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Changes in Organizational Architecture of SME Manufacturers incorporating Smart Manufacturing Systems within Gauteng

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TITLE:

Changes in Organizational Architecture of SME Manufacturers incorporating Smart Manufacturing Systems within Gauteng.

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A research article submitted to the faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfillment of the requirements for the degree of Master of Business Administration.

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DECLARATION

I Bongmusa Eno Radebe, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfillment of the requirements of the degree of Master of Business Administration in the Graduate school of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Bongmusa Eno Radebe

Signed……. At ALBERTON ……..on the …21ST……day of …JUNE…… 2023

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TABLE OF ACRONYMS

4IR/4.0	Fourth Industrial Revolution
GDP	Gross Domestic Product
ICT	Information and Communications Technology
OA	Organizational Architecture
SEDA	Small Enterprise Development Agency
SME	Small and Medium Enterprises
SMS	Smart Manufacturing Systems

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ABSTRACT

The South African Manufacturing SME is a thriving industry that has one of the biggest contributors to employment and impact in GDP contribution. The aim of the study is to understand the importance of Organizational Architecture and how adopting Smart Manufacturing Systems is imperative for improved Manufacturing SMEs overall performance. To skillfully contrive this inquiry, a quantitative approach was adopted, recording key driver responses to their perception of Organizational Architecture. These responses were captured through a survey questionnaire that was distributed using the desktop method of distribution. The results displayed insights on the perception of Organizational Architecture and reasons why key drivers of Manufacturing SMEs seldomly adopted Smart Manufacturing Systems to advance the manufacturing industry in Gauteng, South Africa. The insights brought forth from the research suggests that policy makers revise existing structures to cultivate activities that cultivate and protect the growth of Manufacturing SMEs. The research makes a significant contribution by identifying some of the insights on why the adoption of Smart Manufacturing Systems in Gauteng is lagging.

KEY WORDS

Organizational Architecture, Smart Manufacturing Systems, Manufacturing, SME, Productivity.

1) INTRODUCTION

History has introduced several industrial revolutions throughout the world's evolution. Currently, the world is dawned by the Fourth Industrial Revolution (4IR) that introduces numerous disruptive technological advances that have an impact across all business industries, examples of these advances include automation, machine learning, human machine interaction and digitization. The 4IR has consequently introduced a new dynamic in the world of manufacturing. Manufacturing has evolved from the 1900's to the 1990's, moving from a mass production paradigm to a smart production paradigm. In 2020, manufacturing contributed R34.8 billion towards the South African Gross Domestic Product (GDP), a 16% decline from 2019's R41.40 billion, however, the industry contributes a significant 14% to South Africa's total GDP. The manufacturing industry in South Africa additionally provides 1,3 million employment opportunities to South Africans nationwide towards the combat of its high unemployment rate, contributing as the fourth highest and largest employing industry after social services, trade and finance. The industries future prospect is expected to show a 2% growth by the end of 2023, provided some of the challenges that will facilitate its growth are addressed. These challenges include unreliable electricity supply, lack of skill, a legacy mindset and organizational context. This study focuses on organizational architecture as a challenge to manufacturing small management enterprises (SME's) in Gauteng, given their macro-market environments and their potential threats to competitive advantage.

Manufacturing in South Africa contributes a significant amount towards GDP and towards alleviating concerning unemployment rates in South Africa. However, the organizational architectures of the manufacturing SMEs in Gauteng present a strategic threat of business failure, contribution to unemployment and reduced economic output. According to SEDA (2020), manufacturing SMEs have reduced by 16% between 2019 and 2020 in South Africa, Gauteng accounts for 33% of all manufacturing SMEs, making it the largest contributing economic province from an SME manufacturing perspective. Furthermore, according to Sinfree Gono (2020), one of the major challenges to sustainable

manufacturing SMEs in Gauteng, emanates from the adoption of Information and Communications Technology (ICT). This reluctance plays a role in organizational context, which encapsulates the size of the sector, resource and capabilities, management support and the cost of ICT. Smart manufacturing is an extension of ICT, it integrates computer manufacturing consumer sensory input data demands (Smart Production Systems), with the organizations ability to adapt to increased, changing and rapid demands of these consumers (Sinfree Gono, 2020) this alludes to the importance of adopting ICT towards manufacturers becoming smart factories. This allusion addresses the structural form, information control systems, production technology and organizational culture in organizational architecture. The changes in organizational architecture may emanate from a plethora of justifications such as SME growth, downsizing, changes in leadership, changes in strategy or changes in the manufacturing SME environment (Mindtools, 2018), however, this does not overshadow the fundamental reasoning behind the necessity for change in Manufacturing SMEs within South Africa Gauteng.

1.2 PROBLEM STATEMENT

SME manufacturing economists allude to the perception that Smart Production Systems have a transformative impact in the industry (Bayode, 2022). The researcher highlights the importance of adopting smart technologies in manufacturing SMEs and how they ultimately improve their competitive and sustainable nature. The same economists believe that these transformative changes allow Manufacturing SMEs to make significant positive contributions to South Africa's poverty, inequality and high unemployment challenges. However, there is a fundamental change in the organizational architecture that is often neglected, which contributes to the fundamental changes of Manufacturing SME when adopting new technological and operational models towards becoming smart factories (A. Bayode, 2022). This is further propagated by the limited number of studies which consider effective frameworks and models that assess the importance of organizational architecture in SMEs (Mittal, 2018). This negatively impacts how

Manufacturing SMEs remain sustainable within their changing environment because of this under researched literature, consequently inhibiting their impact.

This study investigates why there is a fundamental change in organizational architecture when adopting Smart Production Systems. It further introduces best practices of adopting these changes towards competitive advantage in the SME Manufacturing landscape of Gauteng, South Africa.

To adequately achieve the objectives of the study, the following objectives were formulated:

- To identify how Smart Production Systems instigates changes in the Organizational Architecture of SME manufacturers in Gauteng.
- To show how Organizational Architecture impacts SME Productivity for Manufacturers in Gauteng.
- To identify best practices of Organizational Architecture for Manufacturers in Gauteng.

The research significance is aligned with the appreciation of the impact smart production systems have on organizational architecture for SME manufacturers in Gauteng, South Africa. Considering how manufacturing is a top three contributor to the economy and employment (SEDA, 2020), it remains pivotal to manage its succession towards economic stability. It is against this rational that the organizational architecture of SME manufacturers importance has been identified as an important contribution towards this scant inquiry. The research project makes significant contributions to both entrepreneurs in the SME manufacturing industry and to its scholars of inquiry.

2) LITERATURE REVIEW

A REVIEW ON SMART MANUFACTURING SYSTEMS AND ORGANIZATIONAL ARCHITECTURE OF SME MANUFACTURERS

The manufacturing industry has noticeably evolved in the past 5 years in South Africa along with the global market trends in accordance with the developing industrial revolutions. This growth has implicated rising costs in the South African manufacturing industry causing the industry to lag in its growth trends (Robbins, 2016). Such costs are primarily caused by inefficient ports, underdeveloped transport systems with adverse networks to transport goods, major electricity disruptions to productivity and the de-industrialization caused due to technological change demands (Robbins, 2016).

With the multifaceted modern manufacturing demands, manufacturing SME's find themselves struggling with its complexity. A quantitative study conducted by Mittal (2018) captured the perception of manufacturing SME owners for not being knowledgeable about where to start and the basics that enable the fourth industrial revolution technologies for SMEs. The study went on to state that SMEs do not adopt new available technologies based on fear of adopting inapt practices and incorrect technologies (Mittal, 2018).

However, SME Manufacturers are oblivious that organizational architecture works with both strategy and technology to enable competitive advantage. This provides opportunity for Manufacturing SMEs to expand their resources and abilities needed to execute their vision, adopting technology and organizational architecture as equal influencers of sustainability (Chris Sauer, 2002). An example of these technologies includes Internet of Things (IoT), cloud computing, data analytics and artificial intelligence.

These technologies dominate the manufacturing industry, thus the imminent development of smart factories. Smart Factories are manufacturers who assimilate technology to address challenges of increased customized requirements that demand high quality output at a reduced throughout time into the market (Zheng, 2018). This is especially

imperative because industry 4.0 (the fourth industrial revolution) is characterized by the promise of improved flexibility, speed, quality, product and enhanced productivity. The adoption of these technologies by Manufacturing SMEs in Gauteng can improve productivity through interpreted data that can aid swift and accurate decision making (Zheng, 2018).

The objective of organizational architecture in Manufacturing SMEs is to create smart factories that optimize performance, perpetuate value to both current and future customers towards its sustainability in mass customization. However, the lack of understanding and implementation can be paralyzing, thus, it is critical that SMEs get leadership support on what organizational architecture is and why it is important to consider towards the success of the manufacturer (Silverman, 1997).

To assist leadership towards the assumed understanding of organizational architecture, the Smart Manufacturing Maturity Model should be adopted. The model assists SME crowning through technology drivers (Mittal, 2018). The framework is a collection of clear methods and procedures when architecting a system. The model aligns the SME based on its outputs and assists it to become the embodiment of its intention. This enables various congruent operational decision-making advancements such as recruitment, training, strategy, culture, value chain and organizational structure. It is for this reason why organizational architecture is well suited for intentional transformation change that is proactive, evolutionary and agile (Silverman, 1997).

To further cement the aim of organizational architecture for manufacturing SMEs in Gauteng towards mass customization, it is imperative to better position themselves in the market. This should be purposed towards customer satisfaction during co-creation to enhance their product range offering while seeking benefit from their economies of scale and scope (Leos Safar, 2018).

2.1) PERSPECTIVES OF ORGANIZATIONAL ARCHITECTURE.

Organizational Architecture is the model in which the SME integrates capital resources and human capital under a predetermined structure in coordinated utilization towards a desired short-term and long-term outcome (Architecture, 2021).

Lee (2019) defines organizational architecture as a tool that defines what an organization does, how the organization does it, how it utilizes this tool for management decision making, organizational design and its development (Lee, 2019). Although these definitions are similar, their fundamental differences are enough to give rise to equally different perceptual ideas that effectively develop into theoretical models.

2.2) THEORETICAL MODELS

2.2.1) Galbraith Star Model

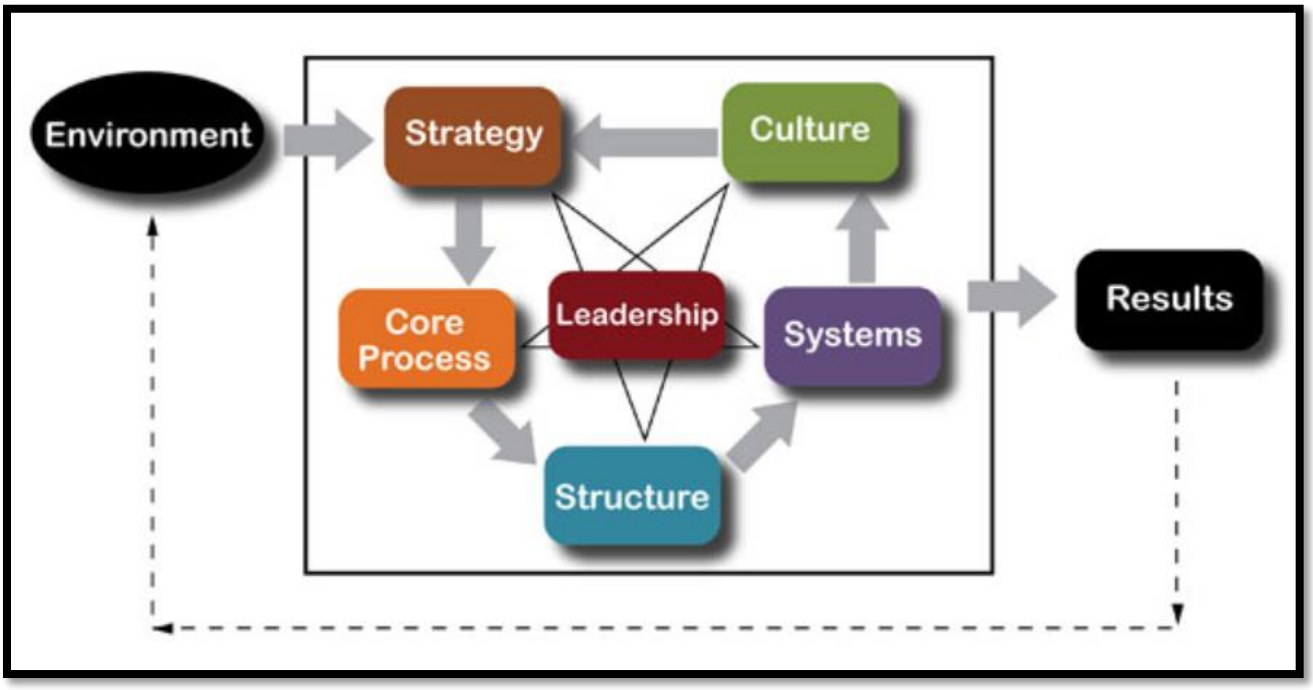
In the 1960's, Jay Galbraith developed the Star Model Framework in which SMEs can base their organizational architectures (Galbraith, 2016). The model consists of tools that entrepreneurs can use to shape their decision making for their organizations. This tool comprises of five categories (strategy, Structure, business processes, reward systems, and HR management), these categories are interlinked towards the overall effectiveness of the organization's architecture towards agility in response to environmental changes (Galbraith, 2016). The aim of this model is to influence the behavior of the SMEs employees though policies implemented by the entrepreneur (Galbraith, 2016). These five categories can be used by entrepreneurs to write policies that shape employee behavior. However, according to McCoy (2022) Galbraith star model does not adopt a holistic approach to organizational architecture. Although the model displays interconnectivity between its elements, the model neglects elements such as culture and purpose, relying on the Pavlovian approach to motivation. To further is disadvantage for SME Manufacturers, the models does not consider inputs and outputs of the organization, thus neglecting the SME's whole value chain system, rendering the model ineffective for Manufacturing SME's (McCoy, 2022).

2.2.2) Transformational Model

The transformational model was first introduced in 1987 by James McGregor though the concept of transformational leadership, which was extended by Bernard M Bass in 1985 (Lanier, 2012). The Center of Organizational Architecture then created the Transformational model in 1995. The model recognizes strategy as the central point for effective organizational architecture prior to the organization adapting to the changing demands of the macro-market environment, taking a resource-based view approach. The approach of the model focuses on leaderships ability to think strategically to align the SMEs processes, tools and its people. The models primary aim is sustaining effective generational succession of the organization through continuous re-architecture (Lanier, 2012).

Fig 2.1 below depicts eight variables that need to align as the best fit of the organizational elements for its success.

Fig 2.1: The Transformational Model



Source: https://centerod.com/framework/

The model is effective towards understanding how people and the organization responds to change given its integrative nature with the macro-environment (McCoy, 2022). However, the model takes a linear approach to organizational architecture. Although its elements are considered as antecedents towards a highly effective organization, its linear approach contradicts the agility aspect of a digital age organization. This challenge to flexibility poses a trial to SME response time when faced with environmental opportunities and threats (McCoy, 2022).

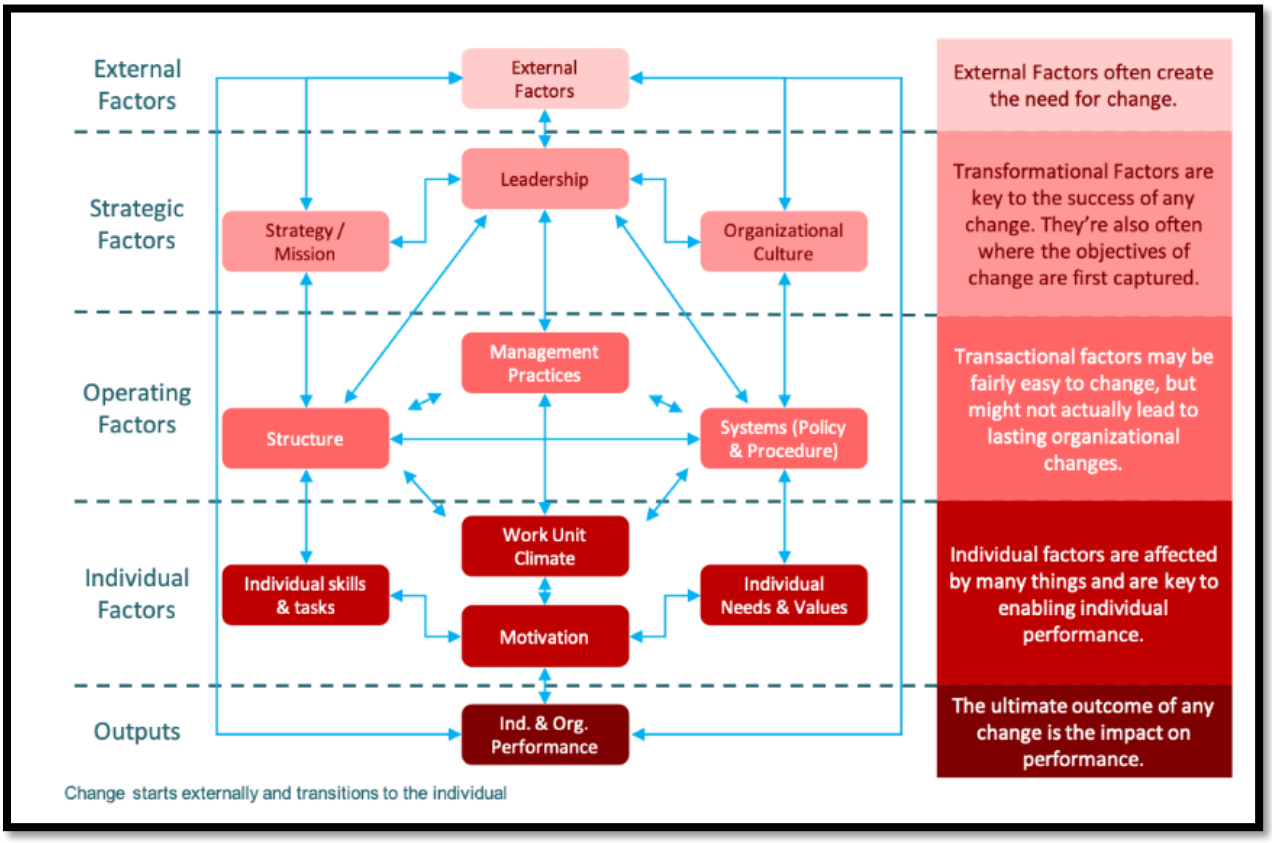
2.2.3) The Burke-Litwin organizational change model

The Burke -Litwin organizational change model was developed in the 1960s by W. Warner Burke and George H. Litwin (Stone, 2015). The framework was developed as a change management tool that guides organizational architecture; the model also recognizes the interrelatedness of factors that affect how an organization deals with chaos. The tool prioritizes environmental factors as the lead drivers of change that impact instrumental elements of the SME (Stone, 2015).

The Burke-Litwin model acknowledges how transformational change occurs in response to the external environment, which consequently affects the SMEs mission, strategy, culture, and leadership elements (Gordon, 2022). Within the model, there is recognition of transactional factors such as leadership, structure, systems and work climate. When both transformational and transactional elements are jointly considered, they have an impact on motivation and consequently, performance of the SME (Gordon, 2022).

Figure 2.2 below illustrates the various factors that play a role for effective manufacturing SME organizational architecture. These begin from the external factors and cascade down the framework to ultimately determine SME performance.

Fig 2.2: The Burke-Litwin organizational change Model



Source: https://www.aihr.com/blog/organizational-architecture-models/

An advantage of the Burke-Litwin model is that SMEs have a feedback loop on their performance which is directly influenced by their external environment, making the SME agile in response to the models' flexibility (Gordon, 2022). However, the disadvantage for SMEs adopting the model, is it attributes any fundamental organizational architecture to the external environment. The model does not consider the internal environment as a possible contributor to the SME root cause challenges (Spangenberg, 2013).

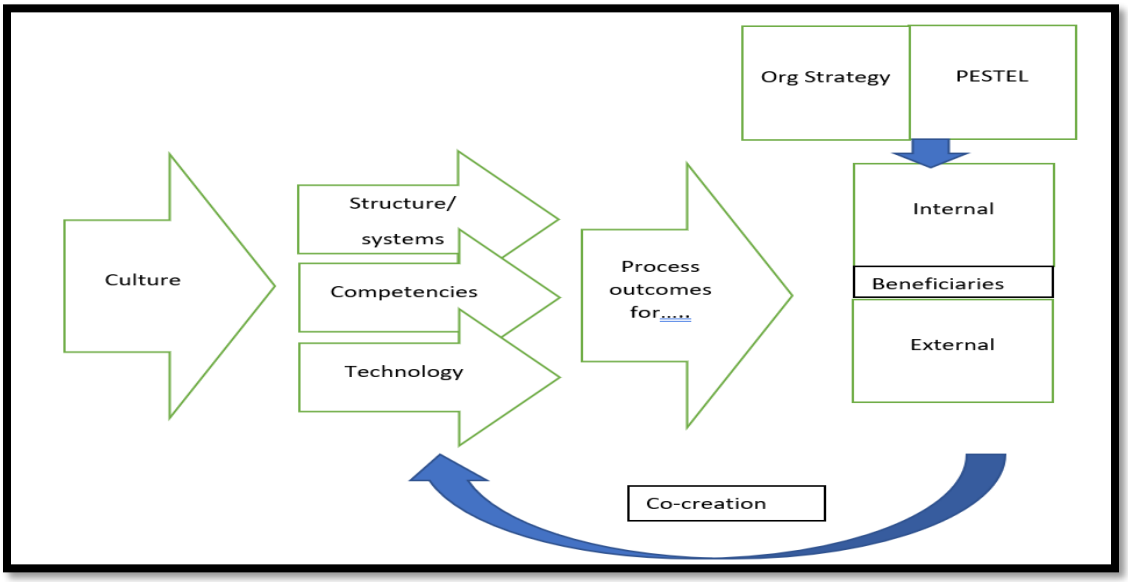
2.2.4) Gregory John Lee's organizational architecture.

Organizational architecture model was introduced by Gregory John Lee in 2019. The primary focus of this organizational architecture is on co-creation of products in manufacturing SMEs in conjunction with their end users' specifications (Lee, 2019). The

tool looks at components in the organization that need to be in place to enable successful achievement of their strategy given their external environment (Lee, 2019).

Fig 2.3 below illustrates how the process begins from the SME strategy formulation in response to macro-economic trends, these are influenced by the demands of the end user, thus the need for the organization to be agile to sustain customer satisfaction and competitive advantage (Lee, 2019).

Fig 2.3: Gregory John Lee's organizational architecture.



Source: (Lee, 2019)

The architectural structure model is read from right to left, attributing its success to systems and support functions that enable organizational architecture (Lee, 2019). The model can also be departmentalized to facilitate the efficiency of an isolated department towards the holistic streamlined SME supply chain synergy, improving the efficiency of both the SME's value and business models (Lee, 2019).

As this inquiry progresses, the perspective of Gregory Lee will be adopted as the best fit of Organizational Architecture for SME Manufacturers in Gauteng. This rational is summarized in the perspectives model summary table 1.1 below. These perspectives

are criticized as lacking one or more characteristics to effective organizational architecture when implementing their strategies.

Table 1.1: Perspective models summary

THEORY	CHARACTERISTIC	Technology	Agility	Contextual	Internally sustainable	SME adoption
Galbraith Star model		X		X	x	
Transformational model		X		X	X	
Burke-Litwin organizational change model		X		X		
Gregory John Lee's organizational architecture.		X	X	X	X	X

Source: Researcher own made from literature

- *Technology* – does the model assimilate technological developments into its systems and processes?
- *Agility* – does the model encourage flexibility and improved responsiveness to the SME environment?
- *Contextual* – does the model consider the SME relationship with its macro and competitive environments?
- *Internally Sustainable* – Does the model consider internal processes as an integral part of the organizational architecture of the SME towards productivity performance?
- *SME Adoption*– Can the model be adopted by Gauteng Manufacturing SMEs and prove to be effective?

2.3) IMPACT OF ORGANIZATIONAL ARCHITECTURE ON SME PRODUCTIVITY.

Organizational architectures are about mobilizing organizational systems and structures that are parallel to SME core strategies. These are justified by various contributing factors such as macro-economic factors like the development of smart production systems, the growth of the SME and changes in strategy for better fit (Núbia Carvalho, 2018). When

organizational architecture is effectively implemented, its effectiveness earns benefits such as increased efficiency, better customer relations, safer working conditions, and effective agility for future challenges. When organizational architecture is improperly implemented, adverse outcomes such as poor performance and ineffective problem solving may occur (Hanin Alqam, 2020).

Some of the best uses of Organizational Architecture as sighted by Lee (2019), include:

- *Adequate planning*: A well set out architecture can be used by leadership for aligning all SME tools and resources for projects and strategy success. This allows for adequate planning, organizing, leading and control measures (Lee, 2019).
- *Communication*: Organizational Architecture in SMEs have proven to be a valuable tool for cascading the strategy of the SME to ensure uniform comprehension, direction, purpose, drive and synergy. This also pivots into the cultural aspect of the SME that leadership should remain abreast of (Lee, 2019).
- *Diagnostics*: Organizational Architecture can furthermore be used as a diagnostic tool when investigating where certain challenges faced by the SME lie, be it its internal or external environment. These challenges may have not adequately contributed towards the SME strategy success, challenges such as a cultural misalignment (Lee, 2019).

These benefits of organizational architecture, in conjunction with the use of modern technologies, directly have an impact on the SMEs productivity. Organizational Architecture aids thoroughly thought out radical or incremental plans, hence its extensive use in consultancy agencies, becoming a central tool towards organizational design and development (Lee, 2019).

A quantitative study conducted by Kamble (2020) made an inquiry into some performance measures that could be used to evaluate the performance of SMEs. Performance in this research was defined as “the process of quantifying the efficiency and effectiveness of action”. The article concluded that cost, quality, though-put time, flexibility, and productivity, were key determinants towards the sustainability of a manufacturing SMEs. When it came to **cost**, the article referred to the reduction of wastages, redundant

processes and inventory costs. **Quality** addressed the specific use of technology (IoT) to monitor the value chain when creating value for end users and extracting value from the manufacturers machine lifetime value. The element of **time** introduced the concept of lean manufacturing by introducing a just-in-time approach to reduce throughput time and storage costs. **Flexibility** assessed the SME manufacturers processes, volume ability and product mix when executing real-time market demands. Furthermore, **productivity** observed the optimization of the SME to reach its performance targets with the use of its developed manufacturing system (Kamble, 2020). The study further attests to the necessity of an agile Organizational architecture that can appropriately adjust to the SMEs specific needs and methodologies employed by its leadership (Lee, 2019). A complimentary study completed by Rose (2009), outlined critical factors that were critical towards SME productivity, namely, Top management support, education and training, employee empowerment and involvement of managers in a team.

Through the adoption of new technologies, manufacturing for SMEs has improved value chain organization into becoming smart factories (Hanin Alqam, 2020). These smart factories enable effective horizontal and vertical integration. Horizontal integration involves the integration of resources between SMEs through information networks and value chain in providing real time products (Núbia Carvalho, 2018). In vertical integration the future network of the factory system enables manufacturing services to achieve customized production as opposed to the fixed production process. The principles of smart production systems enable the manufacturing SMEs interoperability of equipment, giving rise to several networks in their environment (A. Bayode, 2019).

The improvement of organizational architecture gives rise to real-time capabilities in manufacturing SMEs, this disrupts how big data is managed by deepening the link between the SME and its end users, enabling co-creation through faster responses to demands. Overall, the smart factory better utilizes its resources to manage overproduction, the machinery is also built in a modular structure, making it more flexible when removing or adding processes, this consequently increases the lifespan of the machines. This will improve the sustainability of manufacturing SMEs in Gauteng, causing a positive ripple effect on improved GDP (Hanin Alqam, 2020).

SME manufacturers in South Africa are still developing and experiencing challenges of gaining sustainable competitive advantage towards productivity. Concerns on the readiness of the manufacturers given the structure of the country's economic components, inhibiting their ability to transform. According to Hanin (2020), there is a need for South African manufacturing SMEs to adopt effective organizational architecture changes using smart technologies, this speaks to the role of SMEs in South Africa. Moreover, there is an existing pattern of micro-level interaction made by leadership in the early lifecycle stages of manufacturing SMEs, that revel a misalignment of organizational architecture which influenced its strategic performance article (Zwane, 2019).

2.4) SME MANUFACTURERS AND TECHNOLOGICAL ADOPTION

The fourth industrial revolution is highly disruptive and characterized by advanced technologies that pivot automation in SME manufacturing enterprises. Dewa (2014) conducted an inquiry to ascertain the readiness of the South African Manufacturing SME's to adopt these smart technologies. The study revealed that SMEs in South Africa had a very low threshold towards smart technology adoption, placing SME's in the foundation phase regardless of their potential. To this effect, the South African government has reconized the necessity for this technological adoption and how it presents a unique opportunity, contemplating various initiatives through existing agencies such as the Depratment of Trade and Industry(DTI) and the Council of Scientific and Industrial Reasearch (CSIR) have been identified as potential vehicles. These intiatives are yet to be supported through policy reformations that will support funding and promulgation (Dewa, 2014).

Meanwhile, when manufacturing SMEs in Gauteng are faced with technological assimilation opportunities, challenges of resources constraints pose difficulties to adopt an effective architectural design to compete in the global competitive market (Rose, 2009). With the increasing demand for high customization, SMEs have no option but to consider lean manufacturing processes. However, there has minimal evidence of this

being successfully adopted and implemented by SMEs, leaving them with an option to adopt best leadership practices to adequately compete (Rose, 2009).

Musa Shilenge (2020) conducted further research with the aim of contriving what the best practise framework is when integrating Information Technology in an operational architecture environment. The research acknowledged the multitude of opportunities that were brought fourth by big data analytics, Internet of things, cyber physical systems, cloud computing and automation. Shilenge (2020) continues to acknowledge that manufacturing SME's need to embrace their new environment, with integration of positive ethical practises to uphold their integrity and competitiveness.

Although Manufacturing SMEs have certain agility advantages due to size, fewer levels of management, leadership visibility and expedited implementation (Rose, 2009). Their critical success factors negatively impact the extent in which Manufacturing SMEs can develop and implement accurately responsive strategies through congruent organizational architecture. These factors are accounted as financial constraints, correct organizational architecture and the skills required from leadership (Rose, 2009). Therefore, SMEs should strive to apply feasible practices only and not rush to assimilate everything all at once. However, Manufacturing SMEs should remain mindful that global competitiveness requires the adoption of technological advances to accurately address the demand pressures of the environment, thus a subsequent digital transformation strategy would be prudent.

2.5) BEST PRACTICE OF ORGANIZATIONAL ARCHITECTURE FOR SME MANUFACTRERS.

Manufacturing SMEs in Gauteng face a plethora of challenges, challenges such as resource allocation, organizational strategy, skills mix, growth, partnerships and centralization that enables economies of scale (Natasha Ashvinee Rajendran, 2020). This justifies the emphasis on how the SME is structured to execute its goals through the organizational architecture of best fit that will enable organizational learning and agility (Natasha Ashvinee Rajendran, 2020).

According to Sithembiso and Govuzela (2019), organizational architecture is the agility an SMEs displays to create value by adapting its decisions in conjunction with the external environment. Organizational agility is a strategic enabler through sufficient new business opportunity creation. This is referred to as organizational learning, a learning organization is able to employ a better responsive structure when responding to challenges, these valuable learnings for manufacturers on what to produce, emanate from their customers. In South Africa, this continuous loop of co-creation is imperative to sustain manufacturing SMEs of Gauteng in the fourth industrial revolution, this positively contributes heavily towards sustainability in a country with one of the worst sustainability rates worldwide (Sithembiso Govuzela, 2019).

Organizational learning

Organizational learning endorses organizational agility, according to Sithembiso and Govuzela (2019), a positive relationship exists between the two variables. Organizational learning concerns itself with SME improvement over periods of time through experience and knowledge.

Organizational agility

Organizational agility observes the manufacturing SMEs ability to mobilize internal alignment to the rapid environmental changes in the macro-market environment (Sithembiso Govuzela, 2019).

According to Silverman (1997) certain precautions need to observe when implementing organizational architecture. Such observations include identifying the fundamental need for perpetual transformational change; an organizational culture with well and commonly understood terms, values and principles; knowing what the vision and mission of the SME and finally; creating the subsequent infrastructure for the desired vision to support organizational change (Silverman, 1997). Lee (2019) suggests a well-timed change management would be appropriate for the defined change. Due to SME financial and resource constraints (Rose, 2011), Manufacturing SMEs should focus on internal elements which are less financially obligatory towards lean implementation (Lee, 2019).

Lean manufacturing is a concept that was originated by the Toyota Production System. The system aimed to eliminate waste while improving customer satisfaction. Although Manufacturing SMEs are reluctant to adopt lean inducing technologies, the implementation of internal processes such as participation and employee involvement will yield measurable benefits to quality and good customer responsiveness (Rose, 2011). According to Rose (2011), the most important lean practices that are critical for efficient practices that should be implemented by Manufacturing SMEs towards their sustainability, are reduced set up time, the kanban and small lot size. These critical success factors can improve a continuous flow in production and reduced throughput time (Rose, 2011).

It is imperative that Manufacturing SME understand the implementation of each critical success factor, these factors are highly supported by visible leadership, knowledge and learning skills. Lean manufacturing implementation can assist in reducing manufacturing costs and increase the overall value of their existing product range, allowing competitive advantage on the SMEs business level performance and competitiveness. However, the lack of understanding of these critical success factors will lead to unsuccessful attempts to building adequate infrastructure for the organizational architecture (Rose, 2011).

2.6) SUSTAINABLE MANUFACTURING

In a study conducted by Hazem and Ali (2021), manufacturing SMEs should adopt the resource-based view to emphasize its capabilities towards sustainable competitive advantage. This is argued that the manufacturing SME should do this in conjunction with the external environment to enhance on their performance, this includes a healthy relationship with their environment to improve chances of sustainability. This sustainable manufacturing practice assists in reducing resource consumption during the manufacturing process, improving competitive abilities such as costs, quality, efficiency and flexibility when providing distinctive customer value (Hazem Ali, 2021).

3) RESEARCH METHODOLOGY

A quantitative research approach has been adopted; this is justified by the generalization of the outcomes into other similar locations of manufacturing SMEs given their emerging contexts. Quantitative studies are defined using numbers and graphs, running tests to confirm theories into generalizable facts (Streefkerk., 2021). Furthermore, the descriptive research design has been chosen to investigate organizational architecture for the purpose of observation and measurement of the possible effects on Manufacturing SME sustainability. According to Jovancic (2020), the descriptive research architecture is a method that investigates variables with the full intention of measurement without any manipulation involved. This research article is suitable to extract insights that contribute towards the aim of the research.

The sampling frame comprises of participants that are in the manufacturing industry, the organization should satisfy the SME criteria as set out in the definition of what an SME is in South Africa. The research instrument also comprises of a qualifying criterion in the demographics section, this is to ensure that cohesiveness of the data collected in relation to the studies relevance.

The use of probability sampling method is justified by the congruence to the research design, improving internal consistency, accuracy and relevance of the research objectives. According to Small Enterprise Development Agency SEDA (2020), The Gauteng province has 65 965 manufacturing SMEs, only 10% of these SMEs will be targeted. These 6 596 manufacturing SME owners will formulate the target population of the study. The sample size required was 364 participants using a calculated 95% confidence level, a 50% response distribution and a 5% margin of error. This strategy was chosen to manage resource costs and related risks of the study towards protecting its participants. Only 123 responses were recorded, making a 34% response rate.

The data instrument made use of closed ended questions on a seven-point Likert scale. This inclines participants to form an opinion for analysis purposes while capturing a more accurate reflection of the respondent's true assessment. Various sections in the data

collection instrument include section A of demographics to ensure the correct sampling frame to support the internal validity. Section B and C are informed by the literature to capture the perspective of the participants towards the collection of empirical evidence to support the studies objectives.

The data collected from the survey questionnaire developed and distributed using Qualtrics. The data was interpreted using the Qualtrics Statistical Analyses and exported into Excel for further interpretation and inferential purposes. For analysis, Pearson's R was utilized to ascertain correlation to determine the inter-relatedness of the variables. Central tendencies were also analyzed to improve data interpretation.

Ethical approval completed in accordance with Wits Business School, Protocol Number (WBS/BA1561156/294).

3.1) RESEARCH DEMOGRAPHICS

Demographic information provides imperative data regarding research participants. Demographic information is necessary to determine whether the individuals in this study would be truly represent the sample of the target population for generalization purposes (Hammer, 2011). The demographic information interpreted in this study allows the researcher to understand the characteristics of the target audience based on the research questions asked.

Average annual revenue

Average annual revenue demographics for these Manufacturing SMEs showed 58% of respondents recorded 0-20 million, 8% of respondents recorded 20-40 million, 5% of respondents recorded a 40-60 million, 5% or respondents recorded a 60 – 80 million in annual revenue and a further 24% of the respondents recorded 80 million + in their respective Manufacturing SMEs.

Number of employees

Number of employees recorded for these Manufacturing SMEs showed 49% of respondents had 0-60 employees, 8% indicated that they had 60-120 employees, 6% of

respondents indicated 120-180 employees, 7% indicated 180-250 employees while 30% indicated 250+ 30% employees in their respective Manufacturing SMEs.

Years of operation

Number of years in operation for these Manufacturing SMEs recorded that 11% have been operating between 0-1 years, 13% have been operating for 1-2 years, 13% have been operating between 2-3 years, 11% have been operating between 3-4 years and 52% recorded 5+ years in their respective operations as Manufacturing SMEs.

The importance of these demographics is to ascertain whether the respondents fit the criterion to enhance the research validity and reliability. As the earlier defined criteria of SMEs in South Africa the summarized demographics and its respondents satisfy the criteria needed to validate the study's finding that aid its purpose.

3.2) RESULTS

3.2.1) How Smart Production Systems instigates changes in the organizational architecture of SME manufacturers in Gauteng.

The overall mean indicates that 44% of SME manufacturers shared a strong agreement in perceiving organizational architecture as an important role player in how they interact with their environment. These SME Manufacturers acknowledged that organizational architecture and continuous re-architecture was imperative, this was further recorded by over 55% of the respondents indicating that how their business responds to their environment was important.

In terms of readiness for changes in 4IR and the adoption of Smart Manufacturing Systems, 34% of the respondents attested that their SMEs were ready for impending changes in the fourth industrial revolution. Surprisingly, a significant number of respondents showed uncertainty when indicating the effects of the fourth industrial revolution for their SMEs, thus their lack of participation in organizational architecture. This was indicated by a 46% in the higher percentile that agreed to the fourth industrial

revolution not affecting their SMEs, with a low 31% who disagreed. Consequently, 58% agreed that their Manufacturing SMEs had not undergone organizational architecture, with a low 19% who have undergone the exercise.

3.2.2) How organizational architecture impacts SME productivity for manufacturers in Gauteng.

Overall, in terms of impact perceived of organizational architecture, 57% of respondents believe that organizational architecture gives their SME manufacturers competitive advantage, meanwhile 25% disagree and 17% remained undecided. 70% of respondents agreed that organizational architecture makes a difference in their business, furthermore, 90% of the respondents agreed that organizational architecture improved the overall business performance, with 77% of these Manufacturing SMEs having experienced improved revenues as a result of effective measures when implementing organizational architecture.

3.2.3) Best practices of Organizational Architecture for manufacturing SMEs in Gauteng

When addressing the perceived best practices, 90% of SME Manufacturers agreed that organizational architecture was important to maintain competitive advantage, however, 42% indicated a cost versus returns concern. Furthermore, 40% of the respondents agreed that organizational architecture was not an investment, which was further indicated by an exclaimed 45% respondents that indicated a disagreement to organizational architecture having an effect to the Manufacturing SMEs sustainability. Only 38% agreed to organizational architecture having an impact to the sustainability of the SME Manufacturer.

4) DISCUSSION

4.1) Key Findings

The perception captured by the researcher from its respondents exhibited a belief in the overall importance of organizational architecture. Manufacturing SMEs key drivers shared a significant belief in the positive impact of organizational architecture and its benefits towards overall business performance and improved revenue. However, it was contradictory to ascertain that these SMEs did not perceive organizational architecture as an investment based on the cost benefit measure. This could possibly have a connection to the negatively perceived effects of organizational architecture on their sustainability. This perception dovetails into the notion that SME manufacturer key drivers do not have confidence in how the organization interacts with their environment. This insight is demonstrated by the high negative responses recorded when addressing the perceived effects of the Fourth Industrial Revolution.

These key findings connect to previous research conducted by Sinfree Gono (2020), whos research noted one of the major prohibitors of growth in the SME Manufacturing industry, was the lack of adoption in Smart Manufacturing Systems. This research paper provides further insights to the percpetion of key drivers to these SMEs, providing a wholesome robust literature content when discussing organizational architecture and its importance in the Fourth Industrial Revolution.

Although the research captured perceptions of these key drivers, a major limitation is attributed the research article itself, which aimed at capturing 364 participants and responses of the population sample. However, only 90 responses were recorded at a 25% response rate, potentially impacting the inferential aspect of the study. A strength of the study is identified as its ability to contrive insights on the discrepancy gap between the key driver's belief in organizational architecture versus the actual implementation and participation in its activities. This reveals a further interest of inquiry that future researchers can seek to understand and quantify. An additional point of inquiry can be the financial calculation of cost versus benefit over time when SMEs invest in organizational architecture and how this influences their sustainability and organic growth opportunities.

5) CONCLUSION

The study has highlighted the importance of Organizational Architecture for Manufacturing SMEs in Gauteng, South Africa. This was addressed in the literature review when assessing the impact and effects of continuous organizational architecture on the Manufacturing SMEs productivity. In the manufacturing industry, Smart Manufacturing Systems have become a best practice to adopt when undergoing organizational architecture in relation to the Manufacturing SMEs environment, industry, and advancements towards a sustained competitive advantage.

The main points of the study addressed the best suited perception for the Manufacturing SMEs in Gauteng. Upon a tabulated comparison, the best approach identified was Gregory Lee's organizational architectural perception, which appealed to the challenges of technology, agility, context, sustainability and the feasibility of SMEs to adopt the architectural approach.

In the literature review, Kamble (2020) quantified some of the performance measures that can be sufficiently implemented to monitor the effectiveness of organizational architecture. The measures of these performance measures alluded to cost, quality, time, flexibility and productivity. Lee (2019) went on to highlight some of the convincing advantages of implementing organizational architecture when performance measures are effectively observed. These advantages were discussed and identified as adequate planning, improved strategic organizational communication and adequate diagnostic tools to further improve the Manufacturing SMEs architecture.

Although these benefits, best practices and performance measures are highlighted in the study, Rose (2011) highlights that technological adoption towards Smart Production Systems is relatively low. This has also been recorded from the responses of the research participants, quoting high costs and inadequate leadership act as definitive inhibitors to organizational architecture for Manufacturing SMEs.

The significance of these findings can assist government when undergoing policy reformations. These insights can assist to ascertain initiatives that can be introduced to change key drivers' perceptions and drive activity towards investing in Smart Production

Systems to facilitate growth of the manufacturing industry as one of the leading industries of employment and GDP contribution in South Africa.

6) RECOMMENDATIONS

For the SME Manufacturing industry to begin cultivating its potential towards the country's GDP and address issues of unemployment, the government can directly get involved. The involvement of the government should be in form of subsidies that are made available for SME Manufacturers who aim to adopt Smart Manufacturing Systems but struggle to afford these at the cost of their business continuity. These SME Manufacturers should be identified as potential value creators with a viable business plan that depicts how Smart Manufacturing Systems will create competitive edge to take advantage of industry growth opportunities. The SMEs should also be able to prove benefit to their communities in form of employment and responsible environmental business practices.

However, this process should be stringent in its management to avoid attracting corrupt officials through strict qualifying criteria that seek to eliminate any conflicts of interest. To further combat potential corruption and alleviate any unethical practices, robust consequence management should be in place that is enforceable by the judiciary.

Upon awarding the SME a subsidy, the government can further appoint manufacturing expert practitioners that can assist key drivers of these Manufacturing SMEs to minimize failure while change managing, optimizing and educating key drivers of Organizational Architecture.

7) REFERENCES

- A. Bayode, J. v. d. P. a. R. R., 2019. *4th Industrial Revolution: Challenges and Opportunities in the South African Context.* Johannesburg, Int'l Conference on Science, Engineering, Technology & Waste Management, p. 7.
- A. Bayode, J. v. d. P. a. R. R., 2022. *4th Industrial Revolution: Challenges and Opportunities in the South African Context.* Johannesburg, Int'l Conference on Science, Engineering, Technology & Waste Management (.
- Alavian, P., 2020. Smart production systems: automating decision-making in manufacturing environment. *International Journal of Production Research ,* 58(3), p. 11.
- Architecture, I. s. f. O., 2021. *school of business and social sciences.* [Online] Available at: https://mgmt.au.dk/icoa/old-pages/about-icoa/organisational-architecture#:~:text=Organisational%20Architecture%20is%20%22a%20theory,(Burton%20and%20Obel%2C%202011a%2C [Accessed 5 11 2022].
- Augustyn., A., 2020. *Encyclopedia Brittanica.* [Online] Available at: https://www.britannica.com/technology/manufacturing [Accessed 12 June 2022].
- Chris Sauer, L. P. W., 2002. The Evolution of the Organizational Architect. *MIT SLOAN Management Review,* 43(3), p. 11.
- Dewa, M., 2014. *an empirical analysis of operational disturbances and their impact on business performance in manufacturing firms: case tooling industry south africa.* Stellenbosch, SAIIE26 Proceedings.
- Galbraith, J., 2016. *Galbraith Management Consultants.* [Online] Available at: https://www.jaygalbraith.com/services/star-model [Accessed 15 June 2022].
- Glen Robbins, M. V., 2016. *The State of Manufacturing in South Africa & eThekwini: Context for the Large & Medium Manufacturing Firms Survey,* Durban: s.n.
- Gordon, J., 2022. *The Business Professor.* [Online] Available at: https://thebusinessprofessor.com/en_US/management-leadership-organizational-behavior/burke-litwin-model-explained [Accessed 19 11 2022].
- Hammer, C. S., 2011. The Importance of Participant Demographics. *American Journal of Speech-Language Pathology,* p. 3.

- Hanin Alqam, M. S., 2020. An Exploratory Study and Impact of Fourth Industrial Revolution (4IR) on SMEs in the Middle East. *international journal of integrated engineering,* 12(7), p. 7.
- Hazem Ali, T. C. Y. H., 2021. Sustainable Manufacturing Practices, Competitive Capabilities, and Sustainable Performance: Moderating Role of Environmental Regulations. *MDPI*, 1 September, p. 18.
- Hermann Spangenberg, C. T., 2013. A critical review of the Burke-Litwin model of leadership, change and performance. *Journal of the Southern African Institute for Management Scientists,* 22(2), p. 8.
- Kamble, S. S., 2020. A performance measurement system for Industry 4.0 enabled smart manufacturing system in SMMEs-A review and empirical investigation. *International Journal of Production Economics,* Volume 299, p. 16.
- Lanier, J. A., 2012. Transformational Organizational Design: Appealing to Successive Generations of Workers. *Journal of Strategic Leadership,* 4(1), p. 13.
- Leboea, S. T., 2017. The Factors Influencing SME Failure in South Africa. *University of Cape Town: Graduate School of Business,* 1(1), p. 136.
- Lee, G. J., 2019. *Designing Organizations for people led organizations.* 1 ed. Randjiesfontein: Silk Route Press.
- Leos Safar, J. S., 2018. Concept of SME Business Model for Industry 4.0 Environment. *TEM Journal,* 7(3), p. 13.
- Manje Zwane, M. K., 2019. Shaping the organizational architecture for SME survival: A case of nascent small restaurants in Durban. *African Journal of Hospitality, Tourism and Leisure,* 8(4), p. 17.
- McCoy, J. W., 2022. *Academy to Innovate HR AIHR.* [Online] Available at: https://www.aihr.com/blog/organizational-design-models/ [Accessed 19 February 2023].
- Mindtools, 2018. *Mindtools.* [Online] Available at: https://www.mindtools.com/pages/article/newPPM_95.htm [Accessed 4 April 2022].
- Natasha Ashvinee Rajendran, A. H. S., 2020. Uptake Of Sustainable Manufacturing Practices By Food Manufacturing Firms: A Systematic Review. *nternational Journal of Advanced Science and Technology,* 29(9), p. 12.
- Núbia Carvalho, O. C. E. C. M. G., 2018. *Manufacturing in the fourth industrial revolution: A positive prospect in sustainable manufacturing.* Sao Carlos, Procedia Manufacturing, p. 8.

- Pai Zheng, H. W., 2018. *Smart manufacturing systems for Industry 4.0: Conceptual framework, scenarios, and future perspectives,* s.l.: Springer Nature.
- Rose, A. D. B., 2011. *Lean manufacturing best practices in SMEs.* Malaysia, International Conference on Industrial Engineering and Operations Management.
- Rose, A. N. M., 2009. *A review on lean manufacturing practices in small and medium enterprises,* Selangor, Malaysia: AMReG.
- Sameer Mittal, M. A. K., 2018. A Critical Review of Smart Manufacturing & Industry 4.0 Maturity Models: Implications for Small and Medium-sized Enterprises (SMEs). *Journal of Manufacturing Systems,* p. 40.
- Silverman, L. L., 1997. *ORGANIZATIONAL ARCHITECTURE: A framework for successful transformation,* s.l.: partners for progress.
- Sinfree Gono, G. H. G. B. Ö., 2020. *Challenges of ICT Adoption by South African SMEs: A study of Manufacturing and Logistics Firms ,* London: Royal Holloway University of London.
- Sithembiso Govuzela, C. M., 2019. Organisational agility, business best practices and the performance of small to medium enterprises in South Africa. *South African Journal of Business Management,* p. 13.
- Stone, K. B., 2015. Burke-Litwin Organizational Assessment Survey: Reliability and Validity. *Organization Development Journal,* p. 19.
- USBLS, 2011. *U.S. Bureau Of Labor Statistics.* [Online]
  Available at: https://www.bls.gov/k12/productivity-101/content/what-is-productivity/home.htm
  [Accessed 15 May 2022].

8) APPENDICES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card_export-dataset-export-Changes in Or


card_export-dataset-export-Changes in Or


card_export-dataset-export-Changes in Or


Default Report.pdf

Summary of Average annual revenue

Categorical Summary

Choice	Checked P	Confidenc	Checked C	Sample Size
R0 – R20 M	60.2%	49.5% to 7	50	83
R80 millio	25.3%	17.2% to 3	21	83
R20 Millio	8.4%	4.1% to 16	7	83
R40 Millio	6.0%	2.6% to 13	5	83
R60 Millio	3.6%	1.2% to 10	3	83

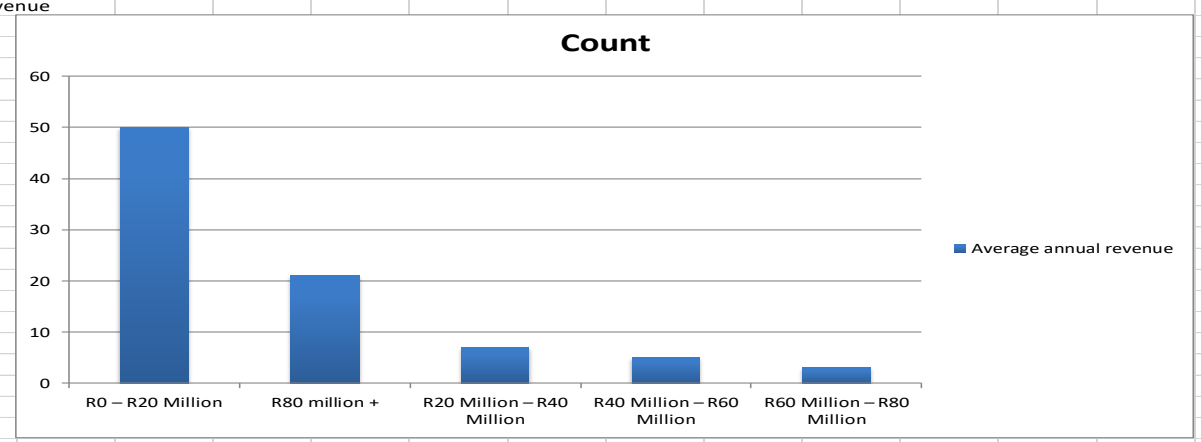
Select a chart and choose "Clustered Column", "100% Stacked Column", or "Pie" chart in Powerpoint or Excel, to change the chart type.
To create a correct "100% Stacked Column" chart, choose the chart then click "Switch Row/Column" (PC) or "Switch Plot" (Mac) in the chart tools

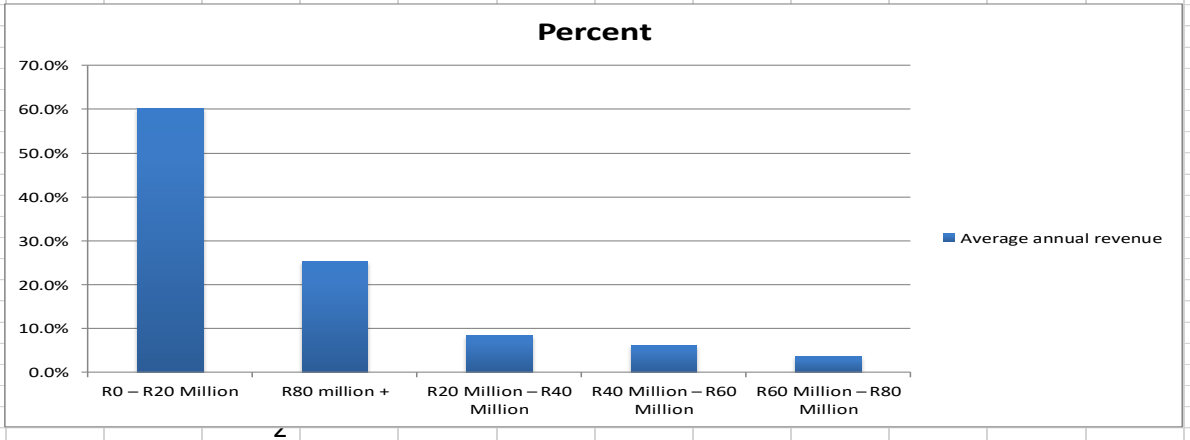
Count

	Average a
R0 – R20 M	50
R80 millio	21
R20 Millio	7
R40 Millio	5
R60 Millio	3

Percent

	Average annual revenue
R0 – R20 M	60.2%
R80 millio	25.3%
R20 Millio	8.4%
R40 Millio	6.0%
R60 Millio	3.6%





Summary of Best practices of Organizational Architecture for manufacturing SME's

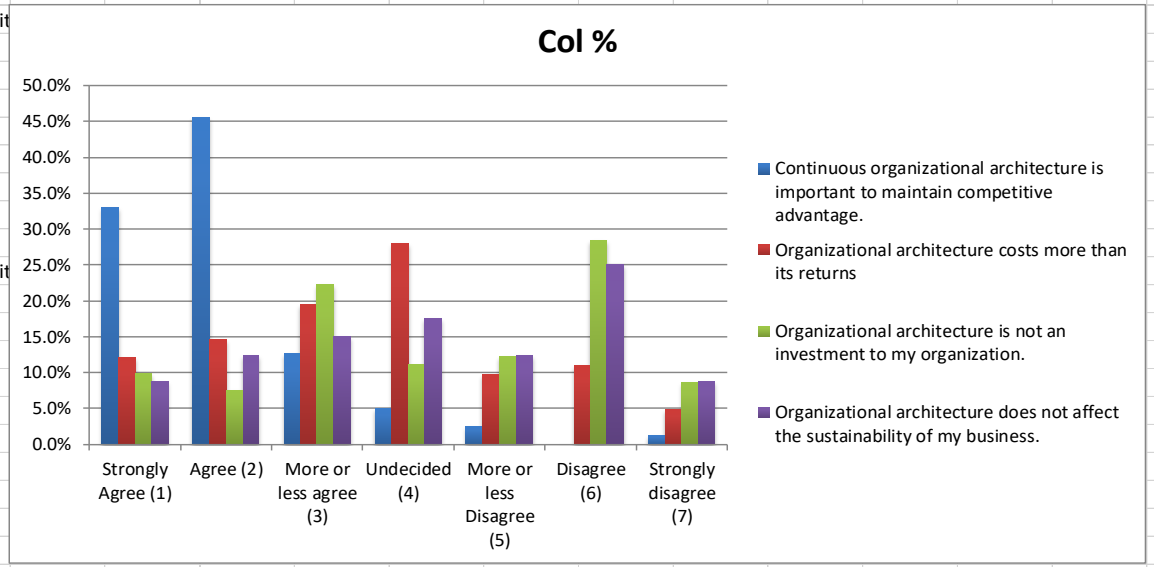
Select a chart and choose "Clustered Column", "100% Stacked Column", or "Pie" chart in Powerpoint or Excel, to change the chart type.

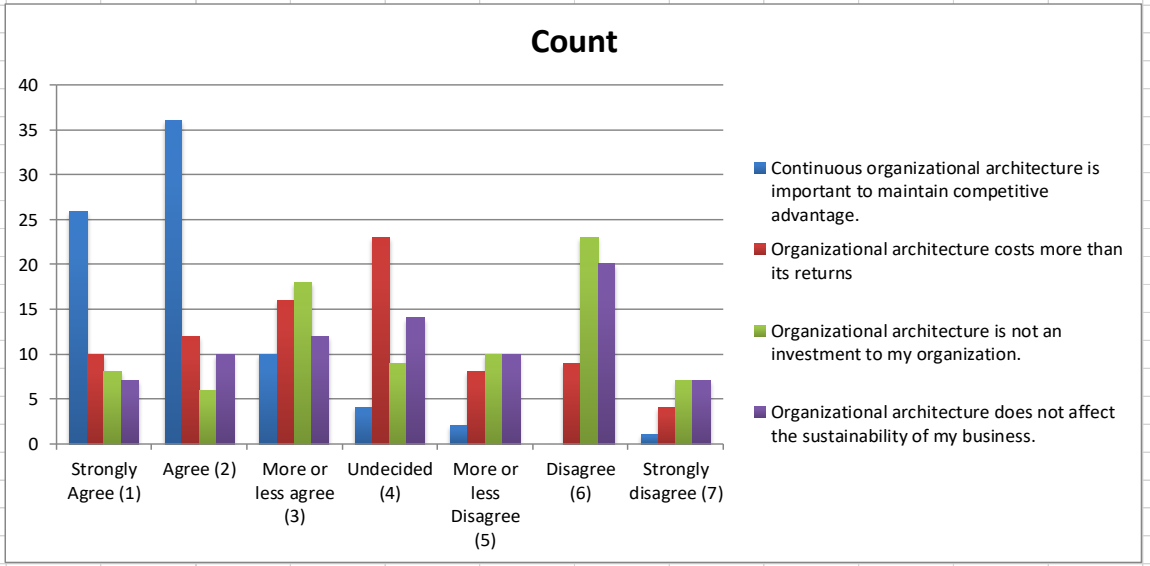
Col %

	Continuou	Organizati	Organizati	Organizational archit
Strongly A	32.9%	12.2%	9.9%	8.8%
Agree (2)	45.6%	14.6%	7.4%	12.5%
More or le	12.7%	19.5%	22.2%	15.0%
Undecidec	5.1%	28.0%	11.1%	17.5%
More or le	2.5%	9.8%	12.3%	12.5%
Disagree (	0.0%	11.0%	28.4%	25.0%
Strongly d	1.3%	4.9%	8.6%	8.8%

Count

	Continuou	Organizati	Organizati	Organizational archit
Strongly A	26	10	8	7
Agree (2)	36	12	6	10
More or le	10	16	18	12
Undecidec	4	23	9	14
More or le	2	8	10	10
Disagree (	0	9	23	20
Strongly d	1	4	7	7





Summary of For the following question, please indicate the number that best expresses your opinion

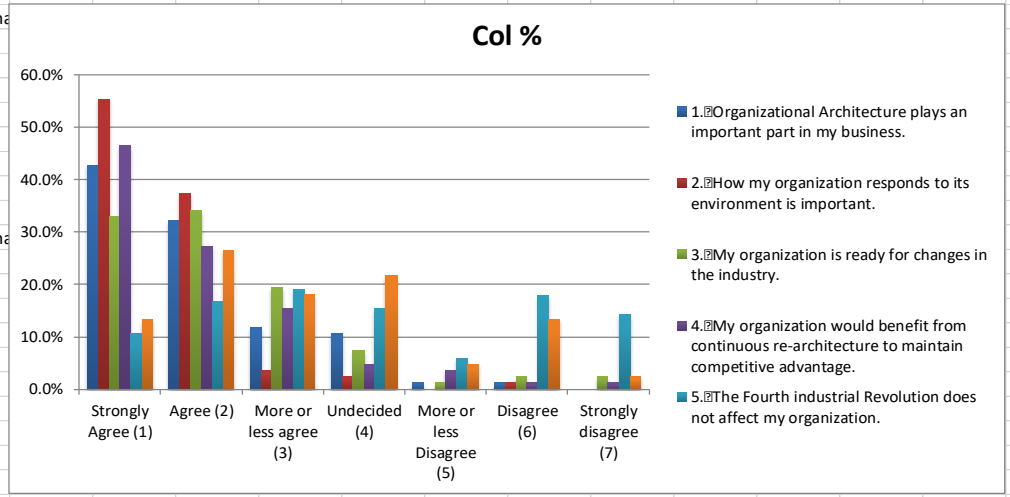
Select a chart and choose "Clustered Column", "100% Stacked Column", or "Pie" chart in Powerpoint or Excel, to change the chart type.

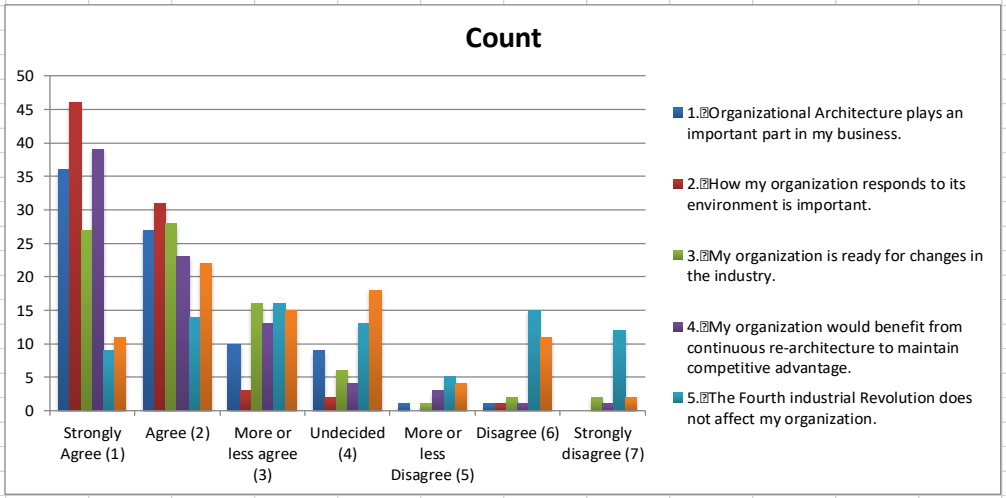
Col %

	1.Organiza	2.How my	3.My orga	4.My orga	5.The Fou	6.My organization ha
Strongly A	42.9%	55.4%	32.9%	46.4%	10.7%	13.3%
Agree (2)	32.1%	37.3%	34.1%	27.4%	16.7%	26.5%
More or le	11.9%	3.6%	19.5%	15.5%	19.0%	18.1%
Undecidec	10.7%	2.4%	7.3%	4.8%	15.5%	21.7%
More or le	1.2%	0.0%	1.2%	3.6%	6.0%	4.8%
Disagree (	1.2%	1.2%	2.4%	1.2%	17.9%	13.3%
Strongly d	0.0%	0.0%	2.4%	1.2%	14.3%	2.4%

Count

	1.Organiza	2.How my	3.My orga	4.My orga	5.The Fou	6.My organization ha
Strongly A	36	46	27	39	9	11
Agree (2)	27	31	28	23	14	22
More or le	10	3	16	13	16	15
Undecidec	9	2	6	4	13	18
More or le	1	0	1	3	5	4
Disagree (	1	1	2	1	15	11
Strongly d	0	0	2	1	12	2





Summary of 3.My organization is ready for changes in the industry. vs Average annual revenue

3.My orga	Average a	Checked C	Sample Siz	Sample Size of Average annual revenue
Strongly A	R0 — R20 N	17	26	49
Agree (2)	R0 — R20 N	18	28	49
More or le	R0 — R20 N	8	15	49
Undecidec	R0 — R20 N	3	6	49
More or le	R0 — R20 N	1	1	49
Disagree (	R0 — R20 N	1	2	49
Strongly d	R0 — R20 N	1	2	49
Strongly A	R20 Millio	0	26	7
Agree (2)	R20 Millio	4	28	7
More or le	R20 Millio	1	15	7
Undecidec	R20 Millio	1	6	7
More or le	R20 Millio	0	1	7
Disagree (	R20 Millio	1	2	7
Strongly d	R20 Millio	0	2	7
Strongly A	R40 Millio	3	26	5
Agree (2)	R40 Millio	2	28	5
More or le	R40 Millio	0	15	5
Undecidec	R40 Millio	0	6	5
More or le	R40 Millio	0	1	5
Disagree (	R40 Millio	0	2	5
Strongly d	R40 Millio	0	2	5
Strongly A	R60 Millio	0	26	2
Agree (2)	R60 Millio	1	28	2
More or le	R60 Millio	0	15	2
Undecidec	R60 Millio	0	6	2
More or le	R60 Millio	0	1	2
Disagree (	R60 Millio	0	2	2
Strongly d	R60 Millio	1	2	2
Strongly A	R80 millio	6	26	20
Agree (2)	R80 millio	6	28	20
More or le	R80 millio	6	15	20
Undecidec	R80 millio	2	6	20
More or le	R80 millio	0	1	20
Disagree (	R80 millio	0	2	20
Strongly d	R80 millio	0	2	20

Count

	R0 — R20 N	R20 Millio	R40 Millio	R60 Millio	R80 million +
Agree (2)	18	4	2	1	6
Disagree (	1	1	0	0	0
More or le	1	0	0	0	0
More or le	8	1	0	0	6
Strongly A	17	0	3	0	6
Strongly d	1	0	0	1	0
Undecidec	3	1	0	0	2

All %

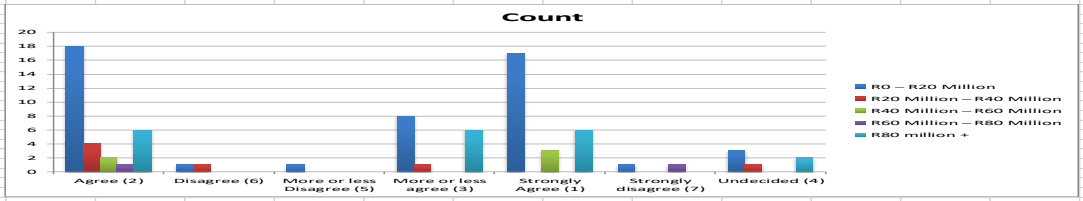
	R0 — R20 N	R20 Millio	R40 Millio	R60 Millio	R80 million +
Agree (2)	22.5%	5.0%	2.5%	1.3%	7.5%
Disagree (	1.3%	1.3%	0.0%	0.0%	0.0%
More or le	1.3%	0.0%	0.0%	0.0%	0.0%
More or le	10.0%	1.3%	0.0%	0.0%	7.5%
Strongly A	21.3%	0.0%	3.8%	0.0%	7.5%
Strongly d	1.3%	0.0%	0.0%	1.3%	0.0%
Undecidec	3.8%	1.3%	0.0%	0.0%	2.5%

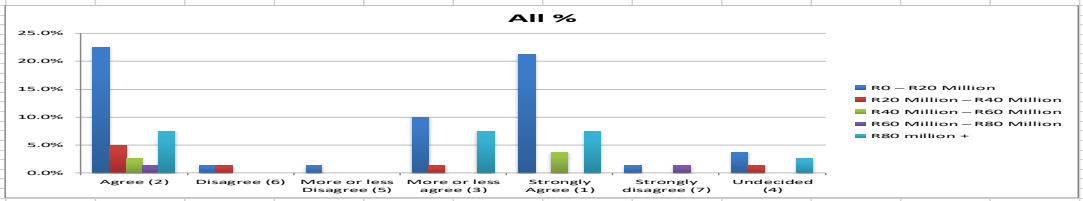
Check %

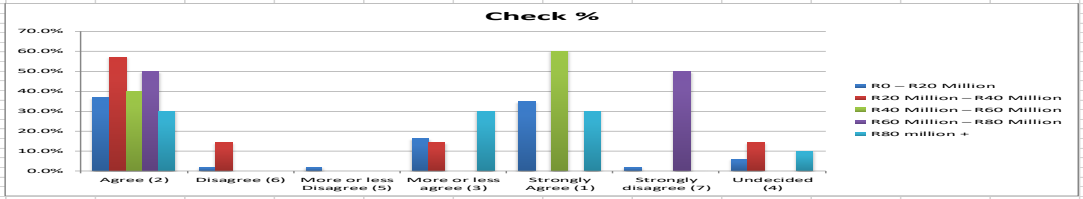
	R0 — R20 N	R20 Millio	R40 Millio	R60 Millio	R80 million +
Agree (2)	36.7%	57.1%	40.0%	50.0%	30.0%
Disagree (	2.0%	14.3%	0.0%	0.0%	0.0%
More or le	2.0%	0.0%	0.0%	0.0%	0.0%
More or le	16.3%	14.3%	0.0%	0.0%	30.0%
Strongly A	34.7%	0.0%	60.0%	0.0%	30.0%
Strongly d	2.0%	0.0%	0.0%	50.0%	0.0%
Undecidec	6.1%	14.3%	0.0%	0.0%	10.0%

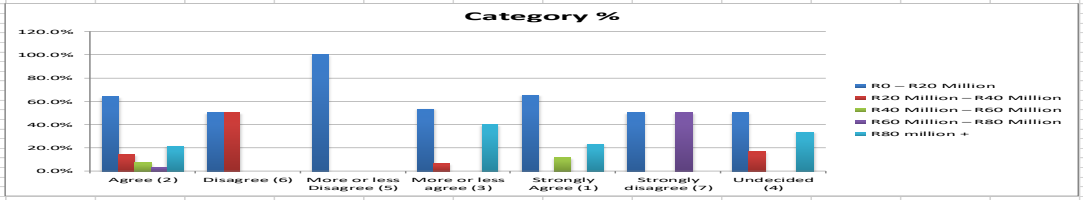
Category %

	R0 — R20 N	R20 Millio	R40 Millio	R60 Millio	R80 million +
Agree (2)	64.3%	14.3%	7.1%	3.6%	21.4%
Disagree (	50.0%	50.0%	0.0%	0.0%	0.0%
More or le	100.0%	0.0%	0.0%	0.0%	0.0%
More or le	53.3%	6.7%	0.0%	0.0%	40.0%
Strongly A	65.4%	0.0%	11.5%	0.0%	23.1%
Strongly d	50.0%	0.0%	0.0%	50.0%	0.0%
Undecidec	50.0%	16.7%	0.0%	0.0%	33.3%









Summary of For the following question, please indicate the number that best expresses your opinion

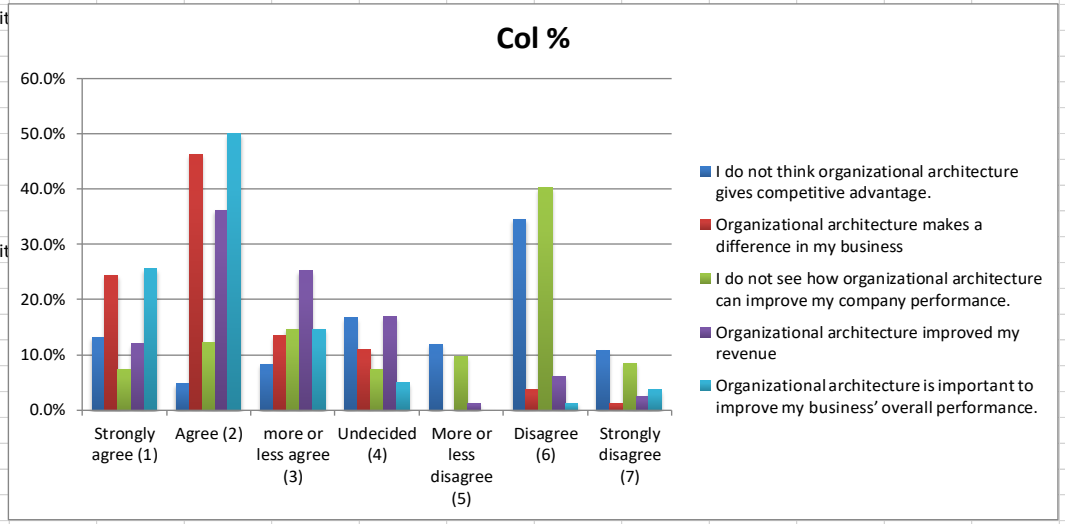
Select a chart and choose "Clustered Column", "100% Stacked Column", or "Pie" chart in Powerpoint or Excel, to change the chart type.

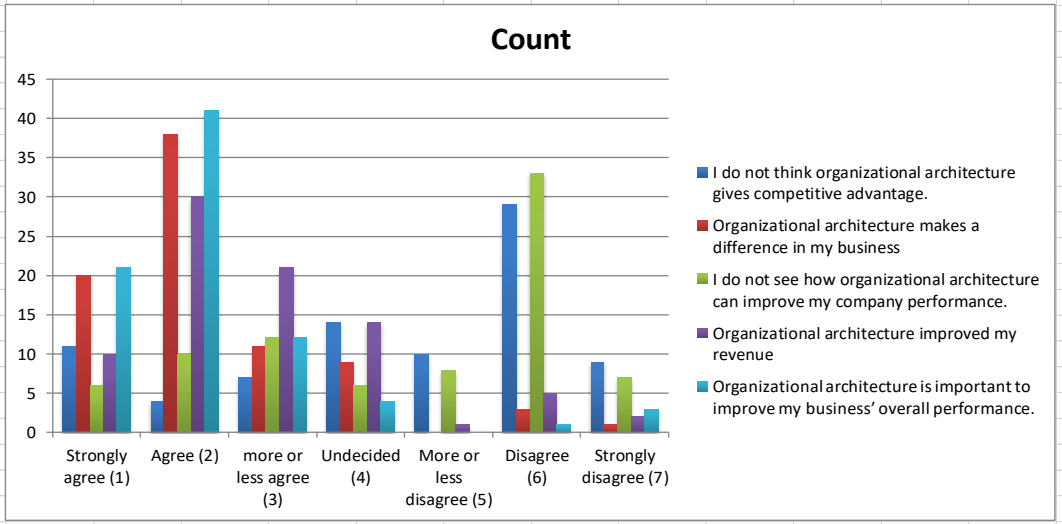
Col %

	I do not th	Organizati	I do not se	Organizati	Organizational archit
Strongly a	13.1%	24.4%	7.3%	12.0%	25.6%
Agree (2)	4.8%	46.3%	12.2%	36.1%	50.0%
more or le	8.3%	13.4%	14.6%	25.3%	14.6%
Undecidec	16.7%	11.0%	7.3%	16.9%	4.9%
More or le	11.9%	0.0%	9.8%	1.2%	0.0%
Disagree (	34.5%	3.7%	40.2%	6.0%	1.2%
Strongly d	10.7%	1.2%	8.5%	2.4%	3.7%

Count

	I do not th	Organizati	I do not se	Organizati	Organizational archit
Strongly a	11	20	6	10	21
Agree (2)	4	38	10	30	41
more or le	7	11	12	21	12
Undecidec	14	9	6	14	4
More or le	10	0	8	1	0
Disagree (	29	3	33	5	1
Strongly d	9	1	7	2	3



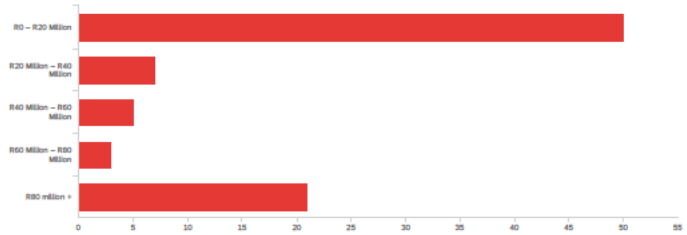


Default Report

Changes in Organizational Architecture

March 18, 2023 7:40 PM CAT

Q1 - Average annual revenue



#	Field		Choice Count
1	**R0 – R20 Million**	58.14%	**50**
2	**R20 Million – R40 Million**	8.14%	**7**
3	**R40 Million – R60 Million**	5.81%	**5**
4	**R60 Million – R80 Million**	3.49%	**3**
5	**R80 million +**	24.42%	**21**
			86

Showing rows 1 - 6 of 6