

**The relationship between change management and the business performance of the
Jewellery industry of Hong Kong: A case study of Continental Holdings Limited**

By

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Declaration and Statements

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed  _____ (Candidate)

Date 18 October 2021

STATEMENT 1

This work is the result of my own investigations, except where otherwise stated.

Other sources are acknowledged by footnotes giving explicit references.

A bibliography is appended

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STATEMENT 2

I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

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- Finally, my husband and my sister for their support during my entire studies. Their contribution has come in many ways, and I could not have done it without them.

Abstract

This study aims to point out the implementation of successful change management programs is of primary importance to the jewelry industry of Hong Kong by looking at the relationship between change management and its business performance. To do this, the author established a linear correlation model to examine business performance as the dependent variable, and the independent variables which include technological change, leadership change, and transformational change. Based on a self-administered survey sampling of 250 respondents drawn from the target company of 833 employees working in various ranks in both Hong Kong and the Mainland China. Research results suggested that the technological changes are positively linked to better business performances. Furthermore, a strong positive leadership change will create a positive outcome-oriented work environment and thus transformational effects will take place to further boost up the performance of the overall business as compared to the industry competition.

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

Organizations evolve for various reasons, one of which is the organizational transformation systems that are influenced by changes in either their internal or external environment (or even both). Organizational transformation can be challenging to understand and manage because of its propensity to evolve. The organizational transformation processes are complicated, and employees and their collaborators often express a high level of reluctance to participate in or support them. The acquisition of information and disseminating knowledge throughout an organization is intended to facilitate organizational transformation processes. Individual and corporate changes are inevitable which entail modifications to an organization's mission, vision, and operations and has consequences on both individuals and the organization. (Hornstein, 2015, Hayes, 2018) Organizations that accept changes and quickly adapt their behaviour in a desired new direction are few; for those organizations that fail to adjust to the new context necessitated by the tumultuous environment when changes are thought unneeded or highly onerous, they have to accept the sequel.

The above-mentioned situation can be observed in the Jewellery industry. In 2003, licensing systems for the businesses that traded in silver and gold products were abolished by the mainland China (Gigliotti et al., 2019). Due to this action, the manufacturing, processing, retail, and wholesale of jewellery became deregulated, implying that any individual or company would engage in the jewellery business freely without restriction. This led to a high number of producers, sellers, and distributors of the jewellery in the market which gave companies a lot of pressure in

terms of keen competition. Therefore, companies have been forced to undergo a change process to maintain their market share and even perform better in the industry.

Therefore, change management has become necessary for a company to maintain its competitiveness in the jewellery industry. Because of the policy changes in Hong Kong on the licensing of gold or silver related products, change management in Jewelry companies has been a critical aspect that formed the basis of this study, and the Continental Holdings Limited is chosen to conduct a case study to explore the impacts of change management on the business performance of the Jewellery industry.

1.2. Research aims and research objectives

Having various arguments about change management and its effect to the firm's performance, there seems to be no enough literature that supports change management and its impact towards the firm performance and this forms the basis for research for this dissert. Therefore, this study aimed to investigate the impact of the changes in the technology to the performance, determine how change management strategies employed by the Continental Holdings Limited have impacted the establishment's performance, and finally the part of leadership in the change management that has impacted the Continental Holdings Limited performance.

Businesses change and unceasingly adoption to the changes to remain competitive, yet effective organizational change appears rare (Botha et al.,2014). Nyasha (2011) asserts that need identification for the change in the entire organization and leadership in organizational change is recognized widely as the most critical responsibility challenging in organizational leadership.

Statistics have recently revealed that a third of organizational change exertions are thought successful by organizational leaders (Botha et al., 2014). Currently, it seems quite problematic to implement successful organizational change programs. The low rate of successful organizational change is more often linked to resistance by employees who are not part of the change (Osborne, 2018). If there is a perception that the change will be favorable, it will automatically lead to its support, and if it is perceived to be unfavorable, it will lead to resistance to the change program (Craddock, 2015).

Further based on the company trends those have been documented so far from various company publications, Top management led to a successful change that has been occurring due to the changes in technology over time. Kotter (1995) developed eight steps framework for organizational change. In his work he found out that many companies failed to implement change management because they could not handle errors that occur along the transformation process. Some scholars have argued that transformational leadership has been attributed to the positive impact on the innovative work behavior by the company employees. Under the technology change and the environmental dynamics challenge in both private and public organizations adoption to change is vital and a necessity as well and also these organizations should ensure that they promote innovation that improves their services and products. Kanungo and Conger (1988) argue that various factors such as organizational factors, reward system, job design and supervision style are the factors that should be addressed in the effort to manage change. Some scholars also assert that organizations can make use of the trainings and extemporary leadership to effect change. Therefore, having various arguments about change management and its effect to the firm's performance, there seems to be not enough literature that supports change management and its impact towards the firm performance, and this forms the basis for research for this dissert. Further it will seek to

investigate the impact of the changes in the technology to the performance, determine how change management strategies employed by the Continental Holdings Limited have impacted the establishment's performance, and finally the part of leadership in the change management that has impacted the Continental Holdings Limited performance.

The research objectives are listed as follow:

1. To explore the characteristics of change management of the case company
2. To explore the characteristics of business performance of the case company and measure its magnitude.
3. To measure the relationship between of change management and the business performance of the case company.

1.3 Company background of Continental Holdings Limited.

Established in 1975, Continental Holdings Limited is an operation based in Hong Kong with principal business in designing, manufacturing, marketing, and trading of fine jewellery worldwide. Over the past 4 decades, Continental has established trusting relationships with majors, mid-size chains, wholesalers, and independent jewellers worldwide. With headquarter in Hong Kong and subsidiaries in Mainland China, United States, United Kingdom and Europe, Continental has successfully built a very strong global customer base. Benchmark for craftsmanship, excellence and innovation, jewellery products are distributed to over 20 countries in the world and Continental has become the global companion of choice for a sophisticated clientele.

Continental Holdings Limited not only committed to the development of diamond and jewellery business, but also maintains a balanced portfolio in property investment and development, mining and other industries. The Group is publicly listed on the Hong Kong Stock Exchange in 1988.

Over the past year, the onset of COVID-19 has introduced global challenges of an unparalleled nature. Although economic activities gradually resumed and few major economies started to show signs of a recovery in the second half of 2020, the pandemic and the associated lockdowns, travel restrictions and social distancing have accelerated changes in the market and has led to radical shifts in how, where and what customers shopped. It is inevitable that responses to COVID-19 have speeded the adoption of digital technologies by several years. Perhaps the most dramatic economic restructuring comes in the rapid move to online commerce. During the pandemic, consumers have rapidly changed shopping habits and may never shop in the same way again. The trend towards e-commerce is likely to continue throughout the recovery from COVID-19.

2020 was an unforeseen year with COVID-19 disrupting and dampening the global economy in a big way. The pandemic lead to major lockdowns around the world and resulting in economic restrictions and stagnation. As International trade is at the heart of the jewellery business, cancellation of international tradeshow, city lockdowns, travel restrictions and social distancing have impacted the jewellery industry throughout most of 2020. In addition, the vast shipping network around the world is badly tangled and has resulted in rising prices and enormous delays at logistics hubs. This not only affected our supply to customers but getting the raw materials from different countries as well. Although the economic disruption from COVID-19 has started to ease in some parts of the world, many countries continue to experience uncertainty and

volatility. With the risk of Delta Variant of COVID-19, market conditions are expected to remain challenging, and it is still unclear how the recovery will develop.

Table 1.1 Continental Holdings Limited, Group Structure

Group Structure



- ◆ Core business:
- Jewellery design, manufacturing, and exporting
 - Diamond polishing, cutting and trading
 - Retail jewellery
 - Branding and licensing
 - Mining operations
 - Property investments



Sources: Continental Holdings Limited Annual Report, 2019

Table 1.2 Continental Holdings Limited, Worldwide Coverage “Sales Teams and Offices”

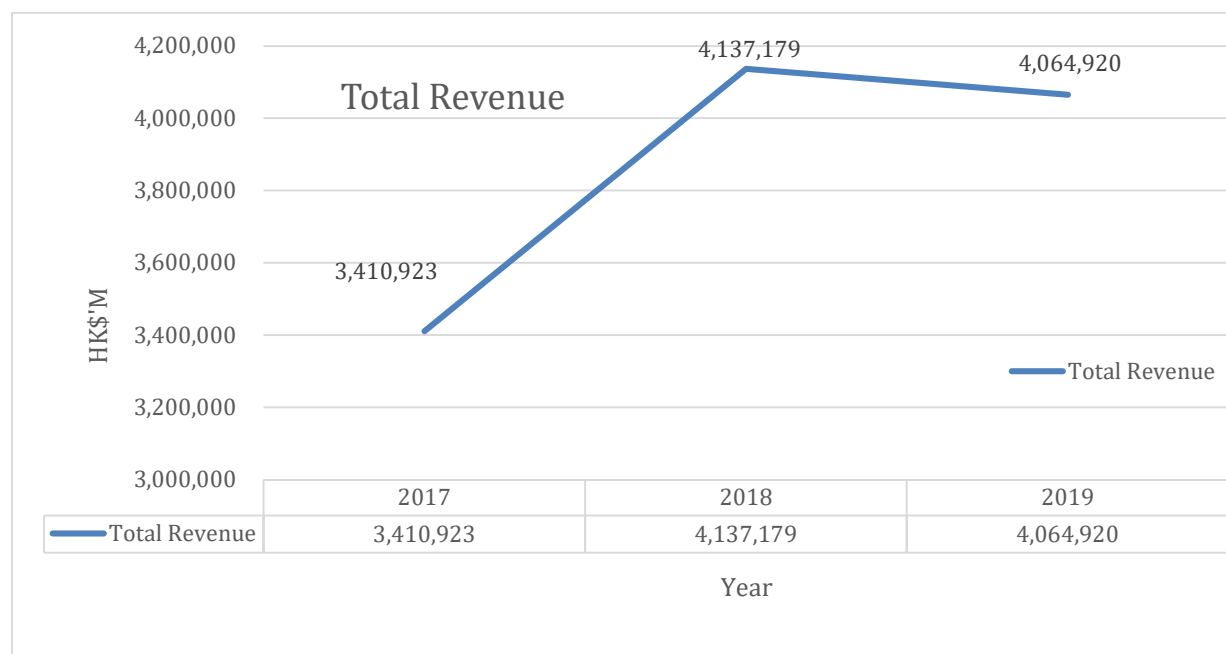
Continental's Worldwide Coverage

International Profile

- Sales teams and offices set up in Hong Kong, U.K. and Spain, also with overseas distributors in the U.S. & Canada respectively, to render distribution and services to customers worldwide
- Major markets are U.S.A. Europe, Canada, Japan and Australia



Graph 1.4 Continental Holdings Limited 3 years (2017, 2018 & 2019) revenue



Sources: Continental Holdings Limited 2017, 2018 & 2019 Annual Report

1.4 Outline of the research

The rest of the study is organized as follows. Chapter 2 reviews literature related to the theoretical concepts, Study Method and Questionnaire design. Section 3 presents research methodology, Survey Design and Data Collection. Section 4 places the analysis of results and findings. The final section discusses several implications of our results, as well as directions for further research.

CHAPTER 2

LITERATURE REVIEW

2.1 Review of theoretical concepts

2.1.1 Change Management

Change management is implemented in organizations as a promising future whereby the organization is guaranteed its competitive advantage in its market (Furusten, 2013). The term change originates from the French term 'changer,' which means 'turn' or 'bend.' Among other definitions, scholars have also defined Change concerning various contexts or even its use in multiple studies. Nordin et al., (2012) describes change management as a systematic process and a prepared plan, implementation, and sustenance of the essential function of Change in an organization. This planning includes crucial aspects like training, communication, and the new amendments of the procedures and policies. Therefore, according to the description, change management comprises the steps such as the definition of the new attitudes and values, harmony establishment among the stakeholders, planning, and implementing the Change to meet the organizations' needs (Hornstein, 2015). Employees may seek to know the purpose of Change in an organization. It will remain the management's responsibility to help every stakeholder who includes the staff, to understand the meaning of Change in the organization and their role in the Change to make the change management successful. Jooste and Bezuidenhout (2011) assert that the organization's change management purpose must be affiliated with the establishment's external and internal situation. For this purpose, the organization should ensure a continued development that is both transformational and transitional, and further, it must expedite Change that sustainable and profitable.

2.1.2 Business performance

There exists vast knowledge on change management and business performance. Norton and Kaplan (2012) suggested a system of measurements meant to engineer performance whereby they mentioned employees' motivation, productivity, and cost-efficiency as an appropriate performance measure. Oyewobi, Windapo, & Rotimi, (2017) argued that Business determine performance levels by aggregating the overall performance. They further argued that the essence of using data isn't just for measurement but is also used in the identification of the most profitable customers, determination of the price that is right, acceleration of the innovations of products, optimization of the supply chains, and identification of the accurate financial performance drivers (Shi & Yu, 2013).

Awases, Bezuidenhout, & Roos, (2013), in their study he found that the performance of the Business is related to the factors such as service improvement, profitability, market share growth, improved productivity, and customer satisfaction. Business performance is affected by the individual's diversity, group tasks, structural, technological, environmental, and managerial factors. He further argues that change management cannot exist without information modicum since performance information of the current period and the targeted future performances are a basis of performance in general. He suggests four dimensions of performance evaluation in hotels; the employee dimension, customer dimension, internal process dimension, and the financial dimension. Different methods that have been employed in change management have resulted in either increase or a decrease in each of the dimension variables.

Performance is a notion applied in business to illustrate the ideology of output in terms of attaining the quantified objectives. This concept relates to the idea of both results and behaviors. The logical notion that is used to support this line of thinking is that the behavioral point of view

is associated with the product of mental and physical efforts that are applied to various tasks that are done in the organizations, and thus they are judged as part of the result, which is the variable that is used to measure the performance of an organization (Armstrong, 2006). Therefore, performance is one of the vital factors in an organization since it is useful for evaluating the organization. In that regard, for the organization to perform their evaluation effectively, they have the responsibility of measuring the performance.

Further, there is a need to present some of the standard measures used to measure performance (Armstrong, 2006). On the other hand, performance management is a concept applied in business to illustrate the notion of a systematic process for improving business performance by establishing the performance of employees and teams created in the corporate setting. Ideally, this is one of the logical concepts used to attain better results by understanding and managing performance within an agreed framework of planned goals, competency, and standards required by a given organization (Armstrong, 2006).

Reasoning, along with Heap (2006), opined in their investigation that the performance measures are agreed upon when setting objectives. Ideally, the concept behind this line of thinking is that there is a significant need for organizations to define and set goals to make it clear what to achieve and how they can achieve it. For that reason, performance measures should offer evidence if or not the concerned has been attained. This will be the reason for creating input data for utilize by the chief as well as by people to screen their exhibition (Armstrong, 2006). Association execution has been estimated in various ways. Many creators have utilized single things to gauge organization execution, for example, organization productivity (return on complete resources). Given the wide assortment of manners by which data innovation might add to an organization's presentation and the significance of content legitimacy for a particularly critical measure, we

picked a multidimensional scale that contained organization picture with clients, piece of the pie, incomes, benefits, and generally speaking organization execution (Guimaraes and Armstrong, 2008).

2.1.3 Relationship: Change Management Strategies and Business Performance

Change management is implemented in organizations as a promising future whereby the organization is guaranteed its competitive advantage in its market (Furusten, 2013). The term change originates from the French term 'changer,' which means 'turn' or 'bend.' Among other definitions, scholars have also defined Change concerning various contexts or even its use in multiple studies. (Nordin et al., 2012) describes change management as a systematic process and a prepared plan, implementation, and sustenance of the essential function of Change in an organization. This planning includes crucial aspects like training, communication, and the new amendments of the procedures and policies. Therefore, according to the description, change management comprises the steps such as the definition of the new attitudes and values, harmony establishment among the stakeholders, planning, and implementing the Change to meet the organizations' needs (Hornstein, 2015). Employees may seek to know the purpose of Change in an organization. It will remain the management's responsibility to help every stakeholder who includes the staff, to understand the meaning of Change in the organization and their role in the Change to make the change management successful. Jooste and Bezuidenhout (2011) assert that the organization's change management purpose must be affiliated with the establishment's external and internal situation. For this purpose, the organization should ensure a continued development that is both transformational and transitional, and further, it must expedite Change that sustainable and profitable.

For effective change management in a business experiencing dynamic environmental Change, there is a need for it to adopt change management strategies so that individuals can adopt Change and direct confirm it to the positive input for the organization in question. For the management to make a strategic decision, one should consider every aspect of the operating environment and not forget the managerial style that is preferred for that purpose (Mader, et al.,2013). Unpredictable and rapid changes in customers' attitudes and technology information create change management. This capability to manage is vital for the organization's sustainability (Thomas, 2014). McCarthy and Eastman (2013) also claim that factors like political conditions and uncertain economic, social attitude changes, a competition that is fierce, taking up covers, development in technology, acquisitions, and interventions of the government that creates a business environment that is volatile, and they can only effectively perform through subsequent response to change that is flexible. To succeed, survive, and remain competitive in the current volatile and dynamic operating environment, it should successfully manage the Change, which is a necessity. Even though there is no consensus on the organization's change management framework, change is prompted by external and internal factors that manifest themselves in all dimensions, according to consensus (Kuipers, Higgs, Kickert, Tummers, Grandia, & Van der Voet, 2014). The change implementation process in any organization is a foundation that is critical to developing employee confidence in institutional activities. In the same process, employees play a crucial role (Gigliotti et al., 2019).

Further to this, different types of Change can trigger different types of behaviour and attitudes. This Change's consequences are significant to the organization's success (Skogland, & Hansen, 2017). The management's role is to maintain its competitive edge in the market and offer guidance to the organization through Change (Gerdin, 2020). Further to this, electronic usage, initiatives to

improve quality, and performance plans are among organizational change elements. Managers are obligated to deal with these changes and offer assistance to the employees during the change process by enabling them to learn new methods of doing things (Gerdin, 2020).

For a successful change strategy implementation in unsynchronized culture, the change process should be done quickly and well managed. Further to this, a thriving organizational change culture requires top management that is efficient and proficient. Ironically, the only permanent thing in the organization's world is Change (May & Stahl, 2017). However, changing business operations is not that swift as the meaning of the word change (Steigenberger, 2015). Some staff members have associated Change with the moment of chaos in an organization, and during this moment, the Change should be communicated and managed correctly. Therefore, the organization ought to assess whether the organization's Change is necessary by comparing the current practice and process desired. The next step is for the organization to evaluate its position in terms of Change and a strategy since Change itself is a procedure that requires a technique for it to occur effectively (Belias, & Koustelios, 2014). Each change process is subdivided into segments that require separate Change management strategies based on the organization's requirements to change (Packard, 2013).

Businesses change and unceasingly adoption to the changes to remain competitive, yet effective organizational change appears rare (Botha et al., 2014). Nyasha (2011) asserts that need identification for the change in the entire organization and leadership in organizational change is recognized widely as the most critical responsibility challenging in organizational leadership. Statistics have recently revealed that a third of organizational change exertions are thought successful by organizational leaders (Botha et al., 2014). Currently, it seems quite problematic to implement successful organizational change programs. The low rate of successful organizational

change is more often linked to resistance by employees who are not part of the change (Osborne, 2018). Although planned change is put in place to ensure the less reactive and be more vibrant and more proactive and be able to address huge budget deficits. Burnes added that remedial projects seem to be urgent and focused since they seem to address current and major problems. With easiness of solving problem or not it is mostly easier defining the accomplishments of these undertakings or projects. Developmental Change can boost a situation that is successful to be even more successful, for example, duplicate successful services or products or expand the volume of customers served. Projects meant for development seem to be vague and general than being remedial, with respect to the organizational member importance and how specific objectives are to meet the goals of the firm. Different individuals have got different views on what a development change is compared to remedial Change. People have the perception that there is always need for a remedial change if development change fails in a project. Kezar, (2011) adds that 13 companies consider establishing a developmental vision to address any issue after recognizing remedial issues García-Morales, Jiménez-Barrionuevo and Gutiérrez-Gutiérrez (2012), argue that for change management to be effective the company leaders must select a leadership team that will be responsible for designing the process of change and implementation of the planned Change for the firm to be successful. For the Change cascading effect to be effective in the organization at each level, leadership that is conversant with Change must be identified and put in place to spearhead in each department of the organization. Therefore, at each stage, leaders must be identified and taken through a training process to align them to the change program's goals aligned to the company's strategic goals. The role of training the leadership responsible for Change is to ensure a uniform coordination with common standards that aim to yield the same results intended by the change program. As a program for Change in the organization intensifies it will be imperative that

the new leadership that is in place through a leadership change program be accountable for the behavior and organization culture at each level of the firm. An in-depth analysis of the organizational culture can indicate the organisation's readiness to bring the key elements on the surface, define factors that recognize and influence resistance in the organizations change programs. The leadership concept has an essential role in a firm's tradition; this gained momentum in the 80s when scholars said that organisations' effectiveness tends to increase when three the dimensions of culture are used in the mix (Soebbing, Wicker & Weimar, 2015). Cultural structure, leaders support the development of vision and are supposed to share their vision and allow the subjects to follow the leader; these leaders allow criticism and feedback and at the same master themselves (Almatrooshi, Singh & Farouk, 2016). Finally, innovation, development, communication and commitment drive strategic leadership value (Cameron & Quinn, 2011). The board of managers endeavour to have an environment where the norm is critiqued, and there is a platform for innovation is laid.

Müller and Turner (2010) conducted a study on the behavioural leadership influence organizational performance. The study found out that the behaviour of leadership influences the organizations' performance. Various literature on the organization's management has been based on examining of the leadership styles. Under the concepts of the typology, leadership has been conceptualized into ways such as 'initiating structure' and 'consideration.' The empirical and theoretical literature has in agreement highlighted the role of the leadership style such as the managing director of the organization and the systems of control they have put in place are the means of the change communication of the company. Likewise, they play a significant role in the organizations' management towards achieving the desired goals. Nevertheless, it lacks a limitation imposed in the leadership examination using the typology based on strategy and control systems

(Abbas & Asghar, 2010). Apart from the leadership traits and behavioural, the study would like to establish what other factors affect the leadership change in an organization and the new leadership's focus in place. Leadership change is viewed as a strategy employed by firms to manage the Change that may be influenced by the operating and the external environment. Leadership has got a direct role towards the goals of the company. Therefore, if there is any change required to position the company in a strategic position in the market, it is the management's role to restructure itself to enable that positioning to succeed (Johannsdottir et al., 2015). Generally, two views are opposing on leadership. One group asserts that leaders can affect the performance of a firm through their strategic action and vision. The top management has the authority and power to dictate the organization structure, set a target, direct the organization, and implement formal supervision implementation. Top management and the CEOs' decisions have significantly impacted the firm's outcomes, and they are accountable for everything that happens in the organization (Cai et al., 2018). The other group believes that top leadership couldn't have much impact on the organization due to constraints that are characterized by the forces of the industry and cultural forces that act as inertia. Out of these two views, it leaves the impact of leadership change on business performance has not been well documented. Research on the Chief executive officer (CEO) level in the management structure has been anchored on the transactional and transformational leadership framework (Akan et al., 2016).

Further scholars such as Bass (1990) argue that leadership behavioural tendencies influence how various controls are used in the organization. In the organizational management literature, the frequently used typology in examining leadership is that of Coons and Stogdill (1957). Under this leadership typology style, leadership conceptualization can be done in two ways: 'initiating structure' and 'consideration.' The empirical and theoretical literature has in agreement highlighted

the role of the leadership style such as the CEO of the organization and the systems of control they have put in place are the means of the change communication of the company. Likewise, they play a significant part in the establishment's management towards achieving the desired goals. Nevertheless, it lacks a limitation imposed in the leadership examination using the typology based on strategy and control systems (Grant & Kinney, 2018). Alongside the behavioral tendencies and traits, the study would like to establish what other factors affect an organization's leadership change and the new leadership's focus in place.

2.2 Study Method & Survey Questionnaire

Assistance to the employees during the change process by enabling them to learn new methods of doing things (Gerdin, 2020). For a successful change strategy implementation in unsynchronized culture, the change process should be done quickly and well managed. Further to this, a thriving organizational change culture requires top management that is efficient and proficient. Ironically, the only permanent thing in the organization's world is Change (May & Stahl, 2017). However, changing business operations is not that swift as the meaning of the word change (Steigenberger, 2015). Some staff members have associated Change with the moment of chaos in an organization, and during this moment, the Change should be communicated and managed correctly. Therefore, the organization ought to assess whether the organization's Change is necessary by comparing the current practice and process desired. The next step is for the organization to evaluate its position in terms of Change and a strategy since Change itself is a procedure that requires a technique for it to occur effectively (Belias, & Koustelios, 2014). Each change process is subdivided into segments that require separate Change management strategies based on the organization's requirements to change (Packard, 2013).

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Burke (2017) asserts that this can be asserted as the realignment in a firm's state in a given time. This alignment with the exogenous environment is fundamental of the current and future resource distribution in line with the firm's objectives. As transformational Change aligns itself to various industry strategies competitive advantage and synergy needs to be employed (Wu, Shamsuddin, Tasmin, Takala & Liu, 2012). Various facets of strategic organizations involved defining the traditions and pinpointing the basics of comprehending the said phenomena. Reports from the practitioners heavily depended on the tales from individuals, their experiences, and case studies; however, as tradition increased among academicians, the theories and the standard frameworks that used more data began to emerge (Rosenbaum, More, & Steane, 2018). O'Malley (2014) comprehends those systems thinking is the facet for observing hierarchy that underlies myriad avenues and helps determine high Change from low Change with leverage. Systems thinking may require intentional communication that can unearth interdependency amongst particular units and portray circular relationships (D'ortenzio, 2012). Loops for feedback may act as foundations for critical monitoring and systems philosophy. How firms are run needs to be

moderated by managerial values and, at the same time, those created by a shared mission and a vision (Koutsopoulos, Henkel & Stirna, 2020). Wales, Monsen, & McKelvie (2011) say that a vision shared as a threshold in firms change that culminates in decision-making is made from the common organizational behaviour. At the least level, a vision creates solutions, in personal mastery field (Neiva, Odelius & Ramos, 2015). Since organizations in the public domain have abstract service goals and usually work in conflicting roles, a vision creates a commitment with increased sense (Nery & Neiva, 2015).

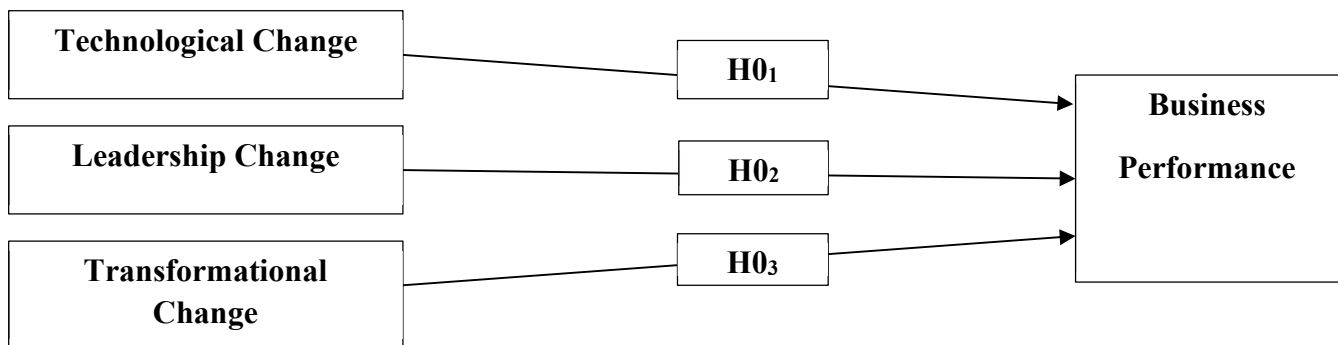
Carter, Armenakis, Field, & Mossholder (2013) conducted an empirical study, and his study he further supported the concept of transformational Change whereby he also stated that it is a common kind of Change that takes place in an organization, but still the organization change can still take place in many other different ways. Transformational Change can be practically critical in the organizations effort to align itself with the changes in environmental factors both internally and externally, which impacts the business performance (Brockhaus, Korhonen-Kurki, Sehring, Di Gregorio, Assembe-Mvondo, Babon&Zida, 2017). In their study, Maes& Van Hootegem (2011) sought to understand how transformational change impacts the firm's performance through improvements that the decision experts have outlined. In this study, they experimented with measuring the program change's effectiveness in the United Kingdom water industry using cost reduction strategies. They found that transformational Change was entirely effective to the firm's performance. They further established that when a firm undertakes multiple changes across the firm features, the company entirely exhibits improvement (Collinson, 2014). Collectively, these findings have provided more than enough evidence in support of the argument that transformational Change because a significant performance of the firm and this can be observed by the need of the entire organization to undergo through a change process in the effort

to improve the business model to accommodate the current trends of the environment (Millar, Hind & Magala, 2012).

Transformational Change is the transition between the states of the organization that is substantially different in crucial features such as structure and states. Recent literature reviews on organizational change have found considerable attention paid to discontinuous, intermittent, and episodic (Quinn & Cameron, 2019). Such a mode of change defined by literature is referred to as organizational transformation or transformation change. Studies that various scholars have carried out have explored the transformational change phenomenon and further referred to it as either of the terms such as quantum change, second-order change, large scale change, core feature change, and strategic reorientation, which adopts partly different conceptual perspectives which emphasize both varying and common elements. Crossan & Apaydin (2010) have characterized the quantum change in their study as the transition between the organizations' archetypes with the interrelated environmental elements' configurations, strategic and organizational variables. Hinings and Greenwood (2017) also adopted a similar view stressing that the archetypes are a system and structures that reflect specific schemes interpretations. The emphasis on the interpretative and

2.3 Research model

Figure 1: The hypothesis testing framework



Sources: The framework is extracted from David R. Anderson (Vol.64 No. 4 Oct 2000) & pp912-923.

2.4 Summary

Change occurs at three levels: the technological, the transformative, and the organizational. It can transform an organizational structure through a series of evolutions between different phases of re-freezing, unfreezing, and transition state referred to as transformational change. A reactive response to pressure brought on by changes in technical processes, technological change is defined as follows: Such transformations are typically profound and transformational. When applied to a specific division of a company, it usually has an outward focus on shifts in the environment and the industry in which it operates. An innovative change in all aspects, discontinuous or revolutionary change, primarily alters the business framework of an organization and encompasses rapid changes in its procedures, culture, formation, and strategy.

Based on the previous evidence, we formulate the following hypotheses for testing., company trends those have been documented so far from various company publications, Top

management led to a successful change that has been occurring due to the changes in technology over time. Kotter (1995) developed eight steps framework for organizational change. In his work he found out that many companies failed to implement change management because they could not handle errors that occur along the transformation process.

Therefore, identified in the literature have led to the following hypotheses:

H0₁ There is no technological change effects on the business performance of the Continental Holdings Limited.

H0₂ There is no leadership change effect on the business performance of the Continental Holdings Limited.

H0₃ There is no transformational change effect on the business performance of the Continental Holdings Limited.

If the above three null hypothesis are rejected statistically, we can conclude that there are significant relationship between technological change and business performance, leadership change business performance, and between transformational change and business performance.

CHAPTER 3

RESEARCH METHODOLOGY

This section introduces the methodology used for the study and describes the data collection and analysis methods. The first sub-section addresses the research design which is devoted to formulating the research framework and provide a step-by-step procedure to answer each research questions and justifying the hypothesis, the second sub-section is devoted to explaining the statistical methods used to analyze the date collected, and the final sub-section mentions the ethical Considerations and the limitations of this study.

3.1 Research Design

As mentioned in section 1.2 that the three research objectives of this study are (1) to explore the characteristics of change management of the case company and measure its magnitude (2) To explore the characteristics of business performance of the case company and measure its magnitude., (3) to measure the relationship between change management and the business performance of the case company. We will use conduct a descriptive statistical analysis form the collected survey data to explore the characteristics of the three change management constructs and the business performance construct. Regarding the justification of the relationship between change management and the business performance, we will performance a t-test for the significant of the population correlation coefficient of each of the paired variables regarding the following listed hypothesis:

H0₁ : There is no relationship between technological change business performance

H0₂ : There is no relationship between leadership change and business performance

H0₃ : There is no relationship between transformational change business performance

3.1.1 Definition of variables

The dependent variable of his study is the company's business performance (Y). As suggested by the literature reviewed, we use six constituent variables to measure this construct of the study: product range, labour cost, service delivery cost, product quality, company profitability, and market share. Assuming the six constituents are equal weighted, we used their arithmetic mean to measure the magnitude of the business performance. The observed value of this variable is attached at Appendix B.

There three independent variables in this study, they are technological change, leadership change, and transformational change.

Technological change (X1) is the productivity change that results from the changes in the factors of the production. In the jewelry company the gold and the silver use changed since it was made available without restriction This change impacts the production volumes and designs that will be attractive to the customers in the market that is competitive. As suggested by the literature reviewed, we use five variables (IT system, labour workload reduction new technology, data processing and communication system, gradually introduction of new technology, and Employees' preparation for the introduction of new technology) to measure this construct of the study.

Assuming the five constituents are equal weighted, we used their arithmetic mean to measure the magnitude of the technological change. The observed value of this variable is attached at Appendix B.

Leadership change (X2) is the change of the team that is responsible for the business management for the purpose of achieving new set goals due to the changes of the business operational environment. As suggested by the literature reviewed, we use six variables (relevance for employee motivation process, leadership competency, ethical leadership, stimulate subordinates to challenge their value system, promote creativity and Innovation, and reward ethical conduct by employees) to measure this construct of the study. Assuming the six constituents are equal weighted, we used their arithmetic mean to measure the magnitude of the leadership change. The observed value of this variable is attached at Appendix B.

Transformational change (X3) is change that is fundamental in form of system, process and the functions. Transformational change is a term that is indifferent to normative goals or ideals, and it can have both positive and dire consequences. Addressing business environmental change will need transformation in the context of jewelry market changes. As suggested by the literature reviewed, we use five variables (policies and procedures to accommodate changes, transformational leaders, embraced teamwork embracement, employee's uncertainty regarding unplanned events) to measure this construct of the study. Assuming the five constituents are equal weighted, we used their arithmetic mean to measure the magnitude of the transformation change. The observed value of this variable is attached at Appendix B.

3.1.2 Data collection

This research will employ quantitative research method, where the information that is gained in this research is gained from actual participants. The logic that is behind this line of thinking is that this research will employ primary data. Ochola (2017) asserts that the term "primary data" refers to information gathered directly by the researcher for the study's purposes. Interviews and questionnaires will be used to collect data. Research questionnaires with both structured and open-ended questions will be created and distributed. The purpose of quantitative research is to attain greater knowledge and understanding of the social world. Researchers use quantitative methods to observe situations or events that affect people. Quantitative research produces objective data that can be clearly communicated through statistics and numbers. Quantitative research is used by social scientists, including communication researchers, to observe phenomena or occurrences affecting individuals. This is vital since this research is concerned with the opinion of people regarding the four variables that are connected with change management.

The target population refers to the set of people for whom information is sought. A population is a distinct set of persons, events, services and elements, as well as a collection of households or things that are being researched. Lower-level management, top-level management, and mid-level management from Continental Holdings Limited were all part of the target population. The target population that was used in this research included 833 population that came from three category, that include top level management being 67, middle level managers that were 127, and lower-level managers that were 640.

3.1.3 Sampling method

The Convenience Quota Sample Method is used because it is a favored sampling technique (Ackoff, 1953, Shimada & Craig 2013, Skogland & Hansen 2017). Convenience sampling often helps to overcome many of the limitations associated with research.

The study will use a sampling procedure known as stratified sampling in the sample selection representing the target population. Stratified sampling will be considered appropriate since it guarantees proper representation of every subgroup. It also provides a good population coverage since the researcher has no control over the strata when carrying out random selection from the subgroups or strata. The target population will be divided into three strata namely Top-level, middle-level, and lower-level management. In each stratum, 30% of the target population will be used as our sample population in each stratum who will be randomly picked. Sampling is a statistical practice concerned with the individual or observation selection that was intended to produce some knowledge concerning the concerned population, purposely for the statistical inferences (Mugenda & Mugenda, 2012). The study used 30% of the target population to be an authentic and good sample representing the target population.

Table 3.3 The distribution of sample size by management level in the management

Population category management	Target	Sample Size (30%)
Top-level management	38	21
Middle-level management	77	53
Lower-level management	385	176
Total	500	250

3.1.4 Questionnaire design

This research is important in several ways in the jewelry industry. The first aspect that this research is taking is how it will take a significant impact in driving the various human resource managers in attaining significant improvement in the changing aspect of the company. Another concept that makes this research is important is because it will help most of the policy makers in formulating most of the rules and regulations.

The study concludes from the analysis of organizational leadership transition that organizations have a layout in which the departmental managers are subjected to the necessary human capital. However, the organizational structure is adaptable to allow future adjustments to facilitate the decision-making processes in the organization. The survey also found that each employee's job is ambiguous, as each department has a clear description of service delivery. This means the division and specialization of labor give employees the right to decide on the field in which the employees have the experience and competence to provide change management services.

3.1.5 Pilot of survey

The pilot of this study was done by five top managers. The managers were included in this research so that they can see if the questions that were formulated in the study were valid and connected with the study topic. Ideally, this process was done so that it ensures that the questionnaire that was formed in this research was valid and connected with the study topic. Therefore, they helped to attain reliability and validity of this research.

3.1.6 The implementation of the pilot survey and the full survey

The pilot of this study was done by five top managers. The managers were included in this research so that they can see if the questions that were formulated in the study were valid and connected with the study topic. Ideally, this process was done so that it ensures that the questionnaire that was formed in this research was valid and connected with the study topic. Therefore, they helped to attain reliability and validity of this research. We have done to revise the questionnaire based on the feedback from the pilot survey and implemented the full survey in using the sampling survey method, when to start and close the survey. For distribution and collect the questionnaires by different ways in persons and through intranet system by emails. We have applied the excel tools to input the survey data in computer to use the SPSS data analysis in completion.

3.2 Data Analysis Method

3.2.1 The usefulness of the data collected

3.2.1.1 Validity of the study

For the instrument's validity, the research ensured that there existed conformity of the study questions with the objectives. There was reliance on the expert opinion that helped in the evaluation of the changes in the company and if it qualified to be a technological change or just a normal process of the technology employed, and the leadership change if it did occur strategically or it was just a normal leadership shifts that are in line with the company policies. To ensure that there was Construct validity the study ensured that the relationship that existed between the variables that were operationalized were in confirmatory with the theoretical constructs that were represented as acquired in the reviewed literature. This study's variables are operationalized to reflect the assumptions theoretically, underpinning the study's conceptual framework. The research

relied on developed instruments of other related tasks and the concepts generated from the appropriate literature (Arumugum, 2018).

3.2.1.2 Reliability of the study

The degree to which research instruments produce consistent results, on the other hand, is referred to as reliability (Mugenda & Mugenda, 2006). Since it provides a one-of-a-kind quantitative approximation of the scale's internal consistency, the Cronbach's alpha coefficient of internal consistency will be used to ensure reliability in this study (Zikmund, 2009). Cooper and Schindler (2007) posit that, the coefficient must be greater than 0.7 for the instrument to be reliable. For each scale, the Cronbach's alpha was determined as part of the reliability analysis. Cronbach's alpha, according to Zikmund (2009), should be the first criterion for evaluating a measurement instrument's overall quality.

3.2.2 The descriptive statistics

Descriptive evaluation is used to determine the normality of statistical available data used in a research or statistical estimation of data in order to determine the normality. The normal distribution of data from 250 respondents is analyzed in table 3. There are numerous elements that signify data normalcy, but in this study, only four indexes are being used to determine data normality or abnormality. Mean of data, standard deviation value, skewness, as well as kurtosis are the four determinants

Summary statistics summarize and provide information about your sample data. It tells you something about the values in your data set. This includes where the mean lies and whether your data is skewed. Summary statistics fall into three main categories: Measures of location (also

called central tendency), measures of spread, and Graphs/charts. Therefore, this section will include graphs and tables to present the descriptive information of the study variables as far as their corresponding functions are concerned.

Correlation analysis in research is a statistical method used to measure the strength of the linear relationship between two variables and compute their association. A high correlation points to a strong relationship between the two variables, while a low correlation means that the variables are weakly related. Therefore, this analysis will be used in the study to make the evaluation of the relationship that exists between the study variables. Therefore, this section will be argued based on the p-value information that is gained on the study variables. Ideally, the standard p-value is 0.005, which makes it statistically significant while above that makes it not statistically significant.

Cross tabulation refers to a statistical model which is mainframe that helps a researcher to make decision that are informed in relation to the research through the identification of trends, patterns, and the correlation that exists between the parameters. In the process of conducting a research, data collected could be overwhelming and will point out to several probable outcomes that are confusing. In such a case where data is overwhelming, the cross tabulation will be helpful in arriving to the single theory by drawing comparison, trends and the correlation that exists between factors which will be mutually inclusive in the study (Pontius & Cheuk, 2006). For the examination of the correlation or relationship that exists between change management and the performance of the listed company, cross tabulation report will help in the establishing the connection between the data sets.

3.2.3 Hypothesis testing

The Hypothesis testing was done using the regression model, derived from the coefficient output of the SPSS, and the statistic where the decision on either to reject or accept the null hypothesis was made.

Hypotheses to be tested

H0₁ There is no technological change effects on the performance of the Continental Holdings Limited.

H0₂ There is no leadership change effect on the performance of the Continental Holdings Limited.

H0₃ There is no transformational change effect on the performance of the Continental Holdings Limited.

3.3 Ethical Considerations and research limitations

To guarantee that this research was according to the stipulated ethical research standards, the data that was gathered from the interviewees was treated with a high level of confidentiality, and the interviewed were be coded to hide their identity; this was of help to maintain privacy. When conducting research, personal integrity was also taken into account by remaining objective and avoiding misrepresentation of findings. The reason for conducting the study was also explained to the respondents.

There is certain delimitation that was faced during carrying out this research study and completing the thesis work. First of all, due to time and resource constraints it was difficult to carry research work in full depth. Secondly, due to the ongoing pandemic situation due to COVID-19 outbreak, it was difficult to gather data from more respondents to increase the sample size. Thirdly,

there were many other variables that could have been used in the model under study but due to the limited resources; the research is bound to follow only the given model.

CHAPTER 4

DATA ANALYSIS, RESULTS, AND FINDINGS

The study's outcomes are discussed in detail in this section, which is data presentation, analysis and discussion. The three critical topics covered in the course are the participants' demographics, the impact of strategic change management on organizational performance, and the testing of hypotheses. The pilot of this study was done by five top managers. The managers were included in this research so that they can see if the questions that were formulated in the study were valid and connected with the study topic. Ideally, this process was done so that it ensures that the questionnaire that was formed in this research was valid and connected with the study topic. Therefore, they helped to attain reliability and validity of this research. The response rate that was gained in this research was 89% given that the research received 250 questionnaires after distributing 833 questionnaires.

The data transformation process mentioned in section 3.1.1 Definition of variables, that is calculate the arithmetic mean of the constituent variables of each of the four constructs, and the figures are attached in Appendix B.

4.1 The Dataset Validity and Reliabilities

4.1.1 Validity

The study's outcomes are discussed in detail in this section, which is data presentation, analysis and discussion. The three critical topics covered in the course are the participants' demographics, the impact of strategic change management on organizational performance, and the testing of

hypotheses. The pilot of this study was done by five top managers. The managers were included in this research so that they can see if the questions that were formulated in the study were valid and connected with the study topic. Ideally, this process was done so that it ensures that the questionnaire that was formed in this research was valid and connected with the study topic. Therefore, they helped to attain reliability and validity of this research. The response rate that was gained in this research was 89% given that the research received 250 questionnaires after distributing 383 questionnaires.

According to researchers, there is a list of demographics that can be used for knowing the basic characteristics of recipients. However, this research work is intended to know recipients in terms of their age, gender, education type, the income they are earning, the experience they have, and so on based on the need of study. Results by age, experience (years), education, gender, and work type of recipients are shown below. The demographic data, which is composed and analyzed, clearly mentions information about the recipients in this study in terms of their ages, the experience they have, the education they have, gender to belong to, and employment history. The summary of the demographic element of recipients is illustrated below table.

4.1.2 Reliability

The term validity refers to the basic standards in which required concepts are accurately measured, and the term reliability is if the same result repeatedly achieved using the same methods under the same situation will be called reliable. In other words, we can also sum it up with an example like if the measurements are valid, the research must be reliable. So, reliability is an indicator that tells us about how our measurements are reliable. The reliability testing is extremely important for

every questionnaire before using it for further study. The most common and authentic way of testing the reliability is Cronbach's Alpha that was presented by Cronbach (1951). This test checks the inter-consistency of the variables selected. It ranges from 0 to 1. The closer the results are to 1, the more the reliability is considered good. Normally, 0.70 is considered as the least and best value for the reliability of the questionnaire. The internal consistency means that how much all the items included in the test helps measure the same concept and how all the items are correlated with each other to the interconnectedness of the items present in the test (Tavakol & Dennick, 2011). When researchers employ the Likert scale or the research, they must check the internal consistency (readability) of the questionnaire (Hwang, Kim, & Kim, 2020).

Table 4.2: Cronbach Alpha

Study Variable(s)	α	Variable's Items
Technological Change	0.978	5
Leadership Change	0.976	6
Transformational Change	0.980	5
Organizational Performance	0.984	6

Additionally, we used the coefficient of variation (CV) for comparing the reliability and precision of the results of our survey (Census and Statistics Department 2014; Bruton et al. 2000) which were subject to sampling error and non-sampling error. The CVs of the estimates of the main variables were provided in Appendix A. The maximum and minimum values of the CVs were 46.1% and 29.2 %, respectively. The reliability and precision of the survey results are acceptable.

4.2 Descriptive Statistics and Analysis

Descriptive evaluation is used to determine the normality of statistical available data used in a research or statistical estimation of data in order to determine the normality. The normal distribution of data from 250 respondents is analyzed in Table 4.3. There are numerous elements that signify data normalcy, but in this study, only four indexes are being used to determine data normality or abnormality. Mean of data, standard deviation value, skewness, as well as kurtosis are the four determinants. These four indicators of normalcy are popular in nature.

Table 4.3: Data selected summary statistics of the dataset

	Std. Deviation	Skewness	Mean	Kurtosis
	<i>Values</i>	<i>Values</i>	<i>Values</i>	<i>Values</i>
Technological Change	1.28257	-0.072	3.16	-1.004
Leadership Change	1.2611	-0.171	3.228	-0.925
Transformational Change	1.33404	-0.538	3.616	-0.94
Organizational Performance	1.23905	-0.009	3.164	-1.12

4.3 Correlation Analysis:

Correlation is a statistical tool used by researchers to know the basic linkage between two variables, where one is usually an independent variable and the second one is the dependent variable. This test is aimed at knowing the degree of correlation that exists between two variables. This association can be positive or negative by nature and lies in the range of strong, moderate, weak, and to no relationship. This test also predicts whether two variables have significant bondage or not, if there are two stars then research is 99.99% sure about the results and if it is just one star

then research is sure around 95% about the results, and if there is no star then the relationship between two variables is insignificant. Furthermore, when the result of Pearson correlation comes 0 then there is no relationship; if the value is less than 0.5 then there is a weak association, if the value is near to 0.5 then moderate relationships and if the value is greater than 0.5 then there is a strong connection between the study variables.

Table 4.4 The correlation matrix of the four constructs

	X1	X2	X3	Y
Technological Change (X1)	1	.980**	.928**	.954**
Leadership Change (X2)		1	.931**	.955*
Transformational Change (X3)			1	.923**
Business Performance (Y)				1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4.4 Hypothesis testing

The sample correlation coefficient (r) and the population correlation coefficient (ρ). If r is very small (close to 0), we need to verify statistically that the corresponding ρ is zero. So, the purpose of performing a t-test for ρ is significantly different from zero. (i.e. reject $H_0: \rho = 0$)

taking the calculated Pearson product moment correlation coefficients of two variables from the dataset is 0.954 (the correlation coefficient of X1 and Y in table 4.4) as an example, that is r=0.954 and the hypothesized $\rho=0$.

$$\text{The computed } t \text{ value} = \frac{r - \rho}{\sqrt{\frac{1-r^2}{n-2}}} = \frac{0.954 - 0}{\sqrt{\frac{1-(0.954)^2}{250-2}}} = 50.12$$

We have $x = 50.12$, $df = 248$, and $tails = 2$; the P-value can be found by using the Excel command:

`=TDIST (50.12,248,2)`

The result is $9.195E-132$ which is almost 0. Thus, we can conclude that, since $\alpha/2 = 2.5\%$ (α is the significant value) is greater than the P-value (which is approach to zero), that means that the computed t-value falls in the rejection region, and thus we reject the Null Hypothesis that there is no relationship between the dependent and independent variables. That is, there is a significant relationship between these two variables.

Table 4.5 The results of hypotheses testing

Variables	Calculated sample correlation coefficient (r)	Null hypotheses	The p-value	Decision at 5% significance level
Y and X1	0.954	$\rho = 0$	0	Reject H_0
Y and X2	0.955	$\rho = 0$	0	Reject H_0
Y and X3	0.923	$\rho = 0$	0	Reject H_0

Since all the P-values are less than the 5% significant level (all computed P-values are approaching to zero), we reject all the three null hypotheses. The rejection of the null hypothesis ($\rho = 0$) that there is no association between the dependent and independent variables in the population and 5% significant level (or even 1%), that means more than 95% confidence level (or even 99%) that there is significant relationship between the dependent and independent variable.

CHAPTER 5

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 A summary of major research findings

Considering the information that is gained in the literature review, it is therefore, logical that this research will take an active role in ensuring that it is attempting to answer the following research aim, objectives, and hypotheses that are gained in this research; Having various arguments about change management and its effect to the firm's performance, there seems to be no enough literature that supports change management and its impact towards the firm performance and this forms the basis for research for this dissert. To investigate the impact of the changes in the technology to the performance, determine how change management strategies employed by the Continental Holdings Limited have impacted the establishment's performance, and finally the part of leadership in the change management that has impacted the Continental Holdings Limited performance.

In this work, the foremost hypothesis (H1) was that technological change effect optimistically linked to the performance of Continental Holdings Limited. Based on results first H1 is accepted as it was scrutinized and initiate that technological change has positive association with the business performance by standard deviation of 1.28. skewness of -0.072 with mean 3.16 and kurtosis of -1.004 in the jewellery industry of Hong Kong. Based on results from the coefficient of regression test (X1: 0.954) on SPSS toll, this hypothesis was supported. It suggests that when concerned manager allows these technological change at the workplace than as a result business will perform better with employees having exceptional ideas, innovative approach, and implementation of these ideas for the jewellery industry in Hong Kong. This work of author has

findings that are in line with the outcomes of many other researchers who stated that technological shift contributes positively to the jewellery business because it is positively affecting the organizational goals as well (Hoel et al., 2020). Hence, it is suggested that the managers in the jewellery industry sector of Hong Kong must promote technological advances to increase the easiness of employees and achieve the organization's goals more effectively and for the betterment of the organization's environment.

The second hypothesis (H2) was that leadership change effect is positively associated with the business performance of Continental Holdings Limited in the jewellery industry of Hong Kong. This hypothesis is also accepted as it was examined and found that leadership shifts are positively related to the outcomes of employees based on results of linear regression and correlation analysis by (X2: 0.955) value. It indicates that leadership skills of managers and supervisors can generate trust of employees in their supervisors and as result, employees at the workplace will never take their work for granted as well as will share their good, innovative and creative ideas with their supervisors and they would be able to communicate effectively even with their co-workers. Therefore, all of the organization's goals will flourish and business will become competent, this will also be a huge benefit for any competent organization. The findings of this research work with the values of standard deviation of 1.26 skewness of -0.171, with mean 3.23 and kurtosis of -0.925 are in line with other findings available in the literature Thirlwall, (2015); Dedahanov et al., (2016); Logan and Malone, (2018), which explain that shifts in top leadership is positively contributing towards building increasing trust in supervisors at the jewellery market place.

The third hypothesis (H3) was that transformational change positively affecting business performance of Continental Holdings Limited in the jewellery industry of Hong Kong. Under this

research, the third hypothesis also stands accepted based on the results of coefficient of linear regression and regression analysis which states the value of (X3: 0.923) for the relation. It means that when employees have trust in their supervisors at the workplace then they will get the space to transform themselves as well as their work related activities which will bridge the gap on the way to achieve organizational goals and offer new innovative ideas for the growth of the organization. The findings of this research are with values of standard deviation of 1.33. skewness of -0.538. with mean 3.61 and kurtosis of -0.94 in line with other researchers, where the positive association between transformational change and business performance in the jewellery industry is found (Byun et al., 2017; Mo & Shi, 2017; Abdillahi et al., 2020).

5.2 Conclusion

This study has investigated the impact of technological, leadership and transformational changes on business performances of Continental Holdings Limited in Hong Kong's jewellery industry. The results of the study show that there is a positive and significant relationship between technological change and organizational performance at the workplace in Hong Kong which is also aligned with the studies of Rosenbaum et al., (2018) who had studied under similar context. Further, it was also found that the relationship between leadership change and business performance is also positive and significant. Therefore, the relationships predict that technological and leadership changes adopted by the management of jewellery industry will cause trust in supervisory of employees and that trust will push employees to be productive even when their participation is needed mostly by the organization to achieve organizational goals which is supported with the Schreiber et al., (2006) work under the organizational change of planned perspective and related past with future.

The researcher of this study discovered a positive as well as significant correlation for both supervisor trust and worker productivity in the jewellery industry just like in the work of Qureshi and Hassan, (2013) under similar context. As a result, it is recommended that jewellery companies establish an organizational culture as well as climate in which everyone appears secure and protected in order to prevent employee distrust in supervisors. Furthermore, if workers create trust in their superiors for any rationale, they will stay focused even if their comes a drastic change by external factors as supported by Pontins and Chenk, in 2006.

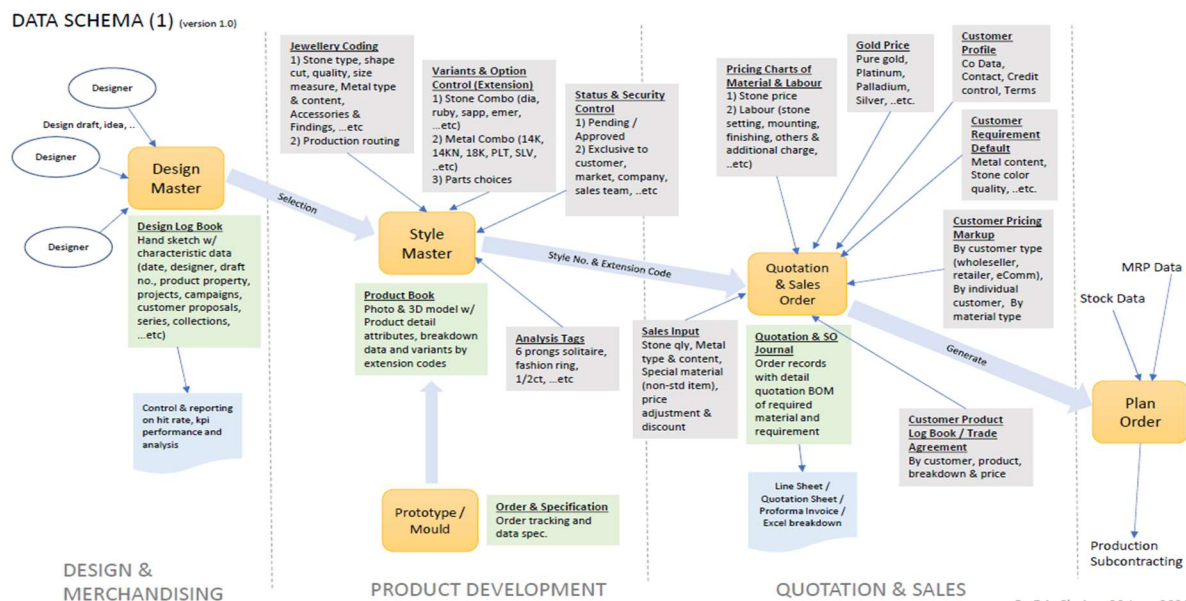
On showcasing and appropriation, some Hong Kong gem specialists have developed their own marked gems or authorizing arrangements. While this is a compelling technique to upgrade long haul seriousness, it might likewise require neighborhood adornments makers to move into dissemination. Aside from setting up direct retail outlets, e following is turning into an always common alternative for adornments retail, particularly in the US and central area China. As indicated by Euromonitor International, approximately one fifth of adornments deals in the US were made online in 2019. In central area China, the web has turned into an inexorably significant adornments deals channel where 7.2% of absolute gems deals were made in 2019, up from 2.6% in 2014. In light of the quick web based business advancement, worldwide gem dealers are developing their internet based presence quick (Packard, 2013). As indicated by a review led by HKTDC at Hong Kong International Jewelry Show in 2019, 42% of those studied are selling their items straightforwardly to shoppers by means of web based exchanging stages, with that figure ascending for a fourth successive year. Hong Kong gems retailers like Chow Sang and Chow Tai Fook, among others, are effectively fostering their web-based deals channels. It is normal that web based business in the adornments area will keep on growing. Over the more drawn out term, the

advancement of web shopping addresses another immediate deals strategy for Hong Kong goldsmiths in advancing their items (Quinns, 2019).

5.3 Recommendations

The findings of the study reveal that the company as well as the industry should adopt changing management methods to increase organizational performance. The organization's structure must be built so that each person is best placed to perform a certain role. Before introducing a particular technology, employees should also be well prepared. In addition, this study proposes that the Continental Holdings company leadership should develop ways to enhance staff motivation. Employee involvement is vital in improving organizational performance, and hence employees are urged to comply with the standard through motivation strategies. In addition, this study suggests that the management of Continental Holdings Limited fosters organizational learning. The learning process improves knowledge sharing and generation of value. Achieving team alignment in this regard should focus on customer happiness and general performance.

Table 4.6 Data Schema on Operation Procedure (2021)



5.3.1 Technological Change

According to a survey that was conducted by Continental Holdings Limited “HK Listed Company Stock No.513” (Annual Report, 2019), it is anticipated that applications of the Upgrade ERP system of latest cloud technology to apply of big data analysis using business intelligence in the workplace will greatly transform the operations of a company in the market. Through the use of IOT (Internet of Things) and artificial intelligence (AI) technology to integrate connectivity of data and operation environment, the workforce of an organization will be transformed a great deal. It is an aspect that will help in the marketing support and product management such as object detection and chatbot to extend sales by eCommerce and social media network. The task force to make informed decisions that will change the operations of a company in the market (Herschel, 2015, np).

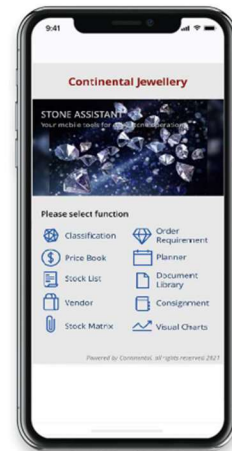
Application of this technology in the workplace will transform the operations of the human resource department, ensuring that each member of the team learns new skills. It is a driver that will play a vital role in shaping the workforce. The role of this technology is not to replace humans in the workplace, but instead, it is aimed at ensuring that the employees are equipped with more advanced skills that enable them to solve problems efficiently. Most of the companies are planning to adopt this technology in virtual forms. This is a step that will help to boost the operations of the organization in the marketplace (Bratton, 2012, np). Through the use of this driver, it is possible for a corporate to determine the challenges that can be solved using artificial intelligence. It is a factor that helps to boost the competitive nature of a company. This can be noticed after a period of time. Another importance of this technology is that it will help a

company to grow and capture a large market share. This is advantageous as it helps to boost the level of profitability as well as the growth of the entity.

Table 4.7 Digital Transformation ~ Production Operation Applications

LET'S GO

LIVE DEMONSTRATION ON TWO APPS



Stone Assistant

Table 4.8 Mobile Computing ~ Stone Operation Applications

STONE ASSISTANT APPS

Continental Jewellery

STONE ASSISTANT
Your mobile tools for stone operation

Please select function

- Classification
- Price Book
- Stock List
- Stock Card
- Stock Matrix
- Order Picking
- Order Requirement
- Picking Input
- Vendor
- Visual Charts

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石料庫存記錄卡

恒和珠寶首飾廠有限公司

石包編碼: 1-3227-110-000000-2 (JM/S100)

RD DIA WH VS2, Brilliant Cut Round

當前庫存: 1.44 ct 244 pc (.006 ct/pc)

參考編號	主單位	副單位	日期
CJ173071	1.32	223	9/6/2021
CMS1001568	-0.19	-32	5/5/2021
CMS1001558	-0.07	-11	7/4/2021
CPRD502894	-0.04	-6	2/4/2021
CJ170619	0.2	33	23/3/2021
CPRD499960	-0.07	-13	9/3/2021
CPD5020288	0.2	35	26/2/2021
CPRD497547	-0.03	-4	26/2/2021
CPRD497547	-0.02	-4	26/2/2021
CPRD497548	-0.02	-4	26/2/2021
CPRD497548	-0.02	-4	26/2/2021
CPRD497543	-0.04	-6	26/2/2021
CRP016047	-0.01	-2	22/12/2020
CJ168003	0.01	2	16/12/2020
CPRD486597	0.06	10	11/11/2020
CPRD486597	-0.06	-10	5/11/2020
CPRD486037	-0.03	-6	30/10/2020

備註: 負數表示出庫; 正數表示入庫 [R20-006A]

Stone Order

CPRD510123 33.04290.026

14KW SAPP DIA PENDANT

QTY: 1 Pool: R

SDD: 4/6/2021 FDD: 21/6/2021

Started: 14/5/2021 Ended: 1/1/1900

PER GRINDERSLEV SOENDERGAARD

#	SKU	Qty	Qty	FIN
1	NW590---	2.1	0	0
2	4-4505-110-001350	0.54	3	1
3	1-3329-110-000350	0.104	8	1

Picking Record

#	SKU	Pick	Pick
2	4-4505-110-001150-2	0.51	ct 3 pc
3	1-3329-110-000350-2	0.04	ct 4 pc
3	1-3329-110-000400-2	0.05	ct 4 pc

Picking Input

石包編碼: 1-3228-110-000050-2 (JM/S100)

出庫: 1 ct 150 pc

CPRD500864

18KY DIA RING

Picked: .25 20 +

Scan Order

Order	Description	ct	pc
CPRD500953	9KY DIA EARRING	.3	18
CPRD500864	18KY DIA RING	.25	20
CPRD500864	18KY DIA RING	.25	20

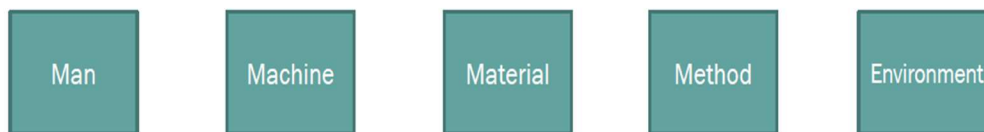
剩餘: 0.2 ct 92 pc | 總數: 0.8 ct 58 pc

5.3.1.2 Leadership Change

The survey also reveals that staff has been motivated to be more inventive and produce services that fulfill consumer expectations through the leadership of the Continental Holding firm. The motivation components of employees will boost employee involvement and hence improve individual performance and overall organizational performance through Corporate Training & Team Building.

Table 4.9 4M1E Management Method

4M1E 現場管理



什麼是4M1E法?

4M1E法指 :Man (人), Machine(機器), Material(物料), Method (方法), 簡稱 “人、機、物、法”, 告訴我們工作中充分考慮人、機、事、物四個方面因素, 通常還要包含1E: Environments (環境), 故合稱 4M1E法。也就是人們常說的: “人、機、物、法、環” 現場管理五大要素。



Table 5.0 CASE Application on IOT (Internet of Thing)

CASE APPLICATIONS 案例應用

Service order management

General Service Order App



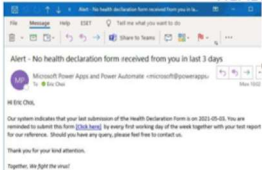
2021

A turnkey solution of digital transformation in enhancing the workflow of outdoor service order from submission of requisition to job completion between requester, tenderer, and admin staffs.



HEALTH DECLARATION FORM MANAGEMENT

By Microsoft Power Platform



Form monitoring and email alert by RPA

HR Management on Microsoft Power Platform

Employees are integral to an organisation's success



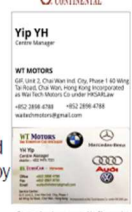
Employee Data Maintenance in Sharepoint

ABSTRACT

A turnkey solution of digital transformation in Human Resources Management by making use of Microsoft Power Platform.

Eric Choi
April 2021

Name Card Scanning by AI



Contact has been created in Sharepoint HR Teamsite under vendor list

Return

5.3.1.3 Transformational Change

The study also indicates that the transformation process encourages learning, thereby facilitating the innovative ability and acquisition of information of employees. Finally, this study shows that the three conceptions of change management methods are crucial in strategic organizational management. The study finds that a business is in a good position with the complete application of the changing management practices to achieve sustainable competitive advantages, thereby improving its market share and long-term performance.

In addition, the operating cost of manufacturing in mainland China has been increasing much in the past few years especially for the staff cost of mandatory fund contributions in social security. It is also hard to recruit and maintain skillful workers and experienced staff. The trade war between China and United State had imposed additional tariffs on goods imported which resulted in paying higher import tax by our customers. To tackle this impact, one of our strategies

is to switch part of our production line to other country that our products are not Chinese goods. To face the high cost in jewellery product development, we have been applying the technology and machines in computer aid design and rapid prototyping. With the 3D image rendering, the production cost of making real jewellery samples for presentation to customers has been greatly reduced.

5.4 Study Limitations and recommendation for Further Studies

This study research comes with some inherited limitations based on that future direction is given. Similarly, this research also has some limitations. Firstly, as this research is conducted in the industrial sector of Hong Kong, so results of this research are limited to the representativeness of the sample to the population. Hence, it is re-compensated that the same model with or without some modification can be used in our neighboring countries like Philippines, China, or India to know the influence of external change on organizational performance in industrial or any other sector.

Secondly, due to time constraints data from only 250 employees of the industrial sector was collected from Central and Western Hong Kong only, however, there may be different results from more reliable data of around 500 respondents. Therefore, future research is suggested to meet this limitation. Besides, data from one specific group living in these cities is collected; therefore, in future work data from the more diverse group should be collected.

Thirdly, due to the cross-sectional nature of the study, the results of this study are limited so it is recommended that future research should conduct longitudinal research on the model given in this research. It should also be noted that there are a lot more things that can be affected by technological, leadership, and transformational changes such as work behavior,

citizenship behavior, work-life balance, etc. therefore, in future research such variables can be used to further explore effect of such changes in an organization.

Eventually, due to limited time author was not able to explore each variable in different dimensions, therefore future research should look into this point. Besides, due to Covid-19 most of the data was gathered online that may have an issue of accuracy, therefore, in future research work, one should collect data physically or by using an interview method of data collection. Meanwhile, data from one or two cities of a country does not properly represent the whole population so, future research should address this issue by collecting data from different parts of the country.

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APPENDIX A: Preliminary Survey results

Section 1: Demographic Characteristics			
1	What is your gender? (CV=35.4%)		
a	Male		68%
b	Female		32%
	Total		100%
2	How many employees are there in your company? (CV=33.9%)		
a	Less than 500		28%
b	501-999		58.4%
c	Above 1000		13.6%
	Total		100%
3	What is the ownership structure of your company? (CV=33.9%)		
a	Privately owned		28%
b	Government owned		58.4%
c	Both Government and Privately Owned		13.6%
	Total		100%
4	What is your level of management? (CV=31.2%)		
a	Top Level		11.2%
b	Middle Level		16.8%
c	Supervisory Level		53.6%
d	Account Manager		18.4%
	Total		100%
5	What is your highest level of education? (CV=33.9%)		
a	College		28%
b	University-Undergraduate		58.4%
c	University-Post graduate and above		13.6%
	Total		100%

Section B: Independent Variables Characteristics

Technological Change

- 1** The organization continuously builds on its existing IT systems in response to the market demands (CV=42.4%)

a	No Extent	11%
b	Little Extent	20%
c	Moderate Extent	23%
d	Great Extent	6%
e	Very Great Extent	39%
Total		100%
- 2** The introduction of new technology is aimed at also reducing the workload of employees (CV=39.8%)

a	No Extent	14%
b	Little Extent	10%
c	Moderate Extent	28%
d	Great Extent	25%
e	Very Great Extent	22%
Total		100%
- 3** The organization has a combined data processing and communication system that enables it to react fast to changes in the operating environment (CV=46.1%)

a	No Extent	15%
b	Little Extent	24%
c	Moderate Extent	23%
d	Great Extent	10%
e	Very Great Extent	28%
Total		100%
- 4** The introduction of new technology in the organization is gradual (CV=40.5%)

a	No Extent	12%
b	Little Extent	44%
c	Moderate Extent	30%
d	Great Extent	8%
e	Very Great Extent	7%
Total		100%
- 5** Employees are prepared well before introduction of a particular System (CV=38.1%)

a	No Extent	10%
b	Little Extent	15%
c	Moderate Extent	36 %
d	Great Extent	18%
e	Very Great Extent	20%
Total		100%

Leadership Change

- 1 The organization leadership is tasked and implement the employee motivation process (CV=30.4%)

a	No Extent	7%
b	Little Extent	14%
c	Moderate Extent	13%
d	Great Extent	59%
e	Very Great Extent	8%
Total		100%

- 2 The leadership are competent in their respective fields (CV=42.4%)

a	No Extent	14%
b	Little Extent	17%
c	Moderate Extent	28%
d	Great Extent	14%
e	Very Great Extent	28%
Total		100%

- 3 The organization leadership uphold ethical work practices (CV=44.2%)

a	No Extent	12%
b	Little Extent	31%
c	Moderate Extent	29%
d	Great Extent	8%
e	Very Great Extent	20%
Total		100%

- 4 The leadership continuously stimulate subordinates to challenge their value system (CV=31.7%)

a	No Extent	9%
b	Little Extent	13%
c	Moderate Extent	23%
d	Great Extent	50%

e	Very Great Extent	5%
Total		100%
5	The organization leadership endeavors to promote creativity and Innovation (CV=43.4%)	
a	No Extent	15%
b	Little Extent	13%
c	Moderate Extent	30%
d	Great Extent	7%
e	Very Great Extent	35%
Total		100%
6	The organization leadership reward ethical conduct by employees (CV=40.7%)	
a	No Extent	11%
b	Little Extent	31%
c	Moderate Extent	18%
d	Great Extent	30%
e	Very Great Extent	10%
Total		100%

Transformational Change

1	We have developed policies and procedures on how to deal with change (CV=35.1%)	
a	No Extent	7%
b	Little Extent	16%
c	Moderate Extent	12%
d	Great Extent	29%
e	Very Great Extent	36%
Total		100%
2	Our company has Transformational Leaders (CV=38.6%)	
a	No Extent	9%
b	Little Extent	14%
c	Moderate Extent	33%
d	Great Extent	4%
e	Very Great Extent	41%
Total		100%
3	We have embraced teamwork (CV=40.9%)	

a	No Extent	11%
b	Little Extent	19%
c	Moderate Extent	12%
d	Great Extent	16%
e	Very Great Extent	42%
Total		100%
4	Our employee have embraced transformational strategic change practices (CV=29.2%)	
a	No Extent	6 %
b	Little Extent	9%
c	Moderate Extent	14%
d	Great Extent	52%
e	Very Great Extent	19%
Total		100%
5	There exists little uncertainty on the roles of each employee whenever an unplanned event occurs (CV=40.4%)	
a	No Extent	12%
b	Little Extent	14%
c	Moderate Extent	31%
d	Great Extent	14%
e	Very Great Extent	29%
Total		100%

Section C: Dependent Variable Characteristics Business Performance

1	The firm's product range has increased in the last five years as a result of change management process initiated (CV=38.4%)	
a	No Extent	10%
b	Little Extent	14%
c	Moderate Extent	31%
d	Great Extent	12%
e	Very Great Extent	34%
Total		100%
2	The company has been able to access low cost labor through automation in comparison the traditional service mode (CV=39.8%)	
a	No Extent	8%

b	Little Extent	44%
c	Moderate Extent	5%
d	Great Extent	39%
e	Very Great Extent	4%
Total		100%
3	The organization cost of service delivery has reduced as a result of the change process (CV=41.3%)	
A	No Extent	11%
B	Little Extent	25%
C	Moderate Extent	29%
D	Great Extent	16%
E	Very Great Extent	18%
Total		100%
4	The organization quality of products has improved in comparison with the earlier period (CV=36.9%)	
A	No Extent	8%
B	Little Extent	32%
C	Moderate Extent	18%
D	Great Extent	36%
E	Very Great Extent	5%
Total		100%
5	The company profitability level as improved as a result of the changes initiated (CV=36.7%)	
A	No Extent	11%
B	Little Extent	21%
C	Moderate Extent	24%
D	Great Extent	38%
E	Very Great Extent	6%
Total		100%
6	The company's market share has improved due to the change management process initiated (CV=44.7%)	
a	No Extent	8%
b	Little Extent	48%
c	Moderate Extent	8%

d	Great Extent	19%
e	Very Great Extent	18%
Total		100%

Appendix B: The dataset

Obs	Y	X1	X2	X3
1	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00
3	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00
7	1.00	1.00	1.00	1.00
8	1.00	1.00	1.00	1.00
9	1.00	1.00	1.00	1.20
10	1.00	1.00	1.17	1.40
11	1.50	1.00	1.17	1.40
12	1.50	1.00	1.33	1.60
13	1.67	1.00	1.33	1.60
14	1.67	1.20	1.33	1.60
15	2.00	1.40	1.50	1.80
16	2.00	1.60	1.67	2.00
17	2.00	1.60	1.67	2.00
18	2.00	1.60	1.83	2.00
19	2.00	1.80	1.83	2.00
20	2.00	2.00	2.00	2.20
21	2.00	2.00	2.00	2.20
22	2.00	2.00	2.00	2.20
23	2.00	2.00	2.00	2.20
24	2.00	2.00	2.00	2.20
25	2.00	2.00	2.00	2.20
26	2.00	2.00	2.00	2.20
27	2.00	2.00	2.17	2.20
28	2.00	2.00	2.33	2.20
29	2.00	2.00	2.33	2.40
30	2.17	2.00	2.33	2.60
31	2.17	2.00	2.33	2.60
32	2.17	2.20	2.33	2.60
33	2.17	2.40	2.33	2.60
34	2.17	2.40	2.33	2.80
35	2.17	2.40	2.33	2.80
36	2.17	2.40	2.50	2.80
37	2.17	2.40	2.50	3.00
38	2.17	2.40	2.50	3.00
39	2.17	2.40	2.67	3.20

Obs	Y	X1	X2	X3
41	2.33	2.60	2.67	3.20
42	2.33	2.60	2.67	3.20
43	2.33	2.60	2.83	3.20
44	2.33	2.60	2.83	3.20
45	2.33	2.60	2.83	3.40
46	2.50	2.60	2.83	3.40
47	2.50	2.60	2.83	3.40
48	2.50	2.60	2.83	3.40
49	2.50	2.60	2.83	3.40
50	2.50	2.80	2.83	3.40
51	2.67	2.80	2.83	3.40
52	2.67	2.80	2.83	3.40
53	2.67	2.80	2.83	3.40
54	2.67	2.80	3.00	3.60
55	2.67	2.80	3.17	3.60
56	2.67	2.80	3.17	3.60
57	2.67	2.80	3.33	3.60
58	2.67	2.80	3.33	3.60
59	2.67	2.80	3.33	3.60
60	2.67	2.80	3.33	3.60
61	2.67	2.80	3.33	3.60
62	2.67	2.80	3.33	3.60
63	2.67	2.80	3.33	3.60
64	2.67	2.80	3.33	3.60
65	2.67	2.80	3.33	3.60
66	2.67	2.80	3.33	3.60
67	2.83	2.80	3.33	3.60
68	2.83	2.80	3.33	3.60
69	2.83	3.00	3.33	3.60
70	2.83	3.00	3.33	3.60
71	3.00	3.00	3.33	3.60
72	3.00	3.20	3.33	3.60
73	3.00	3.20	3.33	3.60
74	3.00	3.20	3.33	3.60
75	3.17	3.40	3.33	3.80
76	3.33	3.40	3.33	3.80
77	3.33	3.40	3.33	3.80
78	3.33	3.40	3.33	3.80
79	3.50	3.40	3.33	3.80

40	2.17	2.60	2.67	3.20
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Obs	Y	X1	X2	X3
81	3.50	3.40	3.50	4.00
82	3.67	3.40	3.67	4.20
83	3.67	3.40	3.67	4.20
84	3.67	3.40	3.67	4.40
85	3.67	3.40	3.67	4.40
86	3.67	3.40	3.83	4.40
87	3.67	3.40	3.83	4.40
88	3.67	3.60	3.83	4.40
89	3.67	3.60	3.83	4.40
90	3.67	3.80	3.83	4.40
91	3.67	3.80	3.83	4.40
92	3.67	4.00	3.83	4.40
93	3.67	4.00	3.83	4.40
94	3.83	4.00	3.83	4.40
95	3.83	4.00	3.83	4.40
96	3.83	4.00	3.83	4.60
97	3.83	4.00	3.83	4.60
98	3.83	4.00	3.83	4.60
99	4.00	4.00	4.00	4.60
100	4.00	4.00	4.00	4.60
101	4.00	4.00	4.00	4.60
102	4.17	4.00	4.00	4.60
103	4.17	4.00	4.00	4.60
104	4.17	4.00	4.00	4.60
105	4.17	4.00	4.00	4.60
106	4.17	4.00	4.00	4.60
107	4.17	4.00	4.00	4.60
108	4.17	4.00	4.00	4.60
109	4.17	4.00	4.00	4.60
110	4.17	4.00	4.00	4.60
111	4.17	4.00	4.00	4.60
112	4.17	4.00	4.00	4.60
113	4.17	4.00	4.00	4.60
114	4.17	4.00	4.00	4.80
115	4.17	4.00	4.00	4.80
116	4.17	4.20	4.17	4.80
117	4.17	4.20	4.33	4.80
118	4.17	4.20	4.33	4.80
119	4.17	4.20	4.33	4.80

80	3.50	3.40	3.33	4.00
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Obs	Y	X1	X2	X3
123	4.17	4.20	4.33	4.80
124	4.17	4.20	4.33	4.80
125	4.17	4.20	4.33	4.80
126	4.17	4.20	4.33	4.80
127	4.17	4.20	4.33	4.80
128	4.17	4.20	4.33	4.80
129	4.17	4.20	4.33	4.80
130	4.17	4.20	4.33	4.80
131	4.17	4.20	4.33	4.80
132	4.17	4.40	4.33	4.80
133	4.17	4.40	4.33	4.80
134	4.17	4.40	4.33	4.80
135	4.17	4.40	4.33	4.80
136	4.17	4.60	4.50	4.80
137	4.17	4.60	4.50	4.80
138	4.17	4.60	4.50	5.00
139	4.17	4.60	4.50	5.00
140	4.33	4.60	4.50	5.00
141	4.33	4.60	4.50	5.00
142	4.50	4.60	4.50	5.00
143	4.50	4.60	4.50	5.00
144	4.50	4.60	4.50	5.00
145	4.50	4.60	4.50	5.00
146	4.50	4.60	4.50	5.00
147	4.50	4.60	4.50	5.00
148	4.50	4.60	4.50	5.00
149	4.50	4.60	4.50	5.00
150	4.50	4.80	4.50	5.00
151	4.50	4.80	4.50	5.00
152	4.50	4.80	4.50	5.00
153	4.50	4.80	4.50	5.00
154	4.50	4.80	4.50	5.00
155	4.50	4.80	4.50	5.00
156	4.50	4.80	4.50	5.00
157	4.50	4.80	4.50	5.00
158	4.50	4.80	4.50	5.00
159	4.50	4.80	4.50	5.00
160	4.50	4.80	4.50	5.00
161	4.50	4.80	4.50	5.00

120	4.17	4.20	4.33	4.80
121	4.17	4.20	4.33	4.80
122	4.17	4.20	4.33	4.80

162	4.50	4.80	4.67	5.00
163	4.50	4.80	4.67	5.00
164	4.50	4.80	4.67	5.00

Obs	Y	X1	X2	X3
165	4.50	4.80	4.67	5.00
166	4.50	4.80	4.67	5.00
167	4.50	4.80	4.83	5.00
168	4.50	4.80	4.83	5.00
169	4.50	5.00	4.83	5.00
170	4.50	5.00	4.83	5.00
171	4.50	5.00	4.83	5.00
172	4.67	5.00	4.83	5.00
173	4.83	5.00	4.83	5.00
174	4.83	5.00	5.00	5.00
175	4.83	5.00	5.00	5.00
176	5.00	5.00	5.00	5.00
177	5.00	5.00	5.00	5.00
178	5.00	5.00	5.00	5.00
179	5.00	5.00	5.00	5.00
180	5.00	5.00	5.00	5.00
181	5.00	5.00	5.00	5.00
182	5.00	5.00	5.00	5.00
183	5.00	5.00	5.00	5.00
184	5.00	5.00	5.00	5.00
185	5.00	5.00	5.00	5.00
186	1.00	1.00	1.00	1.00
187	1.00	1.00	1.00	1.00
188	1.00	1.00	1.00	1.00
Obs	Y	X1	X2	X3
189	1.00	1.00	1.00	1.00
190	1.00	1.00	1.00	1.00
191	1.00	1.00	1.00	1.00
192	1.00	1.00	1.00	1.00
193	1.00	0.00	1.00	1.00
194	1.00	1.00	1.00	1.20
195	1.00	1.00	1.17	1.40
196	1.50	1.00	1.17	1.40
197	1.50	1.00	1.33	1.60
198	1.67	1.00	1.33	1.60
199	1.67	1.20	1.33	1.60
200	2.00	1.40	1.50	1.80
201	2.00	1.60	1.67	2.00
202	2.00	1.60	1.67	2.00
203	2.00	1.60	1.83	2.00
204	2.00	1.80	1.83	2.00

Obs	Y	X1	X2	X3
208	2.00	2.00	2.00	2.20
209	2.00	2.00	2.00	2.20
210	2.00	2.00	2.00	2.20
211	2.00	2.00	2.00	2.20
212	2.00	2.00	2.17	2.20
213	2.00	2.00	2.33	2.20
214	2.00	2.00	2.33	2.40
215	2.17	2.00	2.33	2.60
216	2.17	2.00	2.33	2.60
217	2.17	2.20	2.33	2.60
218	2.17	2.40	2.33	2.60
219	2.17	2.40	2.33	2.80
220	2.17	2.40	2.33	2.80
221	2.17	2.40	2.50	2.80
222	2.17	2.40	2.50	3.00
223	2.17	2.40	2.50	3.00
224	2.17	2.40	2.67	3.20
225	2.17	2.60	2.67	3.20
226	2.33	2.60	2.67	3.20
227	2.33	2.60	2.67	3.20
228	2.33	2.60	2.83	3.20
229	2.33	2.60	2.83	3.20
230	2.33	2.60	2.83	3.40
231	2.50	2.60	2.83	3.40
Obs	Y	X1	X2	X3
232	2.50	2.60	2.83	3.40
233	2.50	2.60	2.83	3.40
234	2.50	2.60	2.83	3.40
235	2.50	2.80	2.83	3.40
236	2.67	2.80	2.83	3.40
237	2.67	2.80	2.83	3.40
238	2.67	2.80	2.83	3.40
239	2.67	2.80	3.00	3.60
240	2.67	2.80	3.17	3.60
241	2.67	2.80	3.17	3.60
242	2.67	2.80	3.33	3.60
243	2.67	2.80	3.33	3.60
244	2.67	2.80	3.33	3.60
245	2.67	2.80	3.33	3.60
246	2.67	2.80	3.33	3.60
247	2.67	2.80	3.33	3.60

205	2.00	2.00	2.00	2.20
206	2.00	2.00	2.00	2.20
207	2.00	2.00	2.00	2.20

248	2.67	2.80	3.33	3.60
249	2.67	2.80	3.33	3.60
250	2.67	2.80	3.33	3.60