. Holland (2011), 18. Holmstrom & Roberts (1998), 19. Jacobides & Winter (2015), 20. Joscow (2010), 21. Ketokivi & Mahoney (2020), 22. Klein et al. (1978), 23. Langlois (2003, 24. Louw et al. (2011), 25. Nkhonjera (2020). 26. Noble (1984), 27. Simon, (1960). 28. Thompson et al. (2013), 29. Vermeulen (2008), 30. Williamson (1971), 31. Williamson (1991).	• Questions in Appendix; interview guide; Section 2. Microsoft® Teams • Organisational records • Public data domain (associations)	• ATLAS.ti22, Code and Thematic content analyses. Binary Code formation, Word Clouds and results. • See section CH 5.4.2
RQ3- *What post-pandemic strategising vs economising narratives resonated in SAAS?*	• Section 2.3.4 1. Gu et al. (2020), 2. Harrigan (1986), 3. Histen (2022), 4. Mishra (2020), 5. Teece et al.(1997), 6. Williamson (1991), 7. Williamson (2005).	• Questions in Appendix; interview guide; Section 3. Microsoft® Teams • Organisational records • Public data domain (associations	• ATLAS.ti22, Code and Thematic content analyses. Binary Code formation, Word Clouds and results. • See CH 5.4.3

Appendix B:

Project Plan



Deliverable Description	Start Date	End Date	Notes	#Days Allocated	Days To Due Date
1st Proposal Initiation (7 Pager)	01 February 2022	09 February 2022	5% of Annual mark allocation	8	DONE
> Feedback on submission	09 February 2022	09 April 2022	Re-align feedback, triangulate ready for 2nd Proposal	59	DONE
Supervisor selection	01 March 2022	31 March 2022	Mike Holland	30	DONE
Supervisor Proposal Draft	09 April 2022	23 May 2022	Prep Draft	44	DONE
> Feedback	23 May 2022	30 May 2022	Mike Holland	7	DONE
2nd Proposal (15-20 pager)	09 April 2022	31 May 2022	09h00 SUBMIT. 10% of Annual mark allocation	52	DONE
> Feedback	31 May 2022	30 June 2022	Document Supervisor Interactions & prep informed consent letter	30	DONE
Re-structure Proposal	30 June 2022	04 July 2022	Re-align feedback, triangulate, finetune methodology	4	DONE
Ethical clearance Process	04 July 2022	05 September 2022	Re-align feedback, triangulate, finetune methodology	63	DONE
Interviews & Participant Engangement	15 July 2022	14 October 2022	Data collection and AtlasTI Working	91	DONE
> Coding Case 1	29 July 2022	12 August 2022	Data collection, analyses and AtlasTI Working	14	DONE
> Coding Case 2	12 August 2022	26 August 2022	Data collection, analyses and AtlasTI Working	14	DONE
> Coding Case 3	26 August 2022	09 September 2022	Data collection, analyses and AtlasTI Working	14	DONE
> Coding Case 4	09 September 2022	23 September 2022	Data collection, analyses and AtlasTI Working	14	DONE
Supervisor 1st Draft	23 September 2022	30 September 2022	Prep Draft	7	DONE
> Feedback	30 September 2022	07 October 2022	Mike Holland	7	DONE
Supervisor 2nd Draft	07 October 2022	14 October 2022	Prep Draft	7	DONE
> Feedback	14 October 2022	21 October 2022	Mike Holland	7	DONE
Finetune Mechanics	21 October 2022	25 October 2022	Align Editing, Fonts, Style and Rubric	4	DONE
Finetune Referencing APA 7	25 October 2022	29 October 2022	Align Editing, Fonts, Style and Rubric	4	DONE
Quality Controls & Trustworthiness	09 April 2022	14 October 2022	Check Credibility, Transferability, Dependability, Confirmability	188	DONE
Electives in Parallel	01 July 2022	31 July 2022	Crunch Time> Data Analyses	30	DONE
Final Submission	29 October 2022	01 November 2022	17h00 Submission Hand In	3	DONE

Appendix C:

Interview guide

Semi-Structured Interview guide

Interview guidance (pool of questions). Brief introduction of concepts. Define research—ease in— with open-ended nature. Aim to understand the true core of how firms' strategies moved during and after C19. Refer to the interview protocol in section 4.2.5; Data gathering process.

Post-Pandemic change (Section 1):

- What was the firm's significant challenge before, during and after Covid 19?
- How would you describe the firm's resistance/openness to change?
- How has the firm adapted throughout Covid 19? Why?
- *How would you describe the firm's adaptability/ ability to-/ willingness to change?*
- Would you attribute the firm's strategic responses to coordinating, adapting, or both? Why?
- How would you describe resilience in your industry?
- How do you remain resilient?
- What strategic shifts have been executed after Covid 19 (2020)? Why?

Vertical boundaries (Section2):

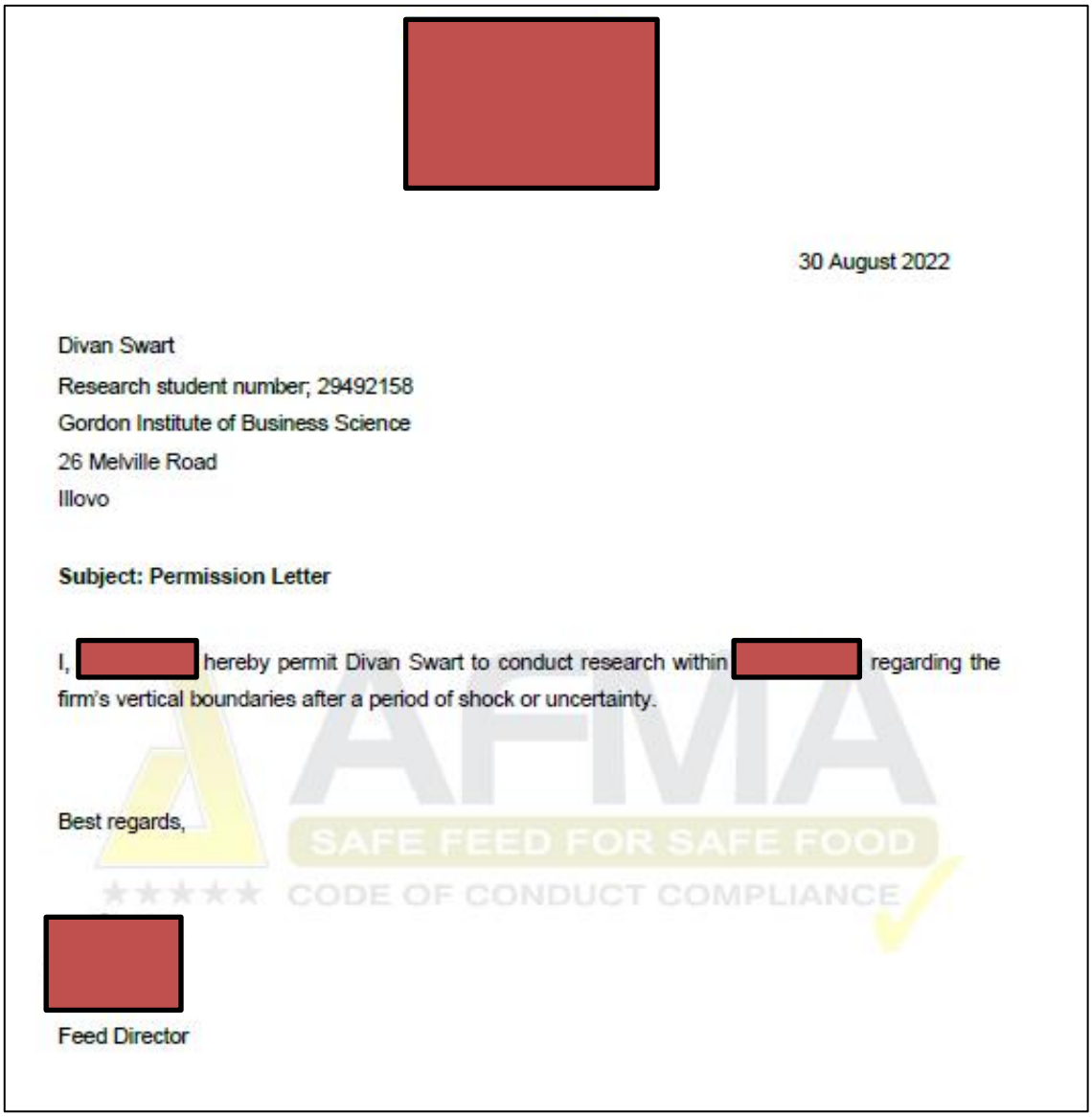
- What do you understand about vertical integration?
- Define in your understanding the firm's vertical boundaries.
- Does the firm make or buy, or both and why? Explain.

Strategising vs Economising (Section 3)

- Explain your company's behaviour during strategic sessions. E.g. Consultant used? E.g., Days spent per year?
- How has the firm's philosophy/ strategy migrated through recent years?
- Explain your understanding of the strategising vs economising concept (efficacy vs efficiency).
- Define in your words the term sustainability/ long-term efficiency.
- How can you play or exist better?

Appendix D:

Permission letter example



30 August 2022

Divan Swart
Research student number; 29492158
Gordon Institute of Business Science
26 Melville Road
Illovo

Subject: Permission Letter

I, [redacted] hereby permit Divan Swart to conduct research within [redacted] regarding the firm's vertical boundaries after a period of shock or uncertainty.

Best regards,

[redacted]
Feed Director

Appendix E:
Consent letter example

Informed Consent Letter

To whom it may concern,

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I'm researching firms' vertical boundaries after a period of shock or uncertainty. I'm specifically trying to find out more about the post-pandemic vertical boundary strategies in the agricultural sector of South Africa.

Our interview is expected to last about one hour. It will help us understand how firms have navigated vertical boundaries (i.e., a collection of activities involved in producing things or providing services, ranging from purchasing raw materials to production, distribution, marketing, and sales.) after the Covid-19 pandemic and thereby contribute to the body of knowledge in the South African agricultural sector.

Your participation is voluntary, and you can withdraw at any time without penalty.

All data will be reported without identifiers and treated as confidential. Don't hesitate to contact my supervisor or me if you have any concerns. Our details are provided below.

Researcher:	Research Supervisor:
Email:	Email:
Phone:	Phone:

Signature of participant: _____

Date: _____

Signature of researcher: _____ _____

Date: _____

Appendix F:

MREC ethical clearance approval

GIBS ETHICAL CLEARANCE APPLICATION FORM 2021/22

G. APPROVALS FOR/OF THIS APPLICATION

When the applicant is a student of GIBS, the applicant must please ensure that the supervisor and co-supervisor (where relevant) has signed the form before submission

STUDENT RESEARCHER/APPLICANT:

29. I affirm that all relevant information has been provided in this form and its attachments and that all statements made are correct.

Student Researcher's Name in capital letters:	[redacted]
Date:	25 Jul 2022
Supervisor Name in capital letters:	[redacted]
Date:	25 Jul 2022
Co-supervisor Name in capital letters:	
Date:	25 Jul 2022

Note: GIBS shall do everything in its power to protect the personal information supplied herein, in accordance to its company privacy policies as well the Protection of Personal Information Act, 2013. Access to all of the above provided personal information is restricted, only employees who need the information to perform a specific job are granted access to this information.

Decision:

Approved

REC comments:

Goodluck

Date: 26 Aug 2022

Appendix G:

Raw data; codes, binary format

	R i	R ii	R iii	R iv	Rv	R vi	Totals
Access to skill and building skill in rapidly changing environmentGr=3	1	0	0	0	0	1	2
Acknowledge competitors and co-opitition in closed marketGr=2	0	0	0	1	0	1	2
Adaptability made us resilient initiallyGr=2	1	0	1	0	0	0	2
Back to office policy created nimblenessGr=2	0	0	1	0	0	1	2
Balance between Coordination and AdaptationGr=2	0	1	0	1	0	0	2
Balance between exceptional influence of professional managementGr=3	0	1	0	1	0	0	2
Balance of financing need vs growth capabilityGr=2	0	1	0	0	0	1	2
Balance statement is importantGr=3	0	1	0	1	1	0	3
Be a market leader-proof in the puddingGr=2	1	0	0	1	0	0	2
Beaurocratic and agility trade-offGr=2	0	1	0	0	0	1	2
Become central to and knowledgable to your market and clientGr=4	1	0	1	1	0	1	4
Build buffersGr=2	0	0	0	1	1	0	2
C19 and War increased the variabes and adaptabilityGr=4	0	1	0	1	1	1	4
C19 brought growth and record yearsGr=3	1	0	1	0	1	0	3
C19 created unique oppertunitiesGr=4	0	0	1	0	1	0	2
C19 eliminated complacencyGr=2	1	0	0	0	1	0	2
C19 improved efficiency and sustainabilityGr=2	1	0	0	1	0	0	2
C19 increased unnessassary meetingsGr=2	0	1	0	1	0	0	2
C19 just another pump in the road.Gr=2	0	0	1	0	0	1	2
Cashflow drives sustainabilityGr=4	1	0	1	0	0	0	2
Change is non-negotiable and coreGr=4	0	0	1	1	0	1	3
Closed SAAS marketGr=2	1	0	0	1	0	0	2
Consistent staff developement and multiskill trainingGr=5	0	1	1	1	0	1	4
Consolidation of productGr=2	0	1	0	0	1	0	2
Constantly change and adapt in short runGr=8	1	1	0	1	1	1	5
Consumer is demand- and access constrainedGr=2	0	0	0	0	1	1	2
Contractual elements and rent out but having control is keyGr=2	0	1	0	0	1	0	2
Coordination differ within the divisionsGr=3	1	1	0	0	0	0	2
Costs drove strategiesGr=3	1	0	0	1	0	0	2
Culture changeGr=3	0	0	0	1	0	1	2
Culture is pinacle to drive resilienceGr=3	1	0	1	0	0	1	3
Currency fluctuations and credit limitsGr=3	1	0	1	0	1	0	3
Data drives sustainabilityGr=4	1	0	1	1	1	0	4
Dicipline and procedure changesGr=2	0	1	0	1	0	0	2
Diesel accounts due to loadsheddingGr=2	0	0	0	1	0	1	2
Different production processesGr=2	0	0	1	1	0	0	2
Diversification brings competitiveness but stay in laneGr=5	1	0	1	1	1	0	4
Diversify within your company and competeniesGr=2	0	0	0	0	1	1	2
Diversity within your lane, skillset and clients needsGr=3	1	1	1	0	0	0	3
Downstream benefit in retail sevring clientGr=2	1	0	0	0	0	1	2
Downstream creates competition with your clientGr=2	1	0	0	0	0	1	2
Economising is long term efficiencies and how to get there is strategisingGr=3	1	1	0	0	0	1	3
Economising is unfamiliar jargonGr=2	0	0	1	0	0	1	2
Economising long run due to our product basket having 20-30 yr cycleGr=2	0	1	0	0	1	0	2
Efficiency equals small margin of errorGr=2	1	0	0	1	0	0	2
Essential service- production were as per normalGr=3	0	1	1	1	0	0	3
Exponential growth and change build resilienceGr=2	0	1	0	0	0	1	2
Extreme situations eliminates your comfort zoneGr=2	0	0	0	0	1	1	2
Financial capacity and cashflow constraints of clientsGr=3	1	0	1	0	0	1	3
Flexi/Adaptability attitude arised post-C19Gr=2	1	0	0	1	0	0	2
Forecasting & market analyses changesGr=4	1	0	0	1	0	1	3
Formal annual budgets into KPIS for all divisionsGr=4	1	1	0	1	0	1	4
Fortunate to be in agriculture- food securityGr=2	0	1	1	0	0	0	2
Genetics are beautiful, but takes timeGr=3	0	1	0	1	0	1	3
Genetics forces change in consumer behaviourGr=3	0	1	0	1	0	1	3
Geographical and logistical implicationGr=4	0	0	1	1	1	1	4
Global economic instability affect uncertainty Gr=4	1	0	0	1	1	1	4
Global export and import safety requirementsGr=4	1	0	0	1	1	1	4
Having controle of value chain, assets and opperationsGr=4	1	0	0	1	1	0	3
Holy grail is efficiencyGr=3	0	0	0	1	0	1	2
Human capital limitationGr=3	0	0	1	1	0	0	2
Human resource managementGr=4	0	1	1	0	0	0	2
Identifying oppertunities ahead of your timeGr=2	0	1	0	0	1	0	2
Idiosyncracies of clients instill VIGr=2	0	0	1	0	0	1	2
Immence value chain impactGr=2	0	1	1	0	0	0	2
Improve downstream facilitation and easeGr=2	1	0	0	0	0	1	2
Input costs increasesGr=3	1	0	0	0	1	0	2
Innovation mindset and adapting the small thingsGr=4	1	1	0	0	1	0	3
Integration essential and beneficial in our industryGr=3	0	1	1	0	0	1	3
Interaction and shareholder dynamicsGr=2	0	0	0	1	0	1	2
Invest in your inhouse infrustructure & knowledgeGr=2	0	0	0	1	1	0	2
Investment in minimising environmental impactGr=2	0	0	1	0	0	1	2
Leadership ensured C19 easy transitionGr=2	0	1	0	0	0	1	2
Liency and trust was kindled C19Gr=2	1	0	0	1	0	0	2
Loan interest rates affects end-user paymentGr=2	1	0	1	0	0	0	2
Logistic and supply costs impactsGr=4	0	1	1	1	1	0	4
Long term thinking in everything we do-people need to eatGr=3	0	1	1	0	0	1	3
Long term view is to forward integrateGr=2	0	0	0	1	0	1	2
LootingGr=2	0	0	0	1	0	1	2
Maintainance drives resilienceGr=3	0	1	0	1	0	1	3
Make & Buy- depends on the divisional modelsGr=2	0	0	1	0	1	0	2
Management consultant minimised rather internalise(1-5x per 5 yr cycle)Gr=4	1	0	0	1	1	1	4
Maximise capacity eliminate repititionGr=3	0	0	0	1	0	1	2
Middelman- Buy model-adding value by facilitating flowGr=4	1	0	0	1	0	0	2
Mindset accept change and reevaluationsGr=2	0	0	0	1	0	1	2
Minimise risks in agriculture small margin of errorGr=2	0	0	1	0	1	0	2
New facilities means new capex and sweat current assetsGr=4	0	1	0	1	0	1	3
New leadership bring emmence changeGr=3	1	0	0	0	1	0	2
People became unsettledGr=3	0	0	0	1	1	1	3
Positive effect- connection ease and cost savings e.g. Teams meetingsGr=2	0	1	0	1	0	0	2
Positive in logistics being seperate entity or contracted outGr=3	1	1	1	0	0	0	3
Post war freight and logistics enhanced volatility and uncertaintyGr=3	0	1	0	1	1	0	3
Predicting climate and global warming builds resilienceGr=2	0	1	0	0	0	1	2
Pricing and margins optimisationGr=3	0	0	1	0	0	1	2
Problem VI is capital expensiveGr=3	0	0	1	1	0	1	3
Profitability derives from specialisationGr=3	1	0	1	0	0	1	3
Protocols and mentalities changedGr=3	1	0	1	1	0	0	3
Quick desicions = rapid adaptabilityGr=2	0	0	1	1	0	0	2
Rapid change and adaptability cause lag and difficultiesGr=2	0	0	0	1	1	0	2
Reduce risk by being well informedGr=3	0	1	0	1	1	0	3
Relationships improve business and decrease transaction costsGr=4	0	1	0	1	1	0	3
Renewable energy & efficiency affected by loadsheddingGr=5	1	0	0	1	1	1	4
Research and developement improves economisingGr=2	0	1	0	1	0	0	2
Residual local market access and oversupply conditionsGr=3	0	1	1	0	0	0	2
Resospect is C19 on end?Gr=2	1	1	0	0	0	0	2
Retain senior and skilled personelGr=2	1	0	0	0	0	1	2
Revolving high level 5years planGr=2	1	0	0	0	0	1	2
Sales and time constraint/ momentum lossGr=3	0	0	1	1	0	1	3
Security of stock more important than economyGr=3	1	1	1	0	0	0	3
Semi-anual or irregular workshops and leadership-Gr=3	1	0	0	0	0	1	2
Short and Long term can be ambiguousGr=3	0	1	0	0	0	1	2
Short windows create efficiency- StrategisingGr=2	0	0	0	0	1	1	2
Small changes gain traction and makes big difference andGr=3	0	1	0	1	0	1	3
Specialise and chart your path- Benevolent DictatorGr=3	1	0	0	0	0	1	2
Staff loss or absence due to C19Gr=4	0	1	0	1	1	1	4
Staff management, empowerment and engagementGr=7	1	1	1	0	1	1	5
Staff morale & perceptionGr=4	1	0	0	1	1	1	4
Stick to core business/competencyGr=2	0	0	1	0	1	0	2
Stock controle is keyGr=2	0	1	0	0	1	0	2
Stock position was key to successGr=2	0	1	1	0	0	0	2
Strategic factors impacting geographical position (proximity to market, labor availability, water availability, water effluent)Gr=3	0	0	1	0	0	1	2
Strategies aligned to be cash flow positiveGr=2	1	0	0	1	0	0	2
Strategising is thinking before 5 yearsGr=2	1	0	0	0	0	1	2
Strategising is yield managementGr=4	1	1	0	0	1	1	4
Strategising trumps economisingGr=5	1	1	1	0	0	1	4
Strategy daily, close-nit, agile and dynamicGr=6	1	1	1	1	1	1	6
Strategy leads to more efficiency and economisingGr=2	0	0	0	1	1	0	2
Strategy more important to us than economyGr=2	0	0	1	0	0	1	2
Stratesising may equate to inefficiencies but we have toGr=2	0	0	1	0	0	1	2
Supply chain security and eliminating uncertaintyGr=5	0	0	1	0	1	0	2
Sustainability evolves cohesivelyGr=2	0	1	0	0	0	1	2
Technology and genetic improvement build resilienceGr=5	1	1	1	0	0	0	3
Testing the firm outside of comfort zoneGr=3	0	0	1	1	0	1	3
The key is in balancing strategise and economiseGr=4	0	1	0	1	1	0	3
The war had much bigger influence on our firmGr=3	0	1	0	1	1	0	3
Theres always space to growGr=2	1	0	1	0	0	0	2
Think on your feetGr=3	1	1	0	0	1	0	3
Trading includes heavy logisticsGr=2	1	1	0	0	0	0	2
Transition of difficulties into oppertunities and solutionsGr=2	0	1	0	0	1	0	2
Try to keep a low profileGr=2	0	1	0	0	1	0	2
Uncertainty and traumaGr=4	0	0	0	1	1	1	3
Unions and human capital capacityGr=2	0	0	0	1	0	1	2
VI drives specialisationGr=5	1	0	1	0	0	1	3
VI upstream motivated by genetic stock securityGr=3	0	1	1	0	0	0	2
We are proud of what we doGr=2	0	1	0	0	0	1	2
We expect changeGr=2	0	0	0	0	1	1	2
Well integrated up and downstreamGr=3	1	1	1	0	0	0	3
Working capital accessGr=2	0	1	1	0	0	0	2
Working capital and capex availabilityGr=3	0	1	0	1	0	1	3
Working environment changedGr=2	0	1	0	1	0	0	2
Totals	59	65	56	71	52	77	380
New Codes	59	48	22	16	5	0	