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Impact of Business Process Redesign on MNE's performance in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management: Entrepreneurship and New Venture Creation.

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ABSTRACT

This research evaluated the perceived impact of business process re-engineering (BPR) implementation on Multinational Enterprises (MNEs) in terms of: cost, turnaround time, quality, employees' skills, knowledge, behaviour and attitudes. BPR is defined as a change of the overall process, entity structure, business management systems, personnel responsibilities and measurements of performance, developing skills, and using the information technology. The assessment was around the MNEs operating in South Africa (SA) within the motor manufacturing industry. A potential problem is that BPR which could lead to innovation and or job creation can also lead to job losses. In terms of job losses, that could be a problem for SA, which planned to create 80000 jobs from the manufacturing sector by 2020. This research is different in the sense that it evaluated the perceived impact of BPR implementation by using the questionnaires, and the evaluation was validated by data calculated from the annual report of MNEs.

DECLARATION

I, Dorothy Dolly Mofomme, declare that this research report is my own work, except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination, in this or any other university.

Signed at.....

On the .....day of 2014

DEDICATION

FOR MORAKE PERCIVAL MOFOMME

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Let me take this opportunity to acknowledge those who have offered support and assistance in generating this research.

Thanks must go firstly to Dr Jose Barreira, Mr John Badenhorst, Mr Peter Nyelisani and Mrs Merle Werbeloff; not forgetting a special thanks to my husband who supported me so dearly during the research times. Furthermore, I would like to thank the 10 Multinational Enterprises that gave their time to fill in the questionnaire.

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1 INTRODUCTION

1.1 Theoretical background to the study

Business Process Reengineering (BPR) involves a continuous improvement of the business processes and systems which may result in an enterprise making a substantial saving on cost. The first problem which may occur is that change of such magnitude can result in a total failure, instead of a success. The second challenge faced is when employees are laid off from their permanent employment, due to BPR, that introduced a better technology to expedite production in a safe and efficient manner, in any private or public enterprise. This, however, may have a negative impact on the economic outlook of any country, especially a country like South Africa, which planned to create 300 000 additional direct jobs by 2020 (National Growth Plan of South Africa, 2030). Lastly, some of these enterprises' performance indicators do not show any improvement, regarding whether employees and senior management really understand the objective of the BPR implementation project; or possibly do not know how to maintain the redesigned or re-engineered processes.

The previous research has focused on identifying the impact of various factors on the BPR implementation, as well as an organization resisting to change by BPR (Mlay, Zlotnikova & Watundu, 2013); while the proposed study will evaluate the impact of implementing a BPR project within the manufacturing sector of the Transportation Equipment Industry, for MNEs (Multinational Enterprises) in the South African context, as perceived by the employees. MNEs are defined as those firms that operate and do business in different countries around the globe (Dunning & Lundan, 2008). The proposed study will be different in the sense that the perceived impact of implementing BPR project will be validated by the financial data calculated from the annual report of the respective MNE, from the year 2008 to 2012. The financial data from the annual report will consist of the calculation and analysis of the following: the ROA (Return on Asset) which demonstrates, how productive the MNE is in terms of using its assets to generate

profits, Labour Productivity (which indicates how productive the employees are in the MNE) and ROE (Return on Equity); which demonstrate how efficiently an MNE is in terms of using common shareholder's equity.

It is hoped that the proposed study will address one of the suggested studies of Mlay et al (2013), of identifying the organizational benefit from the BPR implementation and its use in East African countries.

1.2 Context of the study

There is controversy with regard to the role BPR plays in organizations. It is perceived by employees to contribute to job losses (Omolayo, 2011), thus not bearing in mind that where there are risks, there are opportunities for innovation. It is understood that the majority of the MNEs in South Africa redesign or re-engineer their processes in order to remain innovative and competitive in the turbulent market. These enterprises employ BPR strategies in order to align and adapt to the existing business environment. Balasubramanian (2010), as cited in Setegn, Moorthy and Ensermu (2013), defines BPR as a change which is dramatic in nature. These researchers continue with their definition by stating that it constitutes a change of the overall process, entity structure, business management systems, personnel responsibilities and measurements of performance, developing skills and using the information technology.

MNEs are very important for growing the economy of the under-developed, developing and developed countries. They contribute job opportunities and supply goods and services and also contribute to the formulation of Small Micro Medium Enterprises (SMMEs) and Small Macro Enterprises (SMEs). This is elaborated and supported by the National Development Plan (NDP) of South Africa (2030), which states that the private sector, of which MNEs form a part, is required to support small businesses by procuring goods and services from them. According to the National Growth Plan of South Africa (2030), 300 000 additional direct jobs must be created by 2020, of which 80 000 must be from the manufacturing sector.

1.3 Research purpose of the study

There is confusion with regard to the role BPR plays in organizations. It is perceived by employees to contribute to job losses (Omolayo, 2011), not bearing in mind that where there are risks, there are also opportunities for innovation. There is an understanding that the majority of the MNEs in South Africa redesign or re-engineer their processes in order to remain innovative and competitive in the turbulent market. These enterprises employ BPR strategies in order to align and adapt to the existing business environment.

The purpose of this research is to evaluate the perceived impact of implementing BPR as the innovation strategy:

- On MNEs, in terms of cost, turnaround time, and quality, and
- On MNEs, in terms of employees' skills, knowledge, behaviour, and attitude.

1.4 Problem statement

A problem is evaluating the performance of the MNEs that implemented an effective BPR project.

The secondary problem is evaluating the perceived impact on MNEs' performance (in terms of turnaround time, cost, quality and employees' skills, knowledge, behaviour, and attitudes) since BPR project was implemented by obtaining survey responses from employees. The perceived impact data will be validated by evaluating the financial data (ROE, Labour Productivity and ROA) of the MNEs' since BPR project implementation (from the years 2008 and 2012).

Keywords: BPR, MNEs, Organizational Performance

1.5 Conceptual definition of terms

Ozcelik (2010) defines BPR as a tool which involves continuous approaches of process transformation that may include both fundamental change and

incremental improvements; which depends on the nature of the problem. Rajapakse and Van der Vyver (2012) further explain that BPR is a system that has radically departed from other famous business system models, like continuous improvement, lean production, downsizing, and total quality management. This is concerned with the basic rethinking and redesigning of the business processes, in order to get a dramatic and sustainable improvement in cost, quality, service, lead times, flexibility and innovation. Balasubramanian, (2010), as cited in Setegn et al.(2013), also affirms this definition of BPR as a change which is dramatic in nature. The researchers continue with their definition by stating that it constitutes a change of the overall entity structure, business management systems, personnel responsibilities and measurements of performance, developing skills, and using the information technology. It is by this definition that Business Process Redesign (BPR) is the synonym of Business Process Reengineering (BPR), because Setegn et al (2013), and Rajapakse and Van der Vyver (2012) have indicated it thus in their literature, referred to above and it will adopted throughout this proposed study.

In terms of organizational performance, Singh and Garg (2008), as cited in Fernandes and Lourenço (2011), looked at it from the perspective of performance measurement, which is defined as a set of interrelated activities involving the quantifying of the efficiency and effectiveness of the production system of an organization. Performance may relate inter alia to an overall organization or individual or a process or market segment. There are so many ways of measuring performance, two of the measurements being non financial and financial in nature. Fernandes and Lourenço (2011), as cited by Franco et al. (2006) states that:

> *strategic performance is generic, synthetic, and generally covers long periods (usually five years) and the whole organization; tactical performance is less generic and focuses on one area or on a specific organizational segment and does not encompass long periods (usually one to three years); operational performance is more analytical, it has a short-term time reference horizon (up to one year), it focuses, for instance, on the activities, processes and operations. (p2)*

The financial operational performance will be adopted in this study.

1.6 Contribution of the study

Unlike previous research that has focused on identifying the impact of various factors on the BPR implementation of the Ugandan Universities (Mlay et al.,2013), the proposed study will evaluate the impact of implementing a BPR project within the manufacturing sector of the Transportation Equipment Industry for MNEs in the South African context, as perceived by the employees. This proposed study will be different in the sense that the perceived impact of implementing BPR project will be validated by the financial data calculated from the annual report of the respective MNE, from 2008 to 2012.

Although it is known that BPR plays a major role in optimizing the company's performance, it is however often noted that the rollout of the BPR project implementation results in failure. The researchers propose a future study regarding the benefit of implementing a BPR project (Mlay et al.,2013)

The study will provide guidance and more specific insights about the BPR projects, to BPR project managers, BPR specialists, process engineers, process managers, quality managers, and employees for manufacturing MNEs in the context of South Africa. This information will also be beneficial to those MNEs that wish to undergo process redesign in South Africa, in order to remain ambidextrous in the market. Process redesign plays a vital role in determining the performance of an organization, in terms of innovation, which assists enterprises to keep up with the turbulent business environment.

The assessment of the enterprises in the manufacturing sector that have implemented an effective BPR project will assist in making relevant recommendations regarding BPR to be undertaken in the future.

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter begins with the definition of BPR and is followed by reviews of literature related to the impact of implementing BPR on various organizational performances, in terms of Cost, Process Turnaround Time and Quality, Employees' Skills, Knowledge, Behaviour, and Attitudes. The performance of organizations in terms of Various BPR Interventions, Critical Success/Failure Factors and Process Maturity Level was also included. The sub-headings are followed by their respective comprehensive statements or findings of the BPR projects, which lead to the propositions of the study.

2.1.1 *Definition of BPR*

Ozcelik (2010) defines BPR as a tool which involves continuous approaches of process transformation that may include both fundamental change and incremental improvements and which depends on the nature of the problem. Rajapakse and Van der Vyver (2012) further explain that BPR is a system that has radically departed from other famous business continuous improvement tools, like lean production, downsizing, and Total Quality Management (TQM). BPR is said to be concerned with the basic rethinking and redesigning of the business processes, in order to get a dramatic and sustainable improvement in terms of cost, quality, service, lead times, flexibility and innovation. Crowe, Fong and Zayas-Castro (2002), as quoted in Mlay et al.(2013), also define BPR as a total transformation of a business, an unlimited reshaping of all business processes, technologies and management systems, as well as organizational structure and values, to achieve significant advances in performance throughout the business. The researchers continue with their definition by stating that it constitutes a change of the overall entity structure, business management systems, personnel responsibilities and measurements of performance, developing skills, and using the information technology. It is from this definition that Business Process

Redesign (BPR) is the synonym of Business Process Re-engineering (BPR) because Ozcelik (2010), Rajapakse and Van der Vyver (2012) and Mlay et al.(2013) have all referred to it in this manner in their literature, cited above, and it will adopted in this manner throughout this study.

2.2 Impact of Implementing BPR on Organizations

2.2.1 *Cost*

The focus of this research is to evaluate the perceived impact of implementing BPR projects on MNEs in terms of cost, process turnaround time and quality, the employees' skills, knowledge, behaviour, and attitudes. If a business has reduced its running costs, it is believed to have put efficient methods or activities in place, in order to minimise wasteful expenditure. For instance, Ciaghi, Mattioli, and Villafiorita (2010), believe that BPR is an important way to minimise costs. Thus alterations in the regulation need to be flow-charted in process diagrams to ensure that the impact on the process is highlighted and reviewed. This notion was also shared by Bustamam, Shukor, Mohamed and Aziz (2013), who believe that re-engineering recognizes, examines, and redesigns an entity's central business processes with the plan to accomplish remarkable enhancement in critical performance measures, such as cost, quality, service, and speed. The researchers' findings point out that by putting in place suitable BPR methods, the business operation in government companies can drastically improve (Bustamam, Shukor, Mohamed & Aziz , 2013) and (Al-Bekhit, 2013); while Ciaghi, Mattioli and Villafiorita (2010) offered a tool-supported methodology to assist in making BPR and law comprehension activities easier. Ringim, Osman, Hasnan, and Razalli(2013) focused on the status quo of the BPR in the Nigerian banks and organizational objectives of the BPR implementation in banks. The surveyed banks show that their various operational processes have been re-engineered and the main objective of BPR implementation is improvement in earnings, customer service and either proactive or reactive steps, to address future or current challenges due to globalization, or to minimise operational cost.

In an effort to evaluate the impact of BPR implementation on various organizations in terms of cost, it was discovered that BPR is an important measure for minimising costs (Ciaghi et al.,2010) and that putting suitable BPR methods in place will enhance business operations(Bustamam et al.,2013) and Al-Bekhit (2013) and eventually reduce cost. Ringim et al.(2013) have shown that the most important objective of BPR implementation is improvement in earnings, and customer service plus either proactive or reactive measures to address future or current challenges resulting from globalization, or to minimise operational cost.

2.2.2 *Quality and Turnaround Time of the Process*

Cheng and Chang (2003) focused on coming up with an assessment method for comparative analysis of the performance of the prior and post process re-engineering. Queueing theory was utilised to assess performance of the time aspect through statistical analysis, which can clarify the differences of prior and post process time for objective analysis. Some years later, Heravizadeh, Mendling, and Rosemann(2009) introduced the Quality of Business Process (QoBP) model, which focussed on assisting modellers in recognising quality features of a specific process. The quality features are classified by the quality of functions, quality of input and output objects, quality of non-human resources, and quality of human resources. To date, the existing practice in re-engineering projects often regards the “as-is” process framework as a brainstorming tool. This methodology depends heavily on the feelings of the participants and fails to recognise a clear description of the quality features. Cheng and Chang (2003),applied the Queueing Model in earlier years, to assess the BPR time performance, and the Target Attainability Matrix to measure customer satisfaction, which will assist business managers in understanding the performance of the BPR, prior and post. Heravizadeh, Mendling, and Rosemann(2009) presented the findings that stemmed from applying the QoBP model in a case study (Australian bank). The QoBP model is used to assist modellers analysing the process, for example, when utilising the PRCA (process root cause analysis) approach. Satyanarayana and Kavitha(2011) set out to reflect their opinions of the State Bank of Hyderabad(SBH)’s customers on different issues of BPR and its influence

on customer satisfaction. The different issues assessed include the following: how customers perceive the objectives of BPR in banks, turnaround time for different transactions, prior and post BPR, awareness and usage of BPR services provided by banks, fullfillment of the banking services post BPR, BPR payback at SBH, challenges faced by customers post BPR in the bank, BPR's effect on customers,staff and performance of the bank.

The conclusion drawn by the SBH customers was that the level of customer service had definitely improved. The customers in the sample were of the view that the impact of BPR was more on customers than on the bank employees (Kebede & Eshetu, 2012). In previous years, Terziovski, Fitzpatrick, and O'Neill (2003) assessed strategic business departments of the Australian Financial Services Sector which had put BPR in place. The most significant predictor of BPR success in the study is the proactiveness of implementing BPR as part of the firm's business strategy, while simultaneously focusing BPR efforts on customer business processes. However, the findings show that there was no significant relationship between the increased use of IT and the reduced turnaround time of the re-engineered process. The paper also concludes that the key challenges of successful BPR implementation are changing culture and attitudes, ensuring greater communications and dealing with resistance to change from middle management.

In evaluating the impact of BPR implementation on an organization in terms of the quality and process turnaround time , it is clear from the researchers' findings (Terziovski et al.,2003) that there is no significant relationship between the increased use of IT and the reduced turnaround time of the re-engineered process (Heravizadeh et al., 2009; Satyanarayana and Kavitha, 2011) which could later have been managed through the QoBP Model, or the Queueing Model (Cheng &Chang, 2003).

2.2.3 *Employees' Skills, Knowledge, Behaviour, and Attitude*

Giannaris and D.Galliers (2003) and Majeed (2013), looked at how a project-based company creates knowledge and recognizes the up and coming subjects related to the organizational knowledge formation and preservation during a BPR project. In conclusion, the researchers recognised knowledge assets as a vital matter in the knowledge-generation processes with Majeed (2013)'s support of the proposition that BPR and the talent pool have a significant positive impact on the company's performance. Talent management mediates the relationship between business process re-engineering, talent pool development and organization performance. This study can be complemented by Khasraghi and Tarokh (2012)'s paper, which delineated how crowdsourcing will successfully improve BPR, by providing organizations with big groups of competent workers and a competent virtual team who could assess company operations and client satisfaction, examine market wishes and so on. In this instance, crowdsource is used to efficiently leverage a BPR project.

Crowdsourcing is defined as a way of taking an occupation normally performed by the chosen agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call. The researchers concluded that crowdsourcing can effectively bind or connect the machine's enormous raw power and the crowds' intellectual capacities. Organizations that use crowdsourcing for BPR could have a faster and less costly BPR project.

Ali (2009) examined employees' acceptance level in redesigning process among certain Malaysian service businesses. The views of the personnel regarding the processes and their everyday jobs, as affected by the redesigning process, were also considered. It was recommended by the author that a policy regarding redesigning of the organization, which looked at the employee's point of view, needed to be considered. However, Ziad (2010), Ahmad (2012) and Setegn et al. (2013)'s study revealedmajor findings which show that the impact of BPR implementation in the chosen companies was pessimistic in most core human resource scope (i.e. promotion, work life, reward, etc,); except, of course the career development and empowerment (Kebede and Eshetu, 2012).

This notion is not supported by Omolayo (2011), who assessed the personnel's perception with regard to job security due to re-engineering or technological changes in the Nigerian Banks and found that there is no significant effect by re-engineering on the perception of job-uncertainty among banks employees. The researcher's study did however show a significant relationship between age and job-uncertainty of employee and the effect of job status on job-insecurity. The result also revealed the significant effect of gender on perceptions of job-uncertainty amongst bankers.

The implication of these findings is that when workers have a good understanding of the BPR process, through proper education, it does not suggest job losses. This study has shown that some negative attitudes displayed by workers in an organization were largely due to lack of proper education by management. Puth and Walt (2012) also agrees with Ziad (2010) and Omolayo (2011) that employees will portray a positive behaviour towards BPR implementation if they realize or know the reasons for the necessary changes (and vice versa).Haghighat and Mohammadi (2013)'s paper focussed on factors that influenced BPR, accepted by employees and authorities in Isfahan municipality, by using the Technology Acceptance Model (TAM). The authors conclude that there is a significant link between perceived usefulness of BPR and collaboration in its performance. This means that the more employees perceive the advantages of process re-engineering, the more they will cooperate in implementing it. Hajer and Yusof (2013) looked at the level of readiness in Small Enterprises, for applying BPR tools, in managing usefulness, ease of use, business resources, quality management, employee's self-efficacy, self-confidence, and motivation. The authors concluded their research by developing a framework of BPR tools to assist entities implementing BPR, in order to build up employees' motivation, performance quality, self-confidence, and self-efficacy.

In evaluating the impact of implementing BPR through employees' skills, knowledge, behaviour and attitude, Giannaris and D.Galliers (2003) and Majeed (2013), recognised that knowledge-asset is an vital matter in knowledge generation processes during the BPR implementation. Ali (2009) recommended

that a regulation regarding redesigning of the organization's needs to be looked at from the employees' point of view; however Ziad (2010), Ahmad (2012) and Setegn et al. (2013) concluded that the impact of BPR implementation in the chosen companies was pessimistic in most core human resource scope (i.e. promotion, work life, reward, etc,) but not the career development and empowerment; with Kebede and Eshetu (2012) in agreement. Their findings indicated that BPR implementation improves employee empowerment. Omolayo (2011) also showed that there is no significant effect of re-engineering on the perception of job-uncertainty amongst banks employees. Puth and Walt (2012) also agree with Omolayo (2011) and Ziad (2010) that employees will portray a positive behaviour towards BPR implementation if they realize or know the reasons for the necessary changes, (or conversely, display a negative attitude) but Haghighat and Mohammadi (2013) found that the more employees perceive advantages of process reengineering, the more they will cooperate in implementing it.

The authors are in agreement that knowledge is generated and that it benefits the customers more than the employees, except for career development or empowerment during and after BPR implementation. However, there is no significant effect of re-engineering on perception of job-uncertainty amongst the banks' employees. One author recommended a policy for employees during BPR implementation.

2.2.4 *Various BPR interventions*

Even though BPR is widely adopted, BPR has in many instances failed to deliver its intended objectives. This paper evaluates the level of importance put on the vital fundamentals of an integrated BPR implementation. The general findings indicate that US companies are somehow ahead in the level of awareness and familiarity with different BPR tools and methods, due to past experience. As referenced by the results of Sockallingam and Doswell (1996)'s empirical study in Al-Mashari et al. (2001), US companies outweigh others in relation to levels of

commitment, awareness, and consideration regarding BPR (Al-Mashari, et al., 2001).

Debela (2009)'s study looked at what the issues are and the payback of putting in place the BPR in the civil service companies. Secondly, it posed the question, whether it is moral to make employees the subject matter of reengineering and lastly, what type of change could the Ethiopian organizations bring about post BPR implemention? It was concluded by the researchers that in considering the human resources and the technological ability of the organizations (Emerie, 2012), BPR can bring forward the incremental payback and progressive transformation instead of major change for a predictable future.

Sidikat and Ayanda (2008) and Aregbeyen (2011)'s study looked at assessing the impact of re-engineering of the day-to-day processes on the performance of the Nigerian Banks. The researchers agreed that BPR has become a useful weapon for any company that is striving for continuous improvement in performance. However, Aregbeyen (2011) later discovered that BPR projects substantially enhanced the profit performance but not for the expansion of its financial transition. On the other hand, Emerie (2012) developed and empirically tested a research replica which assessed whether the BPR implemented by state enterprises contributes to the company's wider performance. The findings indicate that public enterprises in a developing economy can utilise the BPR to improve their company performance if they have built-up a stock of BPR-relevant resources and capabilities, have executed the BPR with enough depth, are just beginning post-BPR complementary competencies, which are necessary to maintain and further increase the BPR changes, and have successfully alleviated the negative results of BPR implementation problems.

Habib and Shah (2013) had different view to Emerie(2012)'s, because their study was aimed at collecting and reviewing the work done thus far in the BPR field. This includes a comprensive summary BPR concepts, frameworks, approaches, outcomes, failures and successes causes. It was concluded by the researchers that there is no common approach to the BPR, nor can it be sure that BPR will ensure the organizational success.

In evaluating the performance of organizations that have implemented BPR, Al-Mashari et al. (2001) found that most of US companies are somehow ahead in the level of awareness and familiarity with different BPR tools and methods, due to past experience and as referenced by Sockallingam and Doswell (1996) in Mashari et al. (2001) ,it shows that these companies outweigh others in relation to levels of commitment, awareness, and consideration regarding BPR. Debela (2009) and Emerie (2012) can attest to this. With reagard to the human resources and the technological abilities of the organizations, BPR can increase the incremental payback and progressive transformation, instead of major change, for future to come, as foreseen. However, Habib and Shah (2013) had a different view to Emerie(2012)'s study, where they claimed that there is no common approach to the BPR nor can it definitely be said that BPR will ensure the organizational success.

It seems like the majority of researchers agree that BPR has become a useful weapon for any company that is striving for continuous improvement in terms of performance and that there is no common approach in BPR implementation

2.2.5 *CSFs and CFFs and IT Solution for the BPR Project*

Zairi and Al-Mashari(1999); Patel, Hlupic and Choudrie (2000); Ahadi (2004); Ringim, Razalli and Hasnan (2011); Goksoy, Ozsoy and Vayvay (2012); Darmani and Hanafizadeh (2013); Dubey and Bansal (2013); Paranjape and Guimaraes (2013); Mlay et al.(2013); and Dubey and Bansal (2013) all reviewed the BPR implementation process and established the critical success (CSFs) and critical failure factors(CFFs). Amongst the few success factors, they concluded that the role of the Information Technology (IT) infrastructure, reward system and incentives for employees are the success factors of the BPR implementation project, which encourage receptivity. However, Terziovski et al.(2003) 's findings contend that there was no significant relationship between the increased use of IT and the reduced turnaround time of the re-engineered process. The paper also concludes that the key challenges for successful BPR implementation are changing culture and attitudes, ensuring greater communications and dealing with

resistance to change from middle management. The outcome of the research also indicated that BPR factors are reliable and valid. The researchers concluded with several recommendations, which include the user's involvement in all aspects, to establish a good and open communication between the implementers and management, and to improve employees' ability to use IT tools.

Jamali, Abbaszadeh, Ebrahimi and Maleki (2011) recognise CSFs for implementing BPR in Iranian SMEs; establish the mutual dealings between CSFs; present a causal model of CSF for implementing BPR; classify the recognised CSFs into trigger and dependent set; contribute to the development of BRP theory by investigation of the causal between the recognised CSFs; and give insights to management planning implementing BRP. The authors did indeed establish that the causal model provides insights to assist management that is effectively involved in implementing BPR projects (Fan, Rajib and Alam, 2012). With contrasting findings, Jurisch, Ikas, Palka, Wolf and Krcmar (2012) pursued their study on the CSF of BPR from the private and public sector. The authors recognised the success factors and show that an astonishing resemblance exists between private and public BPR related success factors. Shin and Jemella (2002) and Chang, Levy and Powell (2005) presented a similar study to that of Zairi and Al-Mashari(1999) and Patel, Hlupic, and Choudrie (2000); however in a financial institution. The authors investigated the ways that BPR best fitted financial entities and tried to give guidelines to BPR projects in financial entities that would assist them in accomplishing remarkable performance growth. Their findings showed that even though there have been quite a number of BPR methodologies recognised by the researchers earlier, there have only been a small number of studies analyzing BPR methods best appropriate for specific organizational background or context. On the other hand, Mansar and Reijers (2007)'s research tried to establish the qualitative effect and actual utilisation of the already identified best ways in BPR projects. The list was constrained to 10 best ways (instead of 29 best practices). Their model indicates the following main areas a consultant needs to give more effort to when re-engineering a project: the client, the products and the flow of information, behaviour and the operation of a process and the technology that must support the process that redesigned the business. Mansar,

Reijers and Ounnar (2009) suggested an approach for implementing BPR by means of analytic hierarchy process (AHP). The researchers presented a classification of the most appropriate instructions for a specific process to be re-engineered. In conclusion, the researchers presented a decision-making approach based on AHP to support BPR practitioners in selecting the most suitable best practices to improve processes. Magutu, Nyamwange and Kaptoge (2010)'s findings ascertained that the Wrigley company obtained a competitive advantage by installing BPR. Additionally, it was determined that this organization also assumed the BPR best practises that are vital for successful implementation; which confirms Mansar and Reijers (2007)'s claims.

Most researchers highlighted more or less similar CSFs (i.e. IT solution, reward system and incentives for employees or human factors etc.) and/or CFFs (i.e. not dealing with change, culture and attitudes, etc.).They are in agreement that CSFs or CFFs are dependent on the background or context of a specific organization, however there is no significant relationship between the increased use of IT and the reduced turnaround time of re-engineered process. A causal model was established for the CSFs and the most appropriate instruction for a process to be re-engineered was established for BPR implementers.

Cheng and Wang (2006)'s research was to evaluate the condition of implementing ERP and BPR. The outcome of the study was that the majority of the Taiwan manufacturing organizations directly implemented ERP (Employee Resource Planning) and had not re-engineered their business processes. This showed that they did not follow the idea of implementing BPR first before putting ERP in place. It was confirmed by the optimistic association between the ERP benefits and BPR project implementation and proved that some BPR activities do assist in effective ERP implementation. Scott, Golden and Hughes (2006) and Najjar, Huq, Aghazadeh and Hafeznezami (2012)'s research agrees with this notion. With regard to top management *as* being the most important contributor to the success of BPR implementation, as cited by Zairi and Sinclair(1995); Furey(1993); Arendt, Landis and Meister(1995) in Cheng and Wang(2006), it was found that senior management do not really assist BPR implementation when it comes to ERP

system implementation. On the other hand, Krishnankutty, Tounsi and Subramoniam (2009) and Tsai, Chen, Hwang and Hsu (2010)'s study looked at issues or problems that emerge during the implementation of the ERP, while re-egineering their business processes as enabler. The researchers concluded that implementing BPR and ERP simultaneoulsy is the most effective way in redesigning the business processes. This is, of course, achieved by putting into perspective the company's needs and challeges (Shin & Jemella, 2002).

Ringim, Razalli and Hasnan (2012)'s paper looked into the moderating effect of IT capability with regard to BPR features and the performance of an organization. The findings indicated that IT capability moderated the relationship between BPR features(i.e.change management, customer focus, management commitment) and the overall performance of an organization. These results give vital insight to researchers about understanding the effects of BPR features and IT capability on the performance of organizations. On the other hand, Maroofi, Kahrarian, and Dehghani(2013) aimed at trying to find out motivations to adopt IT and, as cited by Morris and Brandon(1993) in Maroofi, Kahrarian and Dehghani(2013). Numerous companies show that IT infrastructure allows BPR to improve performance in terms of saving costs, quality breakthrough, improved customer services, improved turnaround time, and income increases. However, empirical data for the connection between IT influence and BPR is not common and how these technologies impact business improvement remains unclear.

Paranjape and Guimaraes (2013)'s study also looked at testing the mutual dealings between BPR project success factors and the actual practices of the manufacturing enterprises. The results show that some success factors are less important or more important to BPR project phases, except for the relationship between project beginning phase and process redesign phase, which is not significant. Groznik and Maslaric (2010)'s study confirmed the success factors of the BPR project implementation by showing how the BPR of the SCM needs to follow the strategy of introducing the IT solution, in order to effectively keep information-sharing in an enterprise active and to keep an organization competitive in the market. For an example, Rajapakse and van der Vyver (2012)'s

study focused on reviewing two case studies which have had BPR initiatives playing an important part in the implementation of e-Government solutions and found that BPR initiatives affected the implementation of the e-Government solutions (e-Filing and e-Pension). For the Sri Lankan case this was not significant, as it did not consider the CSFs.

Mukherjee and Chatterjee (2013)'s study quantitatively assessed the factors which telecommunication service providers can produce; strategies to please customers in order to outstrip their competitors. This will be done so by seeing how BPR can be impact customer satisfaction within the telecommunication sector. From this study, it emerged that BPR has a significant impact on the customer satisfaction level and the following recommendation was made: the Telecommunication service providers should focus more on improving the magnitude of customization, working environment , turnaround time, and technology enhancement.

Smith, Meade, Wolf and Song (2013) also confirmed that the implementation of successful BPR can do the following:

a) generate increased customer satisfaction ,

b) enhance productivity,

c) construct higher elasticity in business processes.

The researchers' paper developed a model, which can tackle the role of diverse factors in implementing a successful BPR, which results in a competitive advantage for the organization.

Ozcelik (2010); Altinkemer, Ozcelik and Ozdemir (2010) ; Huatuco, Burgess and Shaw (2009); Rodesovi, Pasula, Berber, Nebojsa and Nerandzic (2013) continued to look deeper into the implementation of the BPR within a specific function (i.e. SCM or Engineering) and found that BPR projects that are functionally focused are on average more positively associated with performance than those with cross-functionally (i.e. SCM and Engineering) focused scope BPR projects.

Bellgran and Yamamoto (2013) saw the need for focusing on a specific type of manufacturing processes, using the MPI model, which will assist MPI implementers in knowing what to expect and prepare when conducting different kinds of MPI. Limited knowledge has been gathered on types of MPI in relation to radical innovation and further work can be conducted on the type of MPI in this regard.

In evaluating the impact of implementing BPR on organizations, researchers agree that BPR activities assist in the implementation of ERP system and vice versa, while other authors believe that ERP and BPR intiatives must be implemented simultaneously, in order to reap the fruit. The researchers also showed that introducing an IT solution (i.e. e-filing), in one single-functionally focused scope, improves the performance of an organization. However empirical data for the connection between IT influence and BPR is not common and how these technologies impact business improvement remains unclear. A model for diverse CSFs were established in order to result in an organization in a competitive advantage mode.

2.2.6 *Maturity Level of the Re-engineered Processes*

Netjes, Mansar, Reijers and Aalst (2009)'s paper suggested and specified progressive methods towards redesigning business processes. The authors explained the steps to come up with better performing redesign, using the existing process model as input. In conclusion, the outcome of the study is a new process model (by applying a case study) and there is a proper basis to make it appropriate for automation. On the other hand, Silva, Santos, Teixeira and Tadeu (2013)'s study looked at evaluating the maturity level of the processes for MNEs completing 100 years, in the welding sector of the State of Minas Gerais, Brazil. The researchers concluded that the centennial and globalised companies are the market leaders, due to technological expertise of the business, where their key focuses are on the production processes. They further elaborate that the maturity level of processes for recognised and globalised leader organizations is very small. It was expected, however, to find that enterprises of such nature be

managed perfectly well in relation to their organizational processes, with greater performance proportional to their technological performance.

A new process model, applying a case study in order to measure the maturity level of the reengineered processes, was developed and it was expected that the maturity level of processes which globalised enterprises were managed perfectly well, in relation to their organizational processes; with greater performance proportional to their technological performance.

2.2.7 *Conclusion of Literature Review*

The study has provided an in depth definition of BPR and has concluded that its definition is still consistent to date. Various researchers defined BPR as a change in process, system, organizational structure, and employees' responsibilities in order to improve or enhance the performance of an organization. In conclusion, evaluating the impact of implementing BPR on various organizations, in terms of cost, the researchers are in agreement that putting BPR into an organization reduces cost and improves performance.

In evaluating the impact of BPR implementation of an organization in terms of the quality and process turnaround time , it is clear from the researchers' findings that there is no significant relationship between the increased use of IT and the reduced turnaround time of the re-engineered process, which could subsequently have been managed through the QoBP Model or the Queueing Model.

The authors are in agreement that knowledge is generated and that it benefits the customers more than the employees, except for career development or empowerment, during and after BPR implementation. However, there is no significant effect of re-engineering on perception of job-uncertainty among bank employees; One author recommended a policy for employees during BPR implementation.

It seems that the majority of researchers agree that BPR has become a useful weapon for any company that is striving for continuous improvement in terms of performance and that there is no common approach in BPR implementation

Most researchers highlighted more or less similar CSFs (i.e. IT solution, reward system and incentives for employees or human factors, etc.) and or CFFs (i.e. not dealing with change, culture and attitudes, etc.) and they are in agreement that CSFs or CFFs are dependent on the background or context of a specific organization. However, there is no significant relationship between the increased use of IT and the reduced turnaround time of the re-engineered process. A causal model was established for the CSFs and the most appropriate instruction for a process to be re-engineered was established for BPR implementers

In evaluating the impact of implementing BPR on organizations, researchers agree that BPR activities assist in the implementation of ERP system (and vice versa) while other authors believe that ERP and BPR intiatives must be implemented simultaneously in order to reap the fruit. The researchers also showed that introducing an IT solution (i.e. e-filing) in one single-functionally focused scope improves the performance of an organization. However, empirical data for the connection between IT influence and BPR is not common and how these technologies impact business improvement remains unclear. A model for diverse CSFs was established in order to produce an organization in a competitive advantage mode.

A new process model, applying a case study in order to measure the maturity level of the reengineered processes was developed, and it was expected that globalised enterprises are managed perfectly well in relation to their organizational processes, with greater performance proportional to their technological performance.

The sub-problem is evaluating the perceived impact on MNEs performance (turnaround time, cost, quality, employees' skills, knowledge, behaviour, and attitude) since BPR project implementation by obtaining survey responses from employees. The perceived impact data will be validated by evaluating the financial

data (ROE, Labour Productivity and ROA) of the MNEs since BPR project implementation (from the year 2008 to 2012).

The above literature is consistent in its finding regarding the first proposition. It is expected that an enterprise improves on performance when the BPR project is on average on a single-functionally focused scope rather than cross-functional focused scope; the implementation of the BPR project is over; the BPR project was implemented with the IT solution introduction because employees are now informed and comfortable with new ways of doing things. However, when BPR project implementation is over, the employees' incentives and reward system do not improve. It is therefore appropriate to investigate it further in the following propositions:

P1a) MNE performance is perceived to have a positive association with single-functionally focused BPR implementation project (i.e. re-engineering of IT or SCM or finance function only).

P1b) MNE performance is perceived to have improved since the BPR implementation project.

P1c) Employees' reward and incentive system is perceived not to have improved since BPR implementation project.

3 CHAPTER 3: RESEARCH METHODOLOGY

This section provides an overview of the research methodology which begins with the description and delineation of research methodology, design, population and sample, with the sampling methodology, research instruments and data collection procedure, data analysis and interpretation of the results, limitations. It ends with validity and reliability.

3.1 Research methodology

Mixed method approach is used for this study because quantitative research seeks confirmation and validations that generalise results; while qualitative seeks a better understanding of challenging situations, such as employees' perception on BPR implementation in the present research. Combining both quantitative and qualitative methods will assist in providing a complete picture of what is being studied (Leedy & Ormrod, 2010). Mlay et al.(2013) also used the quantitative method for identifying the organization, and collecting data from the respondents and used the qualitative method for selecting employees within the organizations and descriptive analysis.

3.2 Research Design

The research design makes use of the cross-sectional system for the manufacturing MNEs operating in South Africa. This involves evaluating the perceived impact data (primary data) of since BPR project implementation. The perceived impact data from the respondents is validated by calculating the financial performance (secondary data). This financial performance data is longitudinal or time series-based, calculated from the MNE's respective annual report between the years 2008 and 2012 in the form of Labour Productivity, ROA, and ROE. Paranjape and Guimaraes (2013) also suggested, for future research, that the longitudinal data clearly ascertain cause and effect relationship between the main study variables.

The advantage of the cross-sectional research design for the primary data aspect of the research is that the completed questionnaires were easily obtainable and data was able to be collected at a single point in time (Leedy & Ormrod, 2010). The disadvantage of this method was that MNEs' annual financial data (ROE, Labour Productivity and ROA) for South Africa was always consolidated with other countries' annual financial data. It was challenging to calculate ROE, Labour Productivity, and ROA per South African MNE, in order to evaluate the performance of the MNEs operating in South Africa.

3.3 Population and sample

3.3.1 *Population*

These are the 10 MNEs which are operating in South Africa within the manufacturing sector. Refer to **table 1** and **section 3.4** of this document for the evaluated companies.

Description of respondent type	Number sampled
Completed questionnaire from the employees of the of the MNEs in the Transportation Equipment (***BMW South Africa, Ford South Africa, Mercedes-Benz South Africa, Nissan South Africa, Volvo South Africa, Toyota South Africa, Volkswagen South Africa, Audi South Africa, Nissan South Africa and Evico South Africa***) industry	150 completed questionnaire

Table 1: The evaluated MNEs

3.4 Profile of Respondents MNEs

BMW Group

BMW Group is one of the largest and finest MNE automobile manufacturers that operate in the world, including South Africa, and it makes the finest brands: BMW,

MINI and Rolls-Royce. This group contributes greatly to the foreign direct investment in South Africa in terms of innovation and manufacturing and it also offers financial services to all its customers. The group's strategic direction is to optimise profitability and longevity value growth; hence it has been the most sustained organization in the automotive sector for quite some time (Norbert Reithofer, 2013).

Volkswagen and Audi

Volkswagen Group South Africa was established in 1946 and its manufacturing plant is situated in Uitenhage about 35 km from Port Elizabeth. This group makes Audi and Volkswagen. It has suppliers and franchised dealers around the country and it is one of those MNEs that contributes greatly to the foreign direct investment in South Africa, in terms of promoting technology, skills and knowledge. This has been seen via the employees who have received training at different levels at the Volkswagen plants around the world (Volkswagen Customer Interaction Centre, 2014).

Audi South Africa has 44 franchised dealer networks around the country and has a manufacturing plant in Centurion. This MNE has been operating in South Africa for some years and it forms part of the Volkswagen group (AUDI AG, 2014).

Volvo Car Group

Volvo Car Group is one of those MNEs that manufacture cars, trucks, buses and earth moving equipment and is located around the globe. The group's objective is to sell 800 000 cars by 2020 (Olof Persson, 2012).

Evico

Evico South Africa is one of those MNEs that provide the South Africans with bus transportation systems nationwide. Evico South Africa is in the process of establishing its manufacturing plant in Rosslyn, west of Pretoria (Bruyn, 2014)

Ford and Mazda

Ford Motor Company of Southern Africa (FMCSA) has been among the leading MNEs in the automotive industries. FMCSA comprises the Ford Motor Company and Mazda Company. This MNE has recently allocated R3.4 b to transform its Silverton and Port Elizabeth plants into world class production facilities. The MNE currently employs about 3 700 people in South Africa and distributes its products nationally (Ford, 2014).

Toyota

Toyota has been established in South Africa since 1961 and has become part of the South African culture. The manufacturing plant is situated in Durban and this MNE is committed to manufacture, provide and export a wide range of automobile products around the globe (Toyota, 2014).

Nissan

Nissan South Africa has been operating in the country and manufacturing its products in the Rosslyn plant of Pretoria for years. The plant is said to have the best technology in the world in terms of sound and environmental practice in its manufacturing processes. This MNE has continued to enjoy its 8 percent market share of the total South African vehicle market. Currently, Nissan employs over 1 900 people (Nissan, 2014).

Mercedes

Mercedes-Benz South Africa (MBSA) has been established in South Africa for 60 years and its manufacturing plant is situated in East London. It offers offering a wide range of products (Mercedes-Benz commercial vehicles and buses, FUSO trucks, and Freightliner trucks), nationally and internationally (Mercedes South Africa, 2014).

3.4.1 *Sample and sampling method*

The sample of the study is 15 employees who responded from each MNE in the Transportation Equipment industry. These employees represent process owners, such as Engineers or SCM Managers/Specialists.

The non-probability purposive sampling method is used. The method is used to select competent respondents (i.e. Quality Manager, Process Manager, Procurement Manager, Factory Manager, Production Manager, Logistics Manager, Assembly Manager, etc) from each MNE. The questionnaires were sent out through an email platform to a minimum of 15 process owners per MNE.

Hajer and Yusof (2013)'s study also took the same route for selecting the employees and process owners in SMEs.

3.5 The research instrument

The instrument used was the questionnaire and financial measures obtained from Mlay et al.(2013) and Ozcelik (2010)'s studies respectively. Sekaran (2009), as cited in Hajer and Yusof (2013), describes questionnaire as a pre-constructed written group of questions, of which the participants must record their responses, usually with defined options.i.e.for the primary data only Refer to **Table 31** and

Table 2 of the questionnaire (Appendix A) and Financial Measure (below) respectively.

Cronbach's Alpha is used as the first measure to examine the reliability of the questionnaire instrument with a single underlying dimension .This measure is done due to the primary data that will be assessed. According to Field (2009), an acceptable value of measuring the reliability of an instrument is at least 7 and any values lower than that indicate an unreliable scale.

Source: Construction of Performance (Ozcelik, 2010)

Performance Measure of the MNEs	Denominator	Numerator	Description
Labour Productivity	Sales	Number of Employees	This measures the efficiency of the production by the employees
ROE	Income	Equity	This is an indication of how an enterprise is using its common shareholder's equity
ROA	Income	Asset	Demonstrate the productivity of an enterprise in terms of its use of assets to generate profits.

Table 2: Financial Measure

3.6 Procedure for data collection

An email, attached with the participants' questionnaire, was sent out to the automotive industries. The completed questionnaire was collected by means of an email and in some instances I personally collected the completed hardcopy questionnaires from the respondents' working facilities. The latter method is used in an attempt to raise the return rate of the completed questionnaire.

Annual financial reports from 2008 to 2012 were collected from the MNE's related website or internet and ROE, ROA and Labour productivity were calculated from the financial annual report.

3.7 Data analysis and interpretation

The data entered by the researcher in the Microsoft Excel sheet was exported to IBM SPSS21 software and was analysed by using descriptive statistics where charts and tables indicated frequency distributions of variables. The means of each distribution was compared in relation to the scale. For example, some items of the variables are coded as follows: 1=less than a year, 2=1 to 5 years, 3=6 to 10 years, 4=more than 10 years; 1=yes and 0=no; 1=strongly Agree, 2=Agree, 3=Not Sure, 4=Disagree, 5=Strongly Disagree; to assess whether responses are in the direction posited by the propositions of the research.

The financial data from the annual report consists of the calculation and analysis of the following: the ROA, which demonstrates how productive the MNE is in terms of using its assets to generate profits, Labour Productivity, which indicates how efficiently the employees are in the MNE, and ROE, which demonstrate how efficiently MNE is in terms of using its common shareholders' equity. The financial data was used to validate the perceptual data from the respondents. These variables (ROA, ROE, and Labour Productivity) produce an accumulative distribution data type, either below or above the value of interest. For example, ROA is the dependent variable with Total Assets and Net Profit as the independent variables.

3.8 Limitations of the study

- The study firstly has the limitation of focusing only on MNEs that have re-engineered their business processes through the BPR project implementation. It is however noted that the MNEs did not re-engineer their systems at the same times.
- Secondly, it focused on MNEs that: are operating in South Africa. However, this homogeneity limits the external validity of the research.
- Thirdly, it focused on the employees' perceptual data regarding BPR project implementation.

- Fourthly, the study has a limitation of validating the primary data using the secondary data (i.e. data from the annual financial report), and
- Lastly, it made use of purposive non-probability sampling because of its heterogeneous mix of the enterprises.

3.9 Validity of the research

3.9.1 *Internal Validity*

Leedy and Ormrod (2010) define validity in this instance as the credibility and accuracy of the research being conducted. The research used the triangulation internal validity strategy because data was collected from two sources (primary and secondary data sources) in order to meet at a central point to support all propositions mentioned herein. The secondary data is used to validate the primary data.

The study firstly had the limitation of focusing on MNEs that have redesigned their business processes and secondly focused on MNEs that are operating in South Africa. These latter two points are in fact ways of controlling the nuisance variables of the research, and thus enhancing the internal validity of the study.

The research sought opinions of 15 employees per MNE in the motor manufacturing industry in order to establish whether the conclusions made by the researcher regarding the performance of BPR is appropriate (Leedy & Ormrod, 2010). In addition to that, financial data was used to validate the perceptual data from the respondents.

3.9.2 *External Validity*

This research is being replicated in South Africa as the previous research was undertaken in Uganda as a case study on the regional state institution (Mlay et al.,2013).

3.10 Reliability

Bull, Maslin, and Armst (2009) define the reliability of the study as a research that produces consistent responses.

The reliability of the study is being optimised by ensuring that all the respondents per MNE have an in-depth knowledge regarding BPR, due to the nature of the role repondents (i.e. Process Managers,Quality Managers, or Process Owners,etc) play in the company. All employees are asked the same related questions in order to ensure the reliability of the study. The perceived impact data (completed questionnaire) from the respondents is validated by evaluating the financial performance taken out of the annual financial reports (2008 to 2012.) from each participating MNE. For each participating MNE, 50 (5 years X 10 annual reports) consolidated annual reports were obtained on the internet.

4 CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results obtained from the research undertaken and will start with the reliability of the questionnaire. It is followed by a discussion of some key observations of the data in relation to the propositions. Data tables and figures are presented for descriptive analysis purposes.

Variable	Subscale Description	Cronbach's Alpha	Number of Items
1	*Status of the BPR project Implementation I*	.65	2
2	Status of the BPR project Implementation II	-.167	3
3	Employee fruitfulness after BPR project implementation	.680	8
4	Respondents expectation on major improvements after BPR	.47	4
5	Measurement put into place do evaluate performance in terms of turnaround time	.445	3
6	Measurement put into practice did evaluate your performance in terms of cost	.722	3
7	Measurement put into practice did evaluate your performance in terms of quality	.844	3

Table 3: Cronbach's Alpha coefficient of the questionnaire scale

Reading from table 3 above, the reliability of the scale was processed through 7 subscales, each consisting of a different number of items. Subscale 1 and 2 measure the status of the BPR project Implementation; subscale 3 measures the employees' fruitfulness after BPR implementation; subscale 4 measures the respondents' expectation on major improvements after BPR; subscale 5 measures the performance of MNE in terms of turnaround time; subscale 6 evaluates the performance of the MNE in terms of cost and lastly subscale 7 evaluates the performance of the MNE in terms of quality.

A Cronbach's alpha ≥ .70 is considered a strong measure of internal consistency, Field (2009). According to subscale 6 and 7, the scale is above the calculated Cronbach's Alpha coefficient of .7, indicating a sufficiently strong level of internal consistency. As for the subscale 1 to 5, the scale is below the considered Cronbach's alpha of ≥ .70. The table 4 below shows the values of Cronbach's Alpha if items from the variables are deleted.

Items		Cronbach's Alpha if Item Deleted
1	***Status of the BPR project Implementation I***	.65
a)How long have you been in your organization?		
b)When was BPR implemented in your Organization?		
2	**Status of the BPR project Implementation II**	-.167
c)Did your organization implement any IT solutions i.e. SAP, SYSPRO?		-1.592
d)Did your organization redesign or re-engineer all the business?		.390
e)Did your organization only redesign processes for certain business?		-2.018

Items		Cronbach's Alpha if Item Deleted
3	**Employee fruitfulness after BPR project implementation**	.680
f)Did you benefit with salary increment?		.646
g)Did you benefit in promotion?		.750
h)Did you have involvement in the process re-engineer or redesign?		.634
i)Did you have empowerment?		.590
j)Did you have work satisfaction?		.584
k)Did you have benefit of simple workload?		.698
l)Did you have utilization of information technology?		.592
m)Did you have compensation?		.668
4	**Respondents expectation on major improvements after BPR**	.47
n)You did observe improvement on employees behaviour and attitude		.258
o)You did observe change in skill and knowledge of employees		.384

Items		Cronbach's Alpha if Item Deleted
p)You did observe improvement on team coordination and management		.449
q)You did observe radical change		.484
5	**Measurement put into place do evaluate performance in terms of turnaround time**	.445
r)The redesigned processes are working better than the previous one		.309
s)The redesigned processes are working slower than the previous one		.379
t)The redesigned processes are working the same as the previous one		.367
6	**Measurement put into practice did evaluate your performance in terms of cost**	.722
u) You did receive gain sharing (incentives or rewards) from your organization		.702
v)Your organization's profit has increased		.419
w)There are less non-conformance costs derived from the redesign		.765
7	**Measurement put into practice: did evaluate your performance in terms of quality?**	.844

Items	Cronbach's Alpha if Item Deleted
x)There is less reworking of products	.731
y)The product return rate from the customer has reduced	.617
z)Your customer is happy with your services or products	.972

Table 4: Cronbach's Alpha if Item Deleted

Subscale 1 was divided into two parts which used the Likert scale of 1 to 4 (1= Less than a year, 2=1 to 5 years, 3=6 to 10 years and 4= More than 10 years) and 1 or 0 scale (1=Yes and 0=No) respectively. Subscale 2 used 1 or 0(1=Yes and 0=No) within the items. Subscale 3 to 7 used the Likert scale of 1 to 5 (1= Strongly Agree, 2=Agree, 3=Not Sure, 4=Strongly Disagree and 5= Disagree).

MNEs	Audi	BMW	Ford	Iveco	Mazda	Mercedeces	Nissan	Toyota	Volvo	VW	Total Average	
STATUS OF THE BPR PROJECT IMPLEMENTATION I	*1= Less than a year, 2=1 to 5 years, 3=6 to 10 years and 4= More than 10 years*											
a)How long have you been in your organization?	1.8	2.5	2.13	2.27	2.13	2.4	2.93	3	3	3		
b)When was BPR implemented in your Organization?	1.67	2	1.53	1.4	1.53	2.27	2.53	2.8	3.2	2.47		
STATUS OF THE BPR PROJECT IMPLEMENTATION I	*1=Yes and 0=No*											
c)Did your organization implement any IT solutions (i.e. SAP,SYSPRO,IMPACT, Projectwise, Primavera, etc.)	0.87	0.67	0.67	1	0.67	0.4	0.67	1	1	0.6		
d) Did your organization redesign or re-engineer all the business processes?	0.67	0.67	0.67	0.07	0.67	1	0.8	0.53	0	0.53		
e) Did your organization only redesign processes for certain business units/ function (Production only / Procurement only, etc)?	0.87	0.5	0.8	1	0.73	0.6	0.93	1	1	0.47		
EMPLOYEE FRUITFULNESS AFTER BPR IMPLEMENTATION	*1=Yes and 0=No*											
f) Did you benefit with salary increment?	0.53	0	0.27	0.6	0.33	0	0.4	0.2	1	0		
g) Did you benefit in promotion?	0.13	0.47	0.13	0	0.13	0	0.6	0.53	0	0.53		
h) Did you have involvement in the process re-engineer or redesign?	0.93	0.87	0.53	0.6	0.53	0.53	0.6	0.6	1	0.87		

i) Did you have empowerment?	1	0.8	0.67	0.6	0.67	0.6	0.87	0.6	1	1		
j) Did you have work satisfaction?	1	0.8	0.87	0.6	0.87	1	1	0.6	1	1		
k) Did you have benefit of simple work load?	0.87	0.33	0.67	0	0.67	0.93	0.6	1.3	0	0.47		
l) Did you have utilization of information technology?	0.87	0.53	0.87	0.6	0.87	1	1	0.6	1	0.47		
m) Did you have compensation?	0.87	0.33	0.67	0.6	0.67	0.6	0.73	0.6	1	0.47		
RESPONDENTS EXPECTATION ON MAJOR IMPROVEMENTS AFTER BPR	*1= Strongly Agree, 2=Agree, 3=Not Sure, 4=Strongly Disagree and 5= Disagree*											
n) You did observe improvement on employees' behavior and attitude.	2	2.2	1.73	2	1.73	1.8	1.6	2.67	2	2		
o) You did observe change in skill and knowledge of employees.	2.67	2.67	1.87	2	1.87	2	2	2	2	2.53		
p) You did observe improvement on team coordination and management systems.	1.67	1.87	1.93	2.8	1.93	1.53	2.13	2.4	2	1.53		
q) You did observe radical change.	2.27	3.13	2.73	2.6	2.73	2.87	2.6	2.6	3	3.07		
MEASUREMENT PUT INTO PLACE TO EVALUATE PERFORMANCE IN TERMS OF TURNAROUND TIME	*1= Strongly Agree, 2=Agree, 3=Not Sure, 4=Strongly Disagree and 5= Disagree*											
r) The redesigned processes are working better than the previous ones	1.8	2.33	1.67	2.4	1.67	1.67	2.2	1.87	2	2.07		
s) The redesigned processes are working slower than the previous ones	2.8	3.33	1.87	3	1.87	1.4	2.2	2.07	3	3.47		
t) The redesigned processes are working the same as the previous ones	3.5	3	3	3.6	3	2.6	3.07	4	4	3		

MEASUREMENT OUT INTO PRACTICE DID EVALUATE YOUR PERFORMANCE IN TERMS OF COST	*1= Strongly Agree, 2=Agree, 3=Not Sure, 4=Strongly Disagree and 5= Disagree*											
u) You did receive gain sharing (incentives or rewards) from your organization	2.5	4.27	3.13	3.4	3.13	3	3	3.71	3	4.53		
v) Your organization's profit has increased	2.27	3.13	2.33	2.4	2.33	2.47	2.6	3.2	2	3.07		
w) There are less nonconformance costs derived from the redesigned processes	2.1	2.67	1.47	2.4	1.5	1.13	1.8	2.4	2	2.53		
MEASUREMENT PUT INTO PRACTICE DID EVALUATE YOUR IN TERMS OF QUALITY	*1= Strongly Agree, 2=Agree, 3=Not Sure, 4=Strongly Disagree and 5= Disagree*											
x) There is less reworking of products	2.67	2.67	2	2.4	2	2.07	2	2.27	2	2.53		
y) The product return rate from the customer has reduced	2.67	2.67	2	2.4	2	2.07	2.2	2.67	2	2.53		
z) Your customer is happy with your services or products	1.67	1.87	1.4	1.8	1.4	1	1.93	2.6	1	1.53		

Table 5: Results Per MNE

The following results read from table 5:

The average respondents from Audi have been in an organization for less than a year. The average respondents from BMW, Nissan, Iveco, Mazda, Ford and Mercedeces have been in an organization between 1 to 5 years and the average respondents from Toyota, Volvo and VW have been in the company between 6 to 10 years.

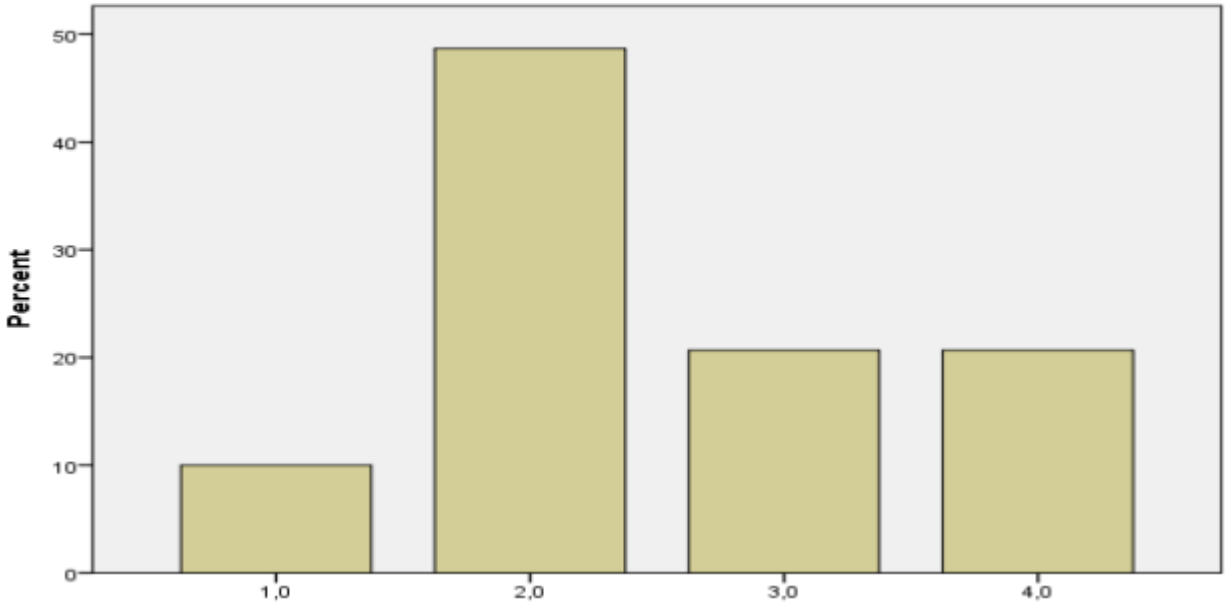


Figure 1: How long have you been in an organization?

Looking at all MNEs, it is clear from figure 1 above that 49% of the respondents have been in the company for 1 to 5 years and 40% is equally shared by respondents who have been in the company for more than 6 to 10 years and more than 10 years respectively. The remaining 11% of respondents have been in an organization for less than a year.

The average respondents from BMW, Mercedeces, Mazda, Nissan, and Toyota shows that BPR was implemented between 1 to 5 years ago while Audi, Iveco, Ford, and VW shows that BPR was implemented less than a year ago. The average respondents from Volvo show that BPR was implemented between 6 to 10 years ago.

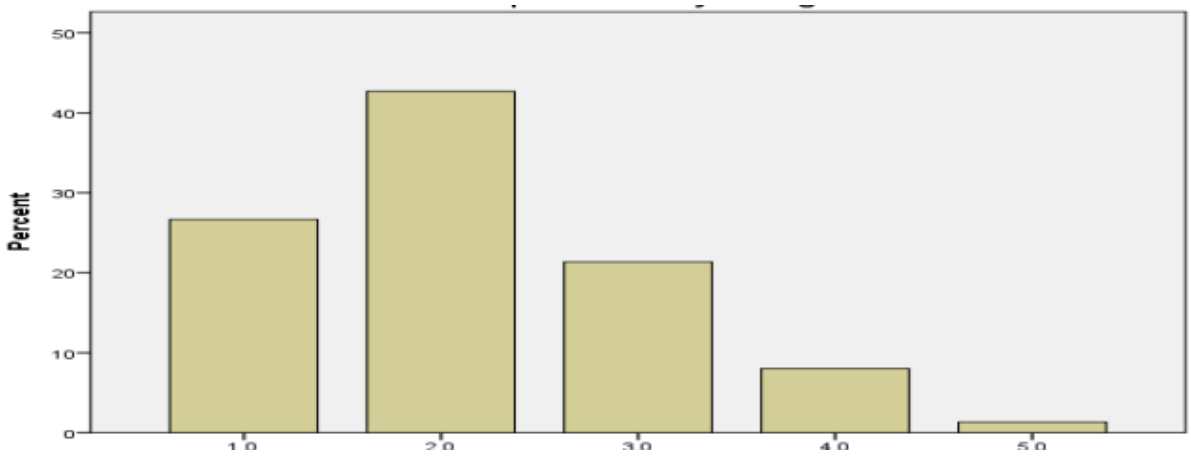


Figure 2: When was BPR implemented in your Organization?

Looking at all MNEs, it is clear from figure 2 above that 43% of the respondents implemented their BPR between 1 to 5 years, 28% implemented BPR less than a year ago, 22% implemented BPR 6 to 10 years ago, 8% of the respondents implemented their BPR more than 10 years ago and the remaining respondents of 2% are not sure of when BPR was implemented.

The average respondents from Audi, BMW, Mercedeces, Ford, Mazda, Nissan and VW shows that IT solution was not implement as part of the re-engineering process and the remaining average respondents that their organization implemented IT solutions as part of the re-engineering process.

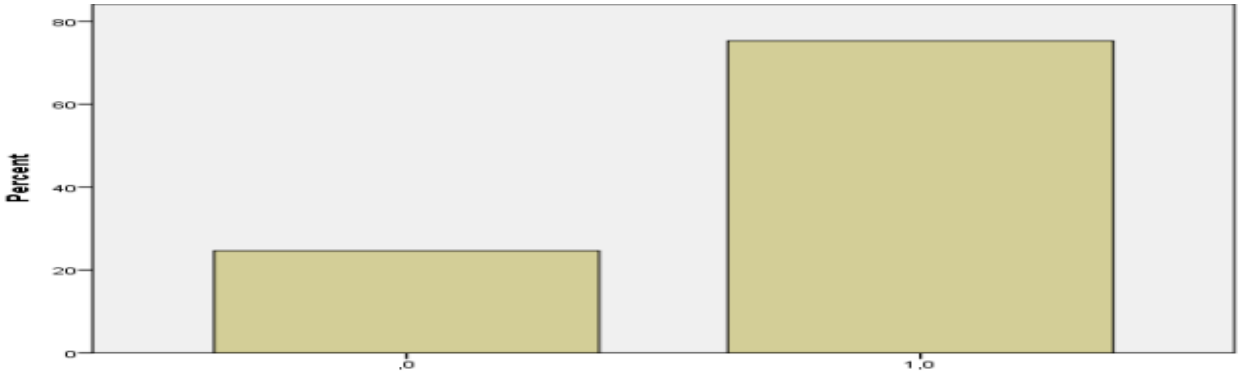


Figure 3: Did your organization implement any IT solutions i.e. SAP or SYSPRO?

Looking at all MNEs, it is clear from figure 3 above that 26% of the respondents did not implement IT solutions as part of their re-engineering process and 74% of the respondents implemented IT solutions as part of their re-engineering process.

The average respondents from Mercedeces show that the MNE did re-engineer all the business processes while Audi, BMW, Ford, Mazda, Nissan, VW, Toyota, Iveco and Volvo show that all the business processes were not engineered at once.

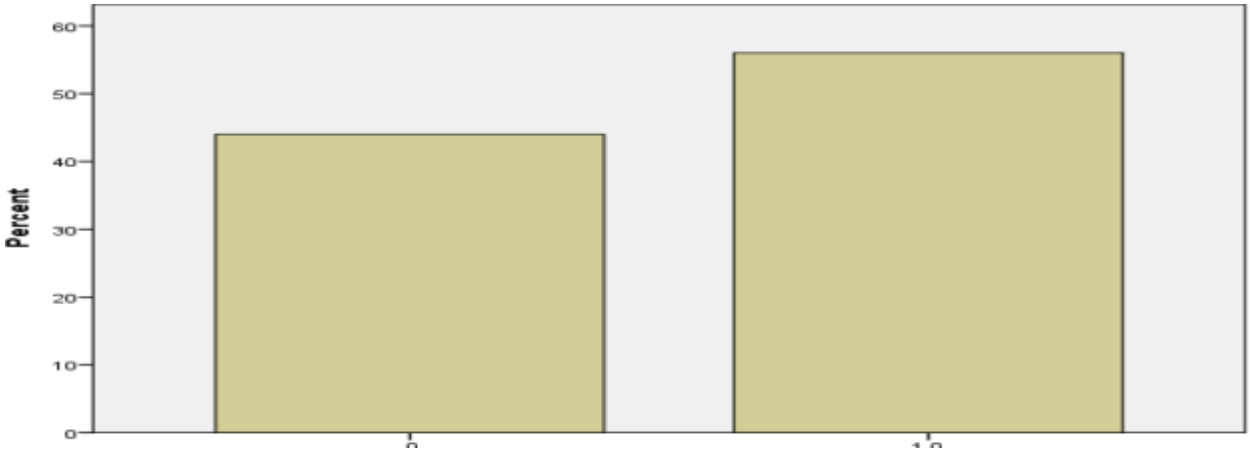


Figure 4: Did your organization redesign or re-engineer all the business processes?

Looking at all MNEs, it is clear from figure 4 above that 45% of the respondents did not re-engineer all their business processes at once and 55% of the respondents did re-engineer all their business processes.

The average respondents from Mercedeces, Audi, BMW, Ford, Mazda, Nissan and VW shows that the MNEs did not only re-engineer processes for certain business functions

while Toyota, Iveco and Volvo shows that only certain business processes were re-engineered.

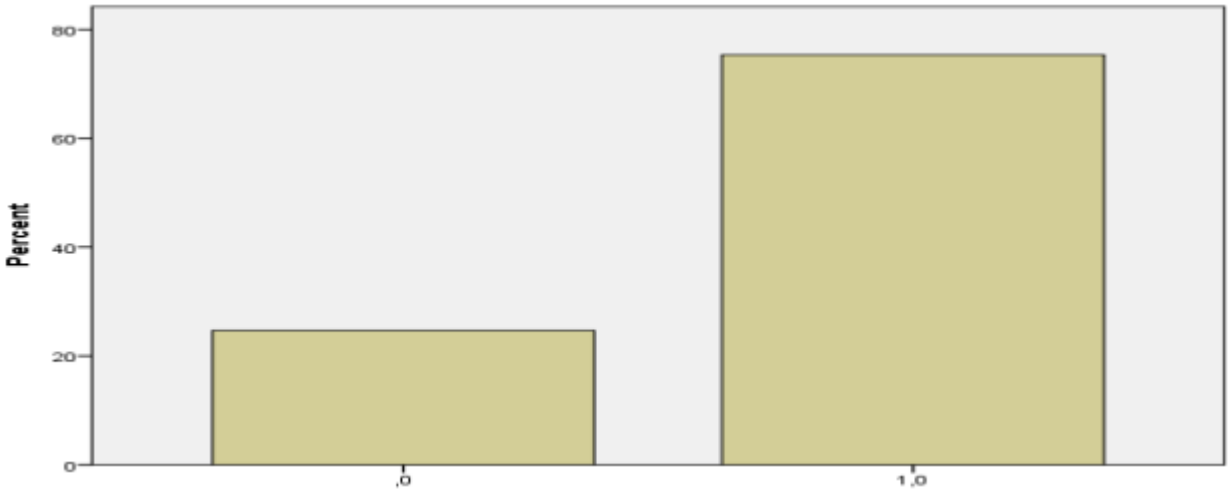


Figure 5: Did your organization only redesign processes for certain business processes?

Looking at all MNEs, it is clear from figure 5 above that 78% of the respondents did re-engineer certain processes of their business and 22% of the respondents did not re-engineer certain processes of their business.

Average respondents from Volvo have been involved in the process of re-engineering, did receive compensation after BPR and benefitted with salary increment after BPR implementation, while the average remaining average respondents did not.

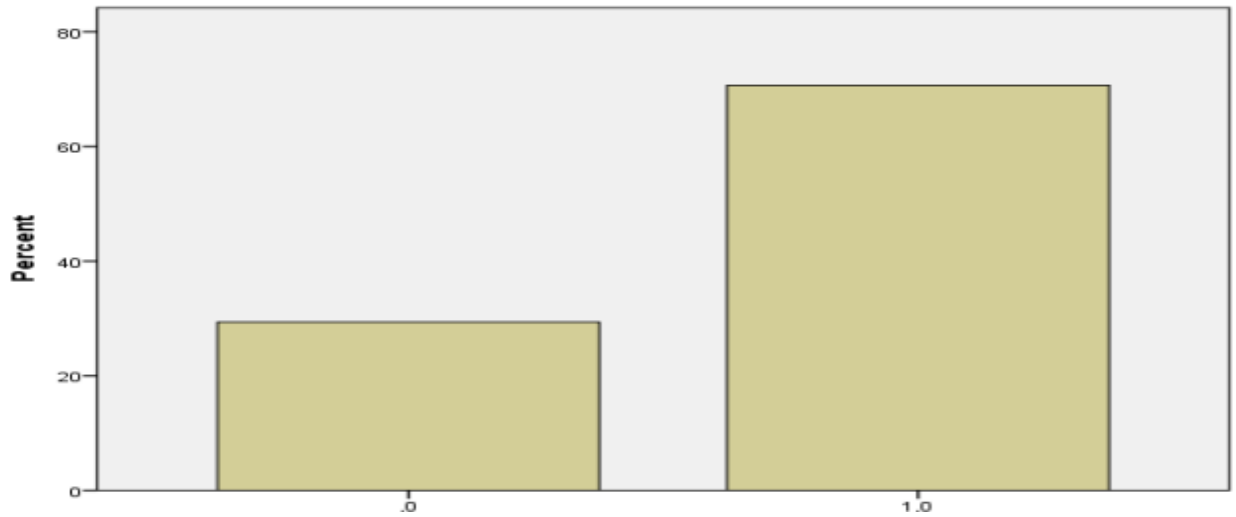


Figure 6: Did you have involvement in the process reengineer or redesign?

Looking at all MNEs, it is clear from figure 8 above that 70% of the respondents were involved in the process re-engineering and the remaining 30% were not involved in the process of re-engineering.

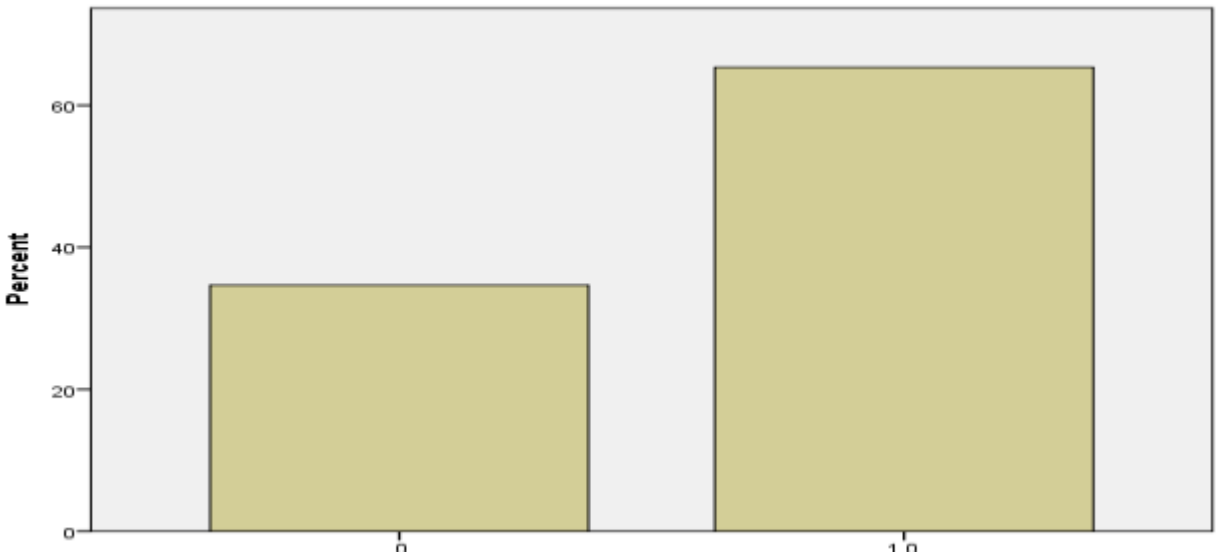


Figure 7: Did you have compensation?

Looking at all MNEs, it is clear from figure 13 above that 65% of the respondents did have compensation after the implementation of re-engineering and 35% of the respondents did not have compensation after the implementation of re-engineering.

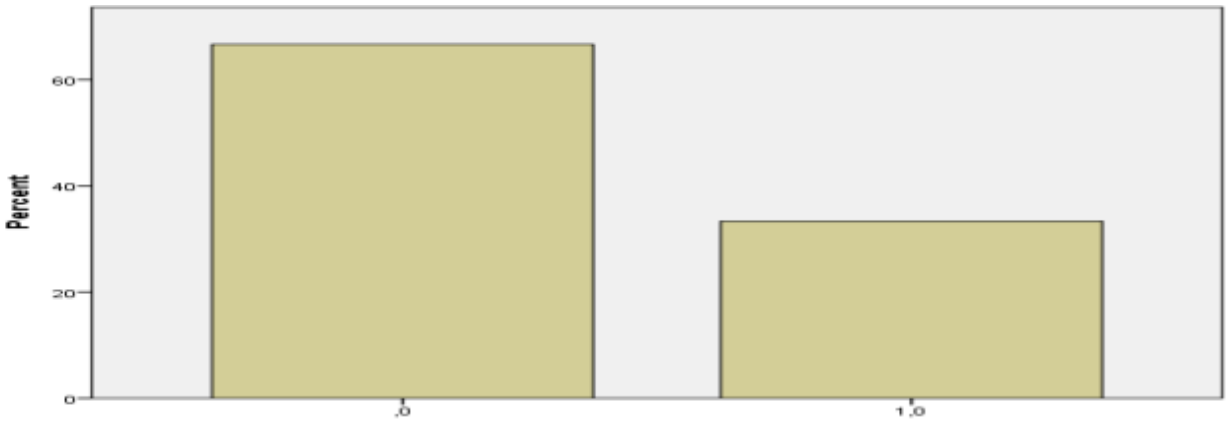


Figure 8: Did you benefit with salary increment?

Looking at all MNEs, it is clear from figure 6 above that 66% of the respondents did not benefit with salary increment after BPR implementation and 34% of the respondents did benefit with salary increment after BPR implementation.

The average respondents from all MNEs did not benefit in promotion after BPR implementation.

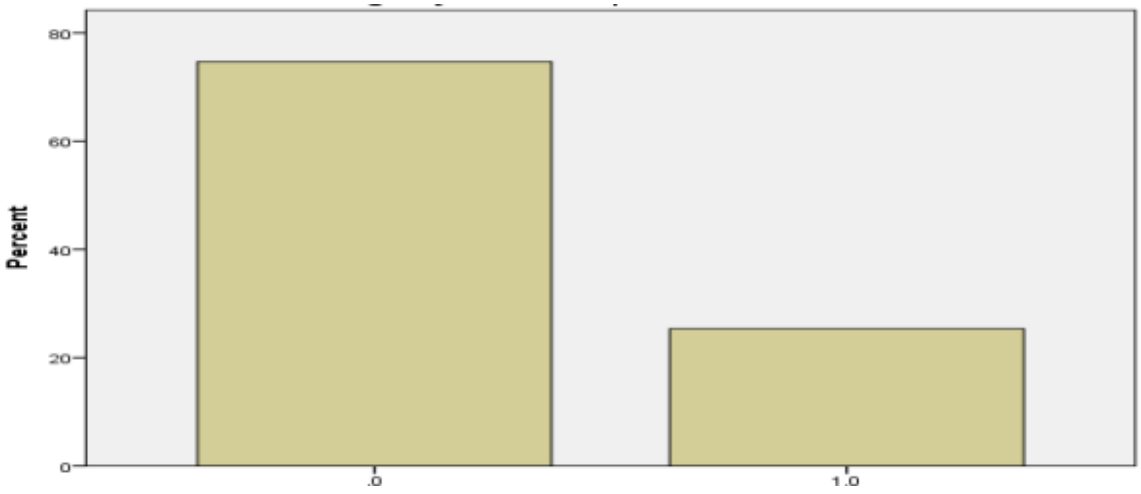


Figure 9: Did you benefit with promotion?

Looking at all MNEs, it is clear from figure 7 above that 76% of the respondents did not benefit in promotion and 24% of the respondents did benefit in promotion.

The average respondents from Audi, VW, Volvo, Mercedeces and Nissan agree that they do have work satisfaction after BPR implementation while the remaining average respondents do not have work satisfaction after BPR implementation.

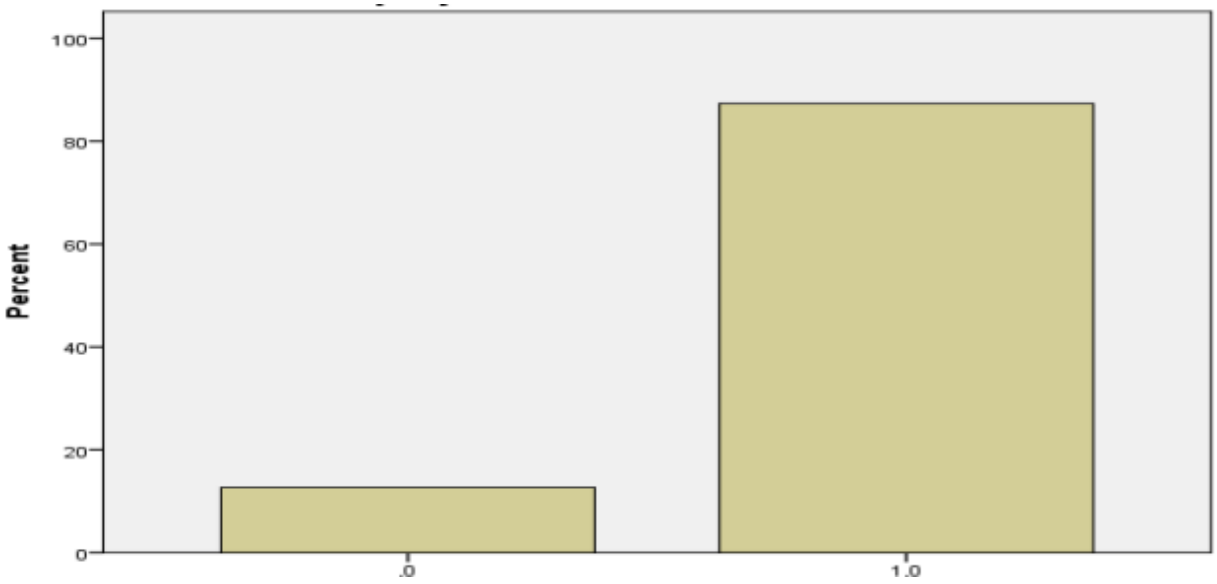


Figure 10: Did you have work satisfaction?

Looking at all MNEs, it is clear from figure 10 above that 90% of the respondents have work satisfaction as a result of process re-engineering and the remaining 10% do not have work satisfaction in the process of re-engineering.

The average respondents from Audi, VW and Volvo confirm that they were empowered after BPR while the remaining average respondents confirm that there were not empowered.

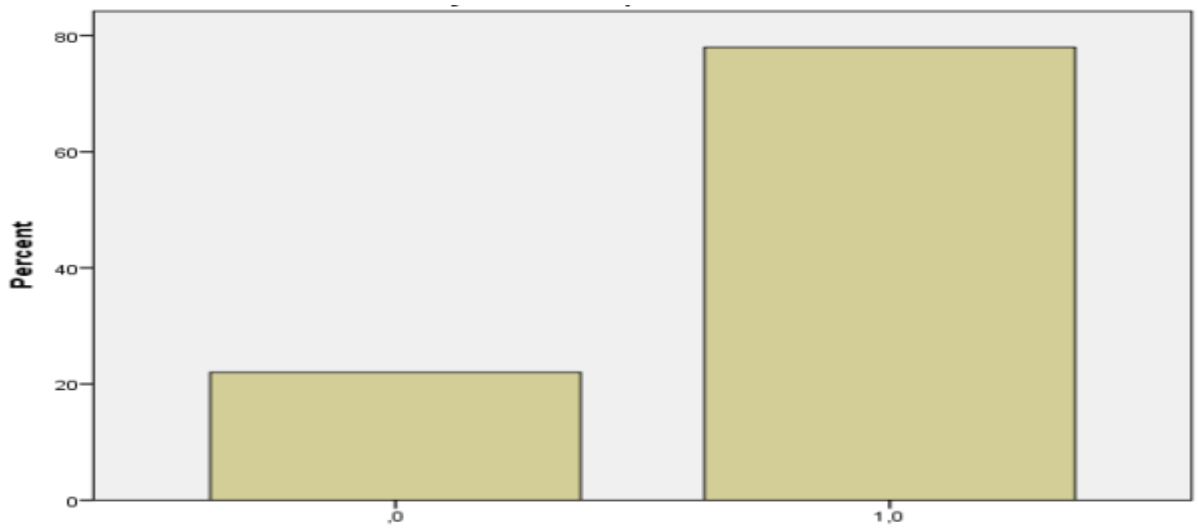


Figure 11: Did you have empowerment?

Looking at all MNEs, it is clear from figure 10 above that 78% of the respondents were empowered as a result of process re-engineering and the remaining 12% were not empowered in the process of re-engineering.

The average respondents from Toyota have benefitted with simple work load after BPR implementation, while the remaining average respondents from other MNEs have not benefitted with workload after BPR implementation.

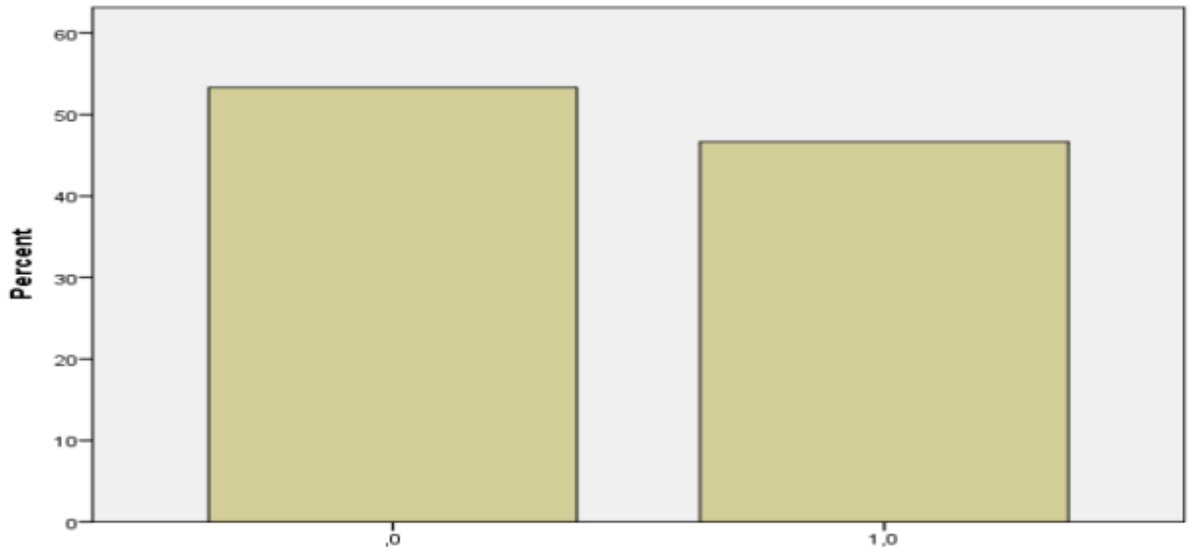


Figure 12: Did you have benefit of simple workload?

Looking at all MNEs, it is clear from figure 11 above that 45% of the respondents have the benefit of a simpler workload as a result of process re-engineering and 55% of the respondents did not have the benefit of simpler workload.

The average respondents from Nissan, Mercedeces and Volvo did have the utilisation of IT after BPR implementation while the remaining the average respondents from the other MNEs did not have the utilisation of the IT after BPR implementation.

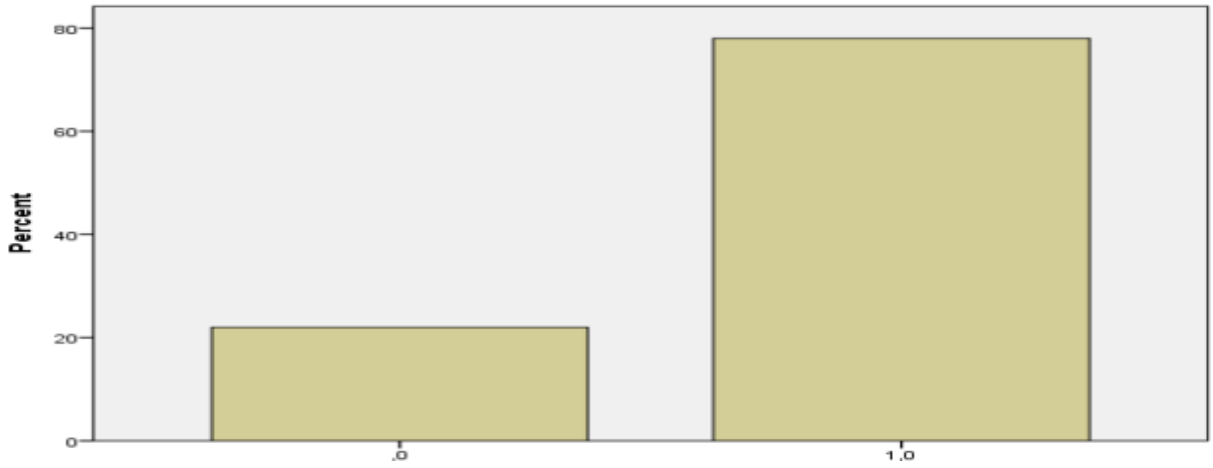


Figure 13: Did you have utilization of information technology?

Looking at all MNEs, it is clear from figure 12 above that 78% of the respondents did have the utilisation of IT after the implementation of re-engineering and 22% of the respondents did not have the utilisation of IT after the implementation of re-engineering.

The average respondents from Audi, BMW , Iveco, Nissan, Toyota and VW agree that they observed improvement on employees' behaviour and attitude, while the remaining average respondents strongly agree that they observed improvement on employees' behaviour and attitude.

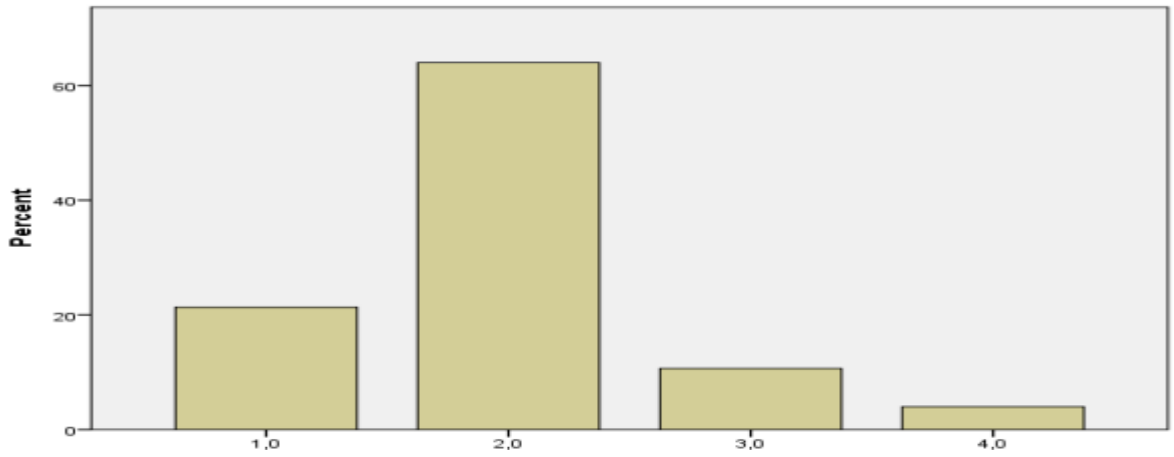


Figure 14: You did observe improvement on employees' behaviour and attitude

It is clear from figure 14 above, that 21% of the respondents strongly agree, 63% of the respondents agree, 11% of the respondents not sure, 5% of the respondents strongly disagree and 0% of the respondents strongly disagree that they did observe improvement on the employees' behaviour and attitude.

The average respondents from Audi, BMW, Iveco, Mercedeces, Nissan, Toyota, Volvo and VW agree that they observed change in skill and knowledge of employees while the remaining average respondents strongly agree that they observed change in skill and knowledge of employees after BPR implementation.

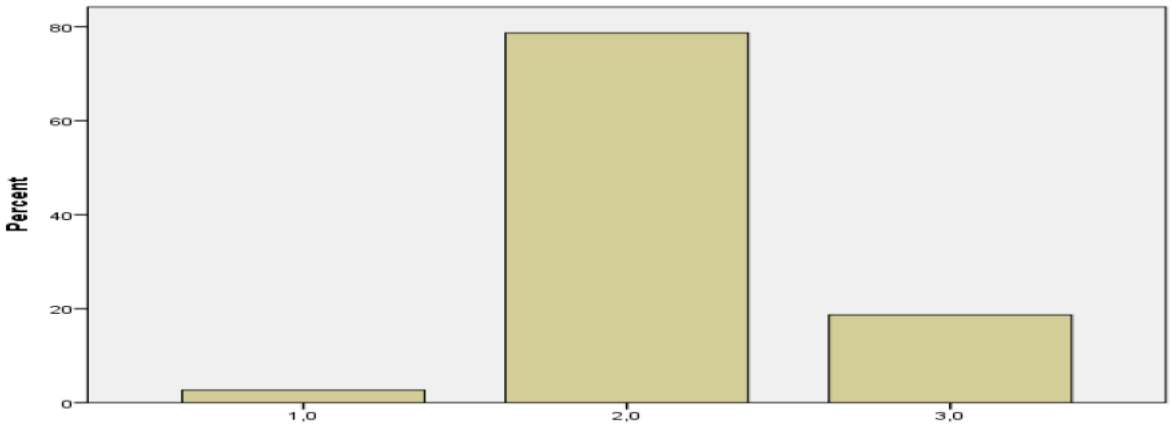


Figure 15: You did observe change in skill and knowledge of employees

It is clear from figure 15 that 4% of the respondents strongly agree, 78% of the respondents agree, 18% of the respondents not sure and 0% of the respondents strongly disagree that they did observe change in skills and knowledge of employees.

The average respondents from Iveco, Nissan, Toyota, and Volvo strongly agree that they have observed improvement on team coordination and management system while the remaining average respondents agree that they have observed improvement on team coordination and management system after BPR implementation.

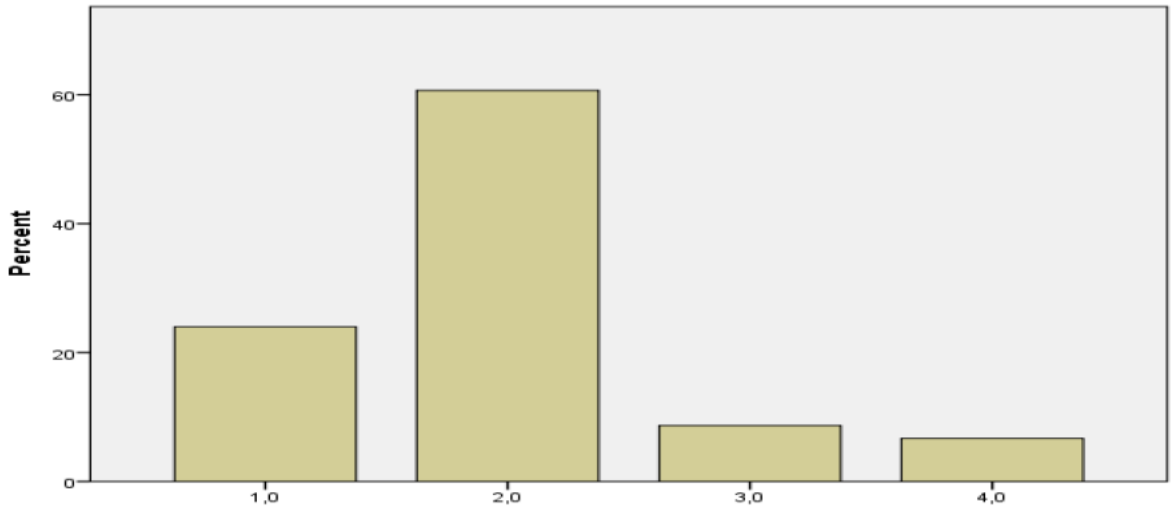


Figure 16: You did observe improvement on team coordination and management

It is clear from figure 16 that 24% of the respondents strongly agree, 61% of the respondents agree, 8% of the respondents not sure, 7% of the respondents strongly disagree and 0% of the respondents strongly disagree that they did observe improvement on team coordination and management.

The average respondents from Audi, Iveco, Ford, Mazda, Mercedeces, Nissan, and Toyota agree that they have observed a radical change, while the average respondents from Volvo, VW and BMW are not sure of any observed radical change after BPR implementation.

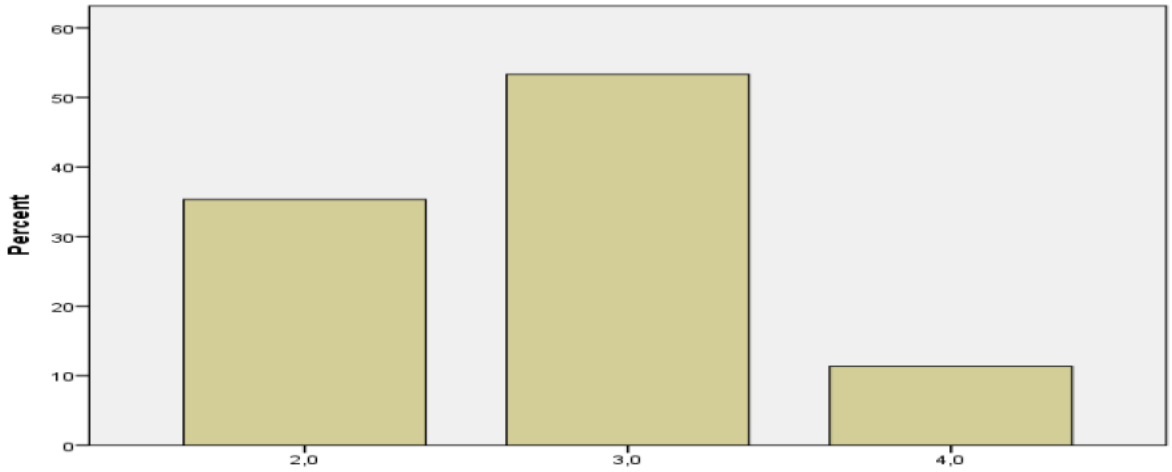


Figure 17: You did observe radical change

It is clear from figure 17 that 0% of the respondents strongly agree, 35% of the respondents agree, 54% of the respondents not sure, 11% of the respondents strongly disagree and 0% of the respondents strongly disagree that they did observe radical change.

The average respondents from Audi, Ford, Mazda, Mercedeces, and Toyota strongly agree that the redesigned processes are working better than the previous ones while the average respondents from BMW, Iveco, Nissan, Volvo and VW agree that the redesigned processes are working better than the previous ones after BPR implementation.

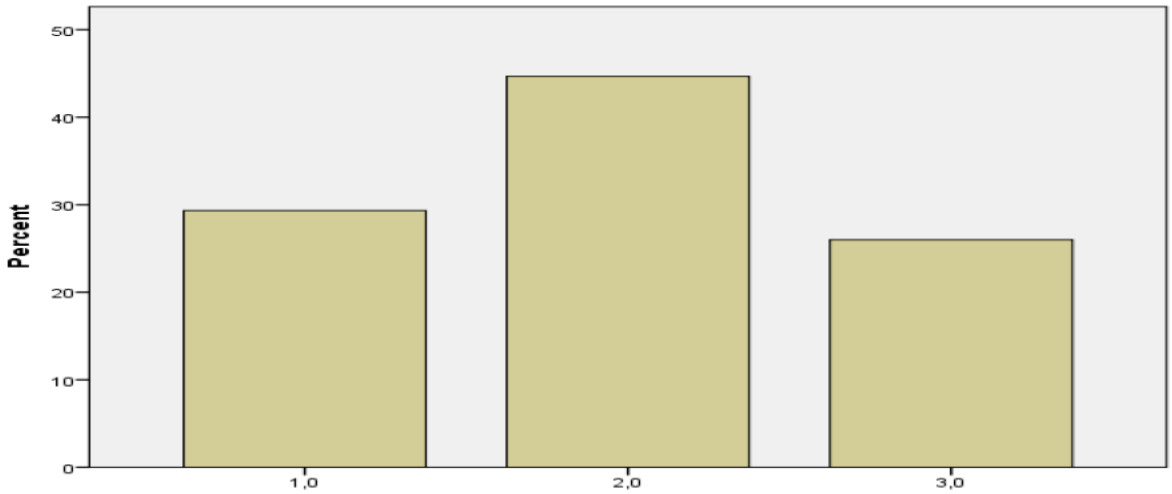


Figure 18: The designed processes are working better than the previous one

It is clear from figure 18 that 28% of the respondents strongly agree, 45% of the respondents agree, 27% of the respondents not sure and 0% of the respondents strongly disagree that the redesigned processes are working better than the previous ones.

The average respondents from Ford, Mazda, and Mercedeces strongly agree that the redesigned processes are working slower than the previous ones and the average respondents from Nissan, Toyota and Audi agree that the redesigned processes are working slower than the previous ones while the average respondents from BMW, Iveco, and Volvo are not sure whether the redesigned processes are working slower than the previous ones after BPR implementation.

The average respondents from Mercedeces strongly agree that the redesigned processes are working the same as the previous ones and the average respondents from Audi, Ford, Mazda, BMW, Iveco, Nissan and VW are not sure that the redesigned processes are working slower than the previous ones while the average respondents from Toyota and Volvo strongly disagree that the redesigned processes are working the same as the previous ones, after BPR implementation.

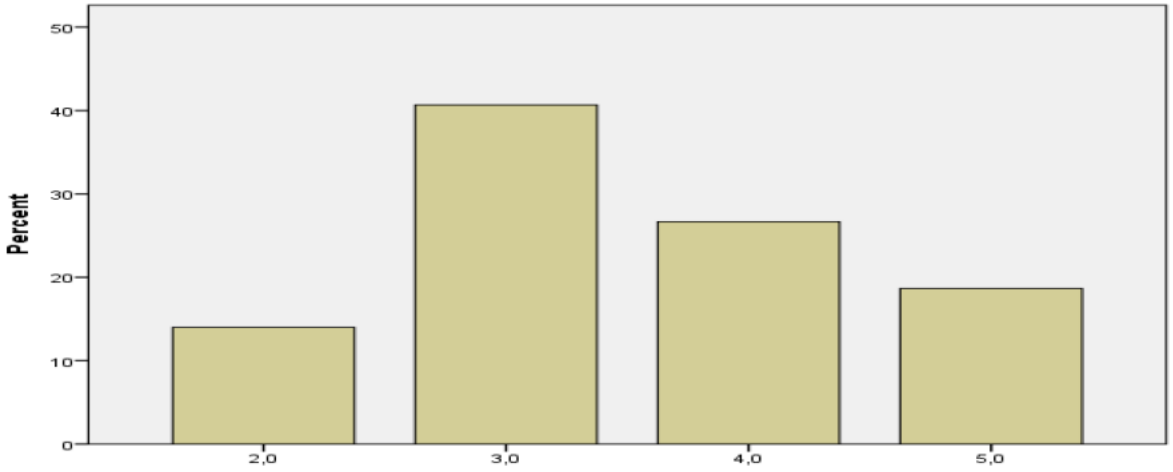


Figure 19: The designed processes are working slower than the previous one

It is clear from figure 19 that 0% of the respondents strongly agree, 14% of the respondents agree, 40% of the respondents not sure, 27% of the respondents strongly disagree and 0% of the respondents strongly disagree that the redesigned processes are working slower than the previous ones.

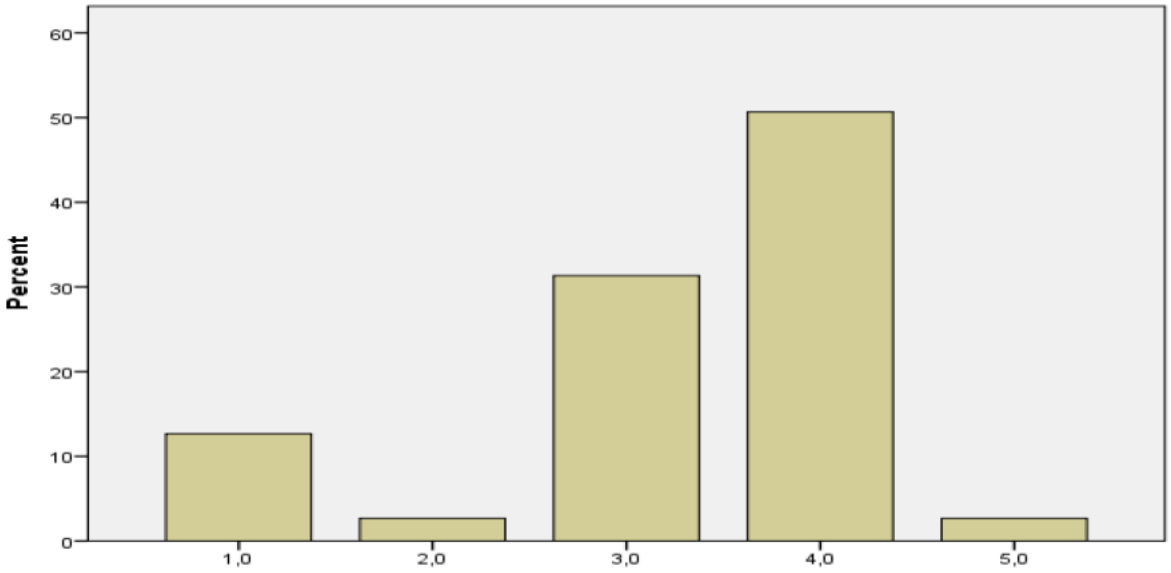


Figure 20: The redesigned processes are working the same as the previous

It is clear from figure 20 that 14% of the respondents strongly agree, 2% of the respondents agree, 32% of the respondents are not sure, 50% of the respondents strongly disagree and 2% of the respondents strongly disagree that the redesigned processes are working the same as the previous ones.

The average respondents from Audi agree that the employees did receive gain sharing (incentives or rewards) and the average respondents from Ford, Iveco, Mazda, Mercedeces, Nissan, Toyota and Volvo not sure that the employees did receive gain sharing (incentives or rewards) while the average respondents from BMW and VW strongly disagree that the employees did receive gain sharing (incentives or rewards).

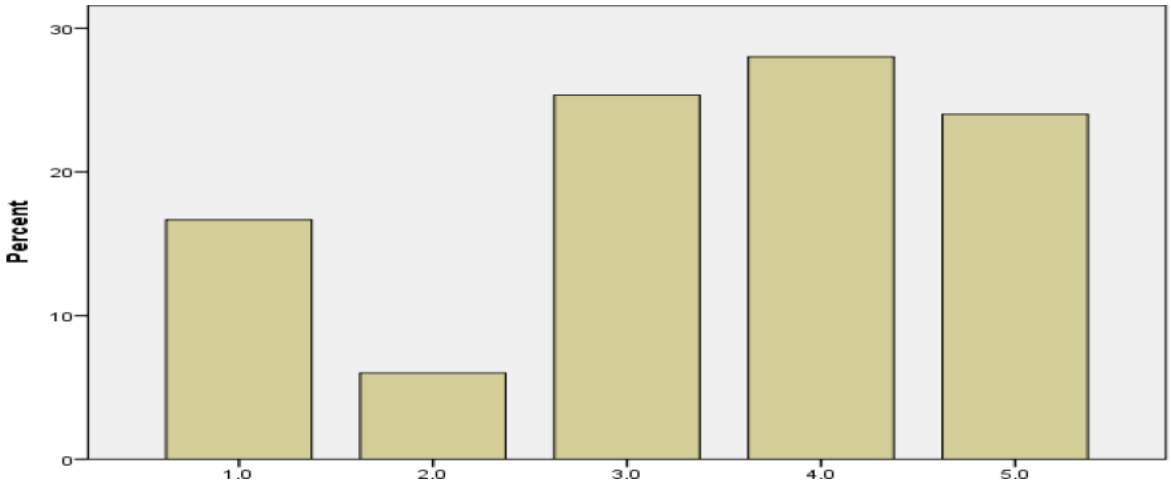


Figure 21: You did receive gain sharing incentives or rewards from your organization

It is clear from figure 21 that 16% of the respondents strongly agree, 6% of the respondents agree, 26% of the respondents are not sure, 28% of the respondents strongly disagree and 24% of the respondents strongly disagree that they did receive gain sharing incentives from the organization.

The average respondents from Audi, Ford, Iveco, Mazda, Mercedeces, Nissan and Volvo agree that the organization's profit has increased and the average respondents from BMW, VW and Toyota not sure that the organization's profit has increased after BPR implementation.

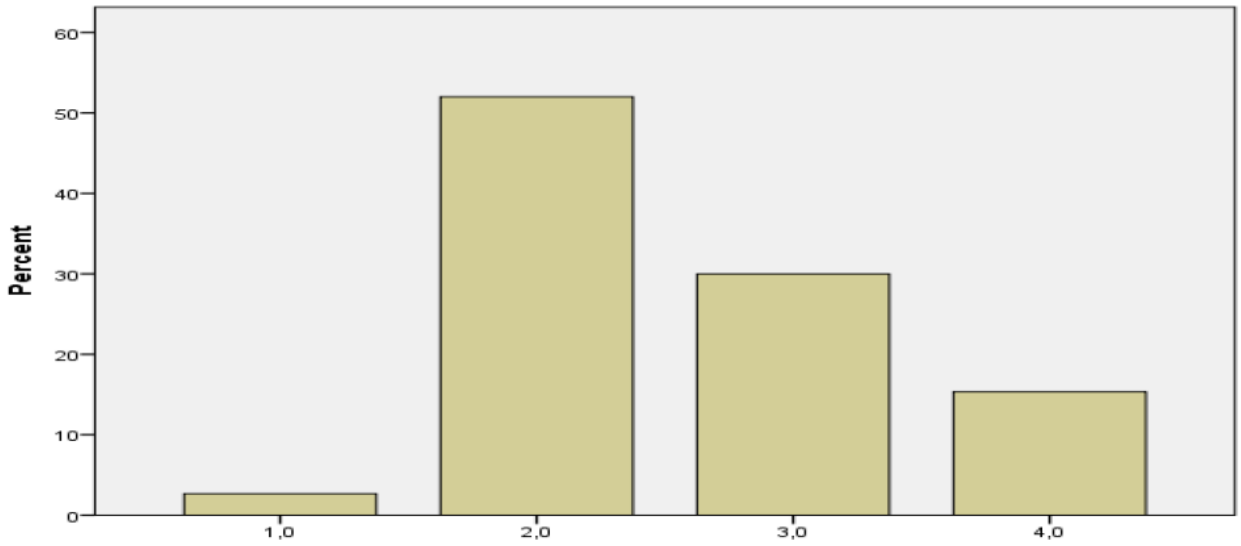


Figure 22: Your organization profit has increased

It is clear from figure 22 that 3% of the respondents strongly agree, 52% of the respondents agree, 30% of the respondents are not sure, 15% of the respondents strongly disagree and 0% of the respondents strongly disagree that the organization's profit did increase.

The average respondents from Ford, Mazda, Mercedeces, and Nissan strongly agree that there are less non-conformance costs derived from the redesigned processes and the average respondents from Audi, BMW, Iveco, Volvo, VW and Toyota agree that there are less non-conformance costs derived from the redesigned processes.

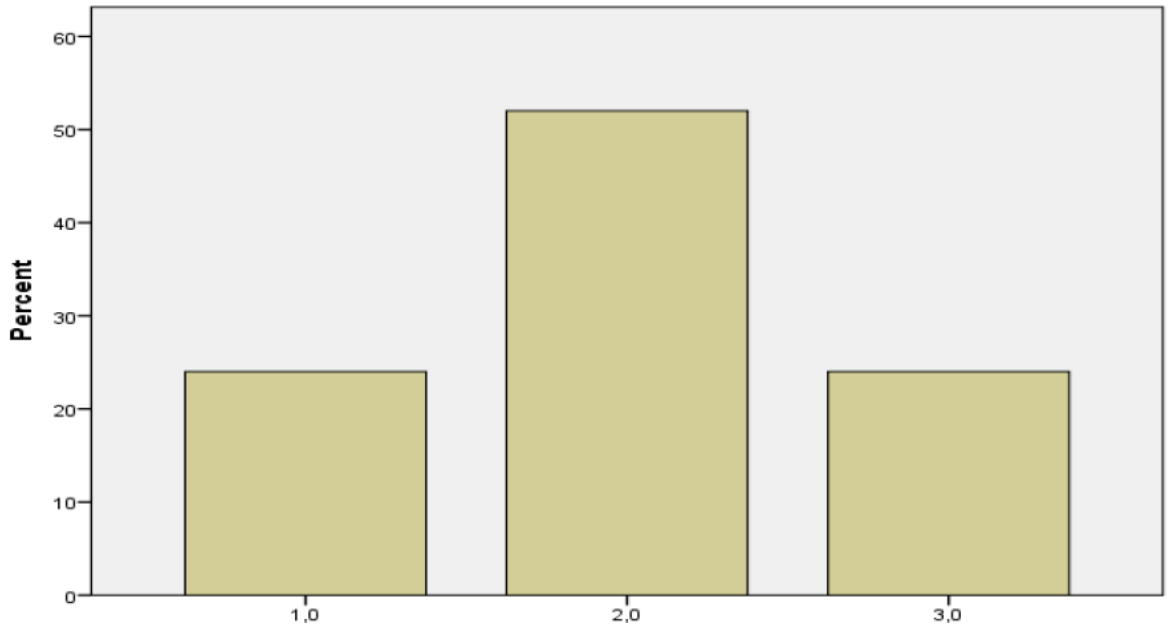


Figure 23: There are less non-conformance costs derived from the redesigned processes

It is clear from figure 23 that 25% of the respondents strongly agree, 50% of the respondents agree, 25% of the respondents not sure, 0% of the respondents strongly disagree and 0% of the respondents strongly disagree that there are non-conformance costs derived from the redesigned processes.

The average respondents from all MNEs agree that there is less reworking of products and that the product return rate from the customer has reduced, after BPR implementation.

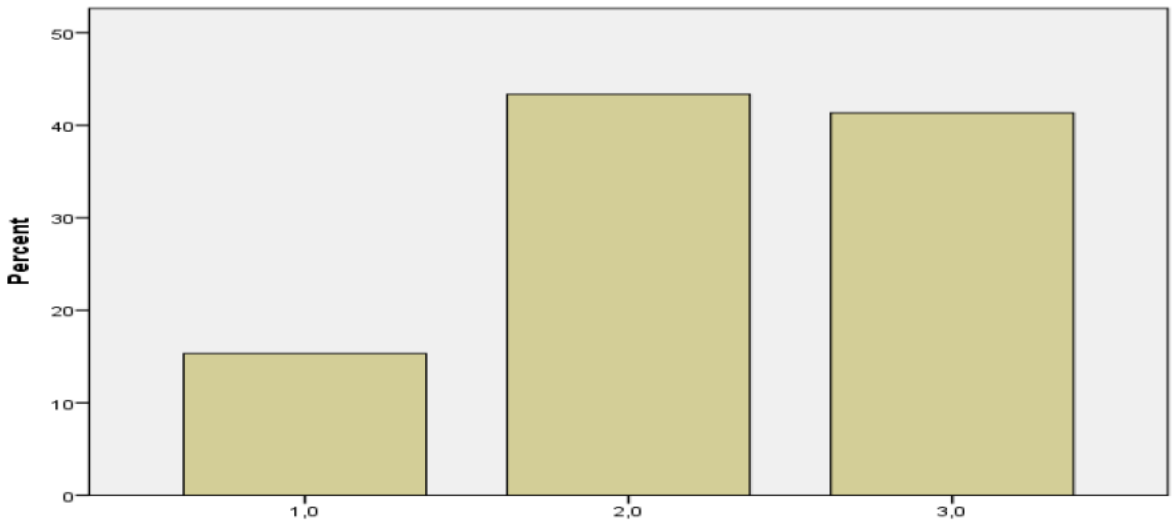


Figure 24: There is less reworking of products

It is clear from figure 24 that 3% of the respondents strongly agree, 52% of the respondents agree, 30% of the respondents are not sure and 0% of the respondents strongly disagree that there is less reworking of products.

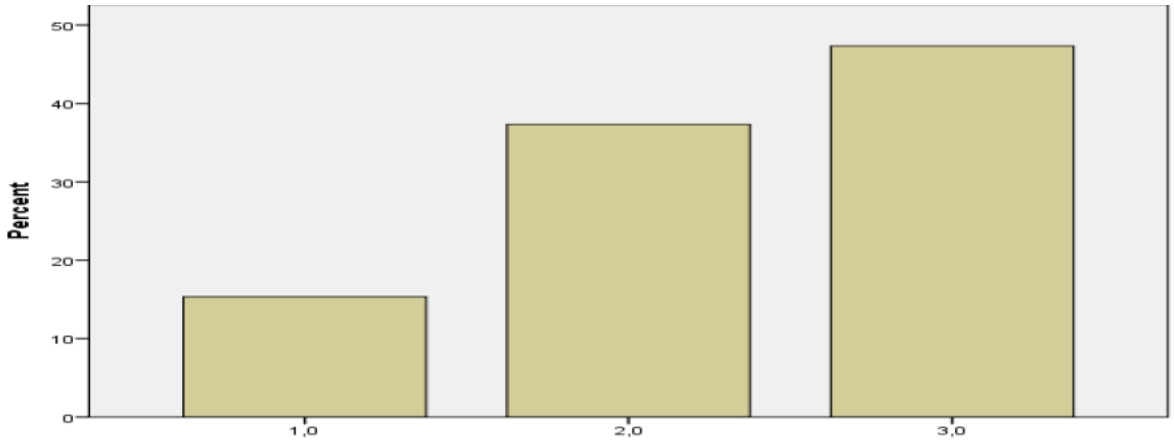


Figure 25: The product return rate from the customer has reduced

It is clear from figure 25 that 14% of the respondents strongly agree, 38% of the respondents agree, 48% of the respondents are not sure, and 0% of the respondents strongly disagree that the product return rate from the customer has reduced.

The average respondents from all MNEs strongly agree that their customer is happy with their services or products while the average respondents from Toyota agree that their customer is happy with their services or products

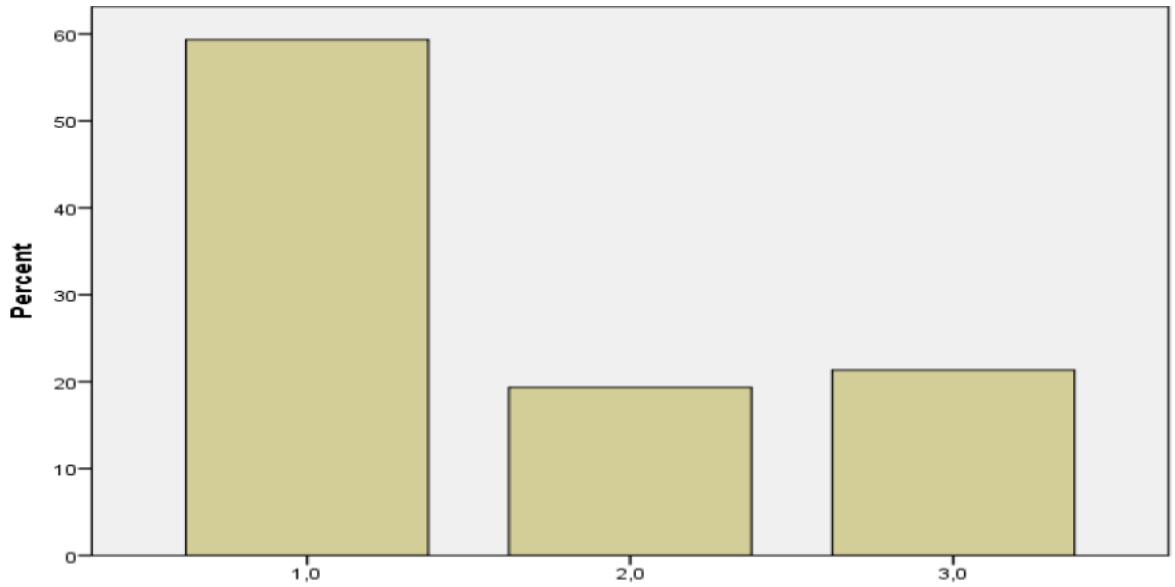


Figure 26: Your customer is happy with your services or products

It is clear from figure 26 that 58% of the respondents strongly agree, 20% of the respondents agree, 22% of the respondents are not sure, and 0% of the respondents strongly disagree that their customer is happy with their product and services.

4.2 ROE, ROA and Labour Productivity Results

The MNEs' financial results (ROE, ROA and Labour Productivity) are graphically represented in the figures which follow below.

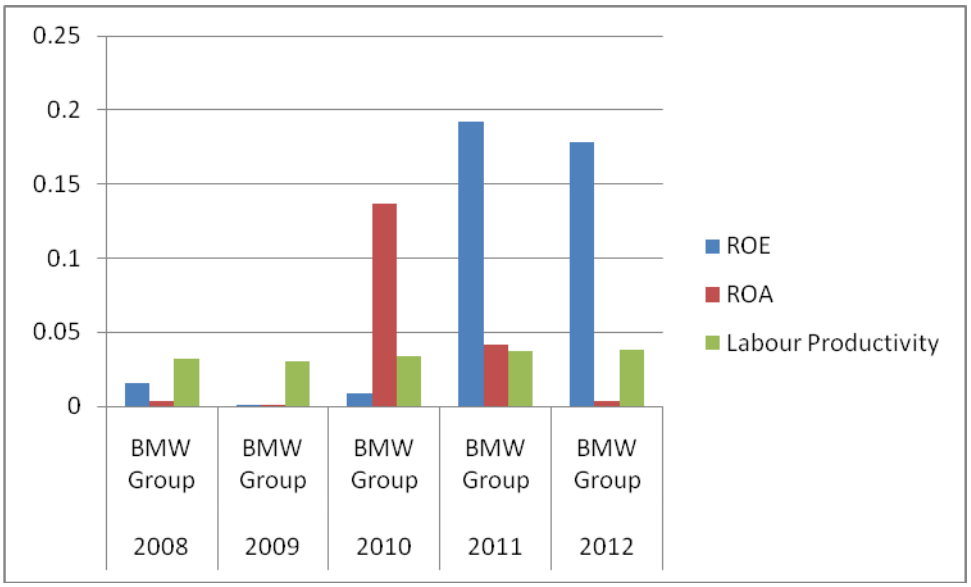


Figure 27: BMW Financial Performance

It is clear from figure 27 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant for the same duration.

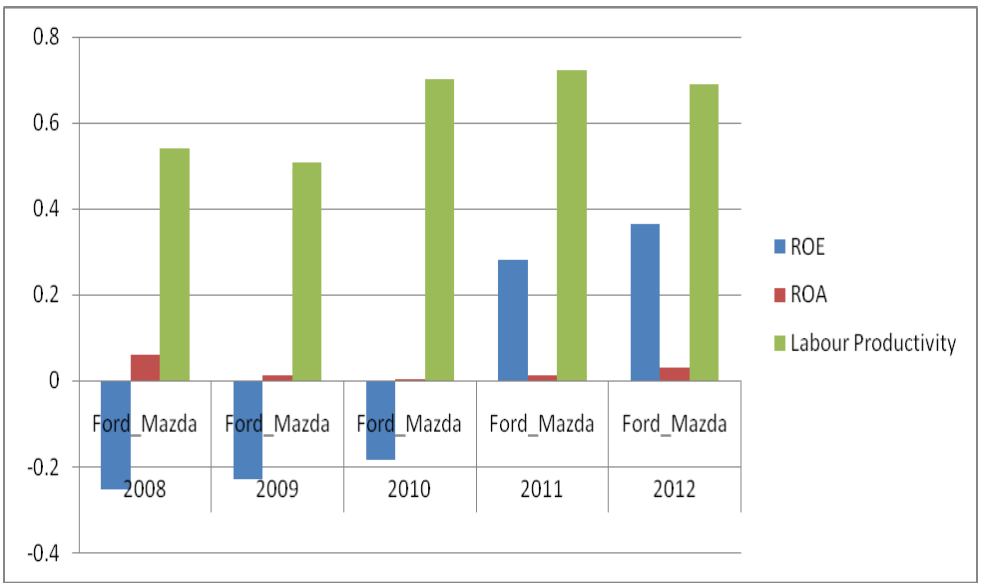


Figure 28: Ford and Mazda

It is clear from figure 28 that ROE has increased throughout the 5-year duration. ROA has dropped from 2008 to 2010 and picked up from there. Labour productivity has slightly fluctuated throughout the 5-year duration.

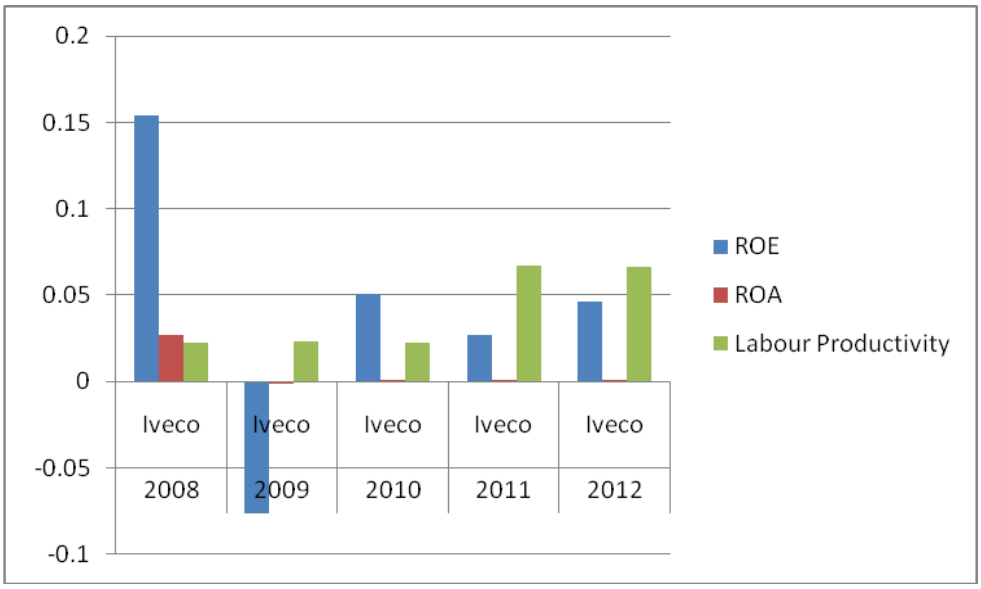


Figure 29: Iveco Financial Performance

It is clear from figure 29 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant from 2008 until 2010 and increased during the 5-year duration.

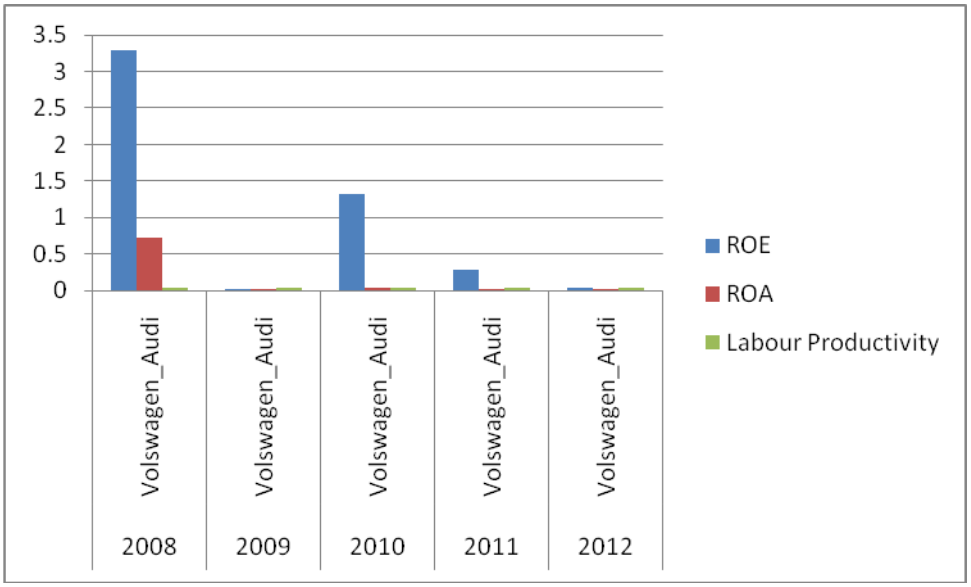


Figure 30: Volkswagen and Audi Financial Performance

It is clear from figure 30 that ROE and ROA has decreased throughout the 5-year period and labour productivity has decreased for the same period

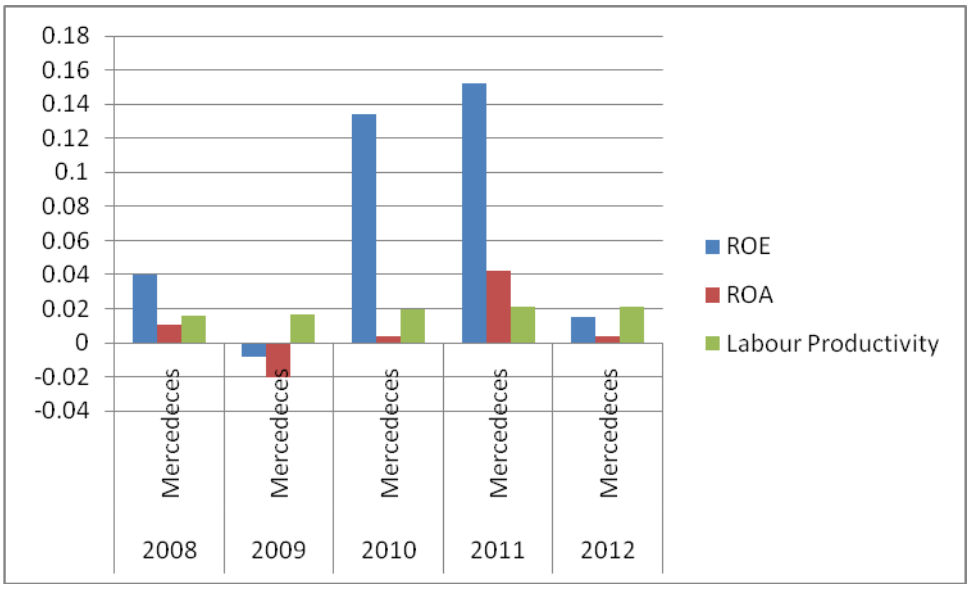


Figure 31: Mercedes Financial Performance

It is clear from figure 31 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant for the same period

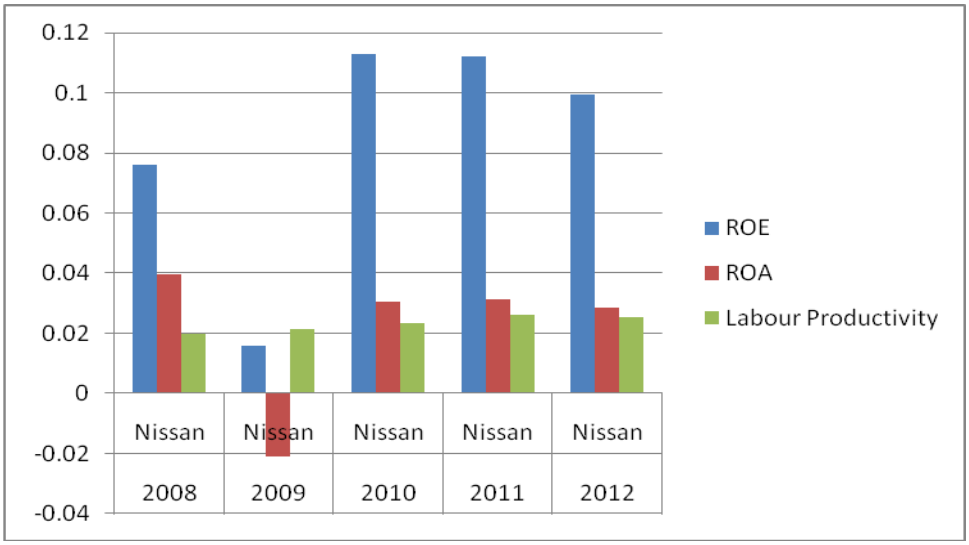


Figure 32: Nissan Financial Performance

It is clear from figure 32 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant for the same duration.

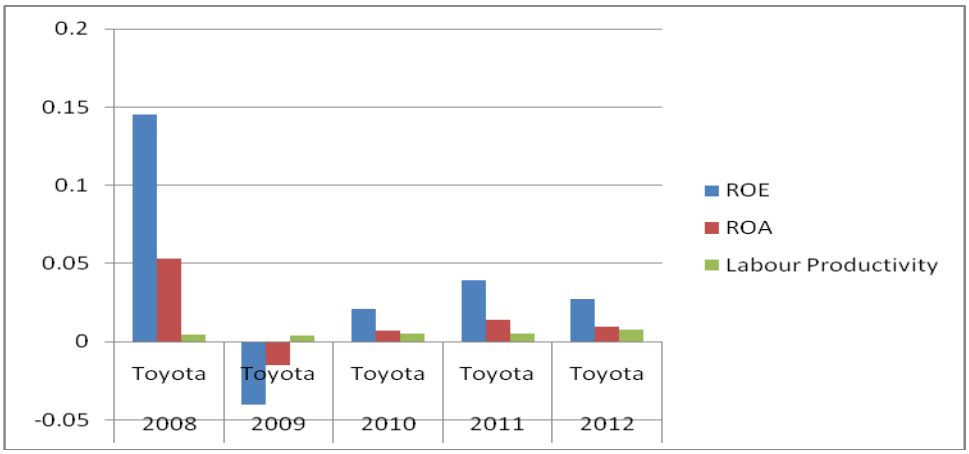


Figure 33: Toyota Financial Performance

It is clear from figure 33 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant for the same period.

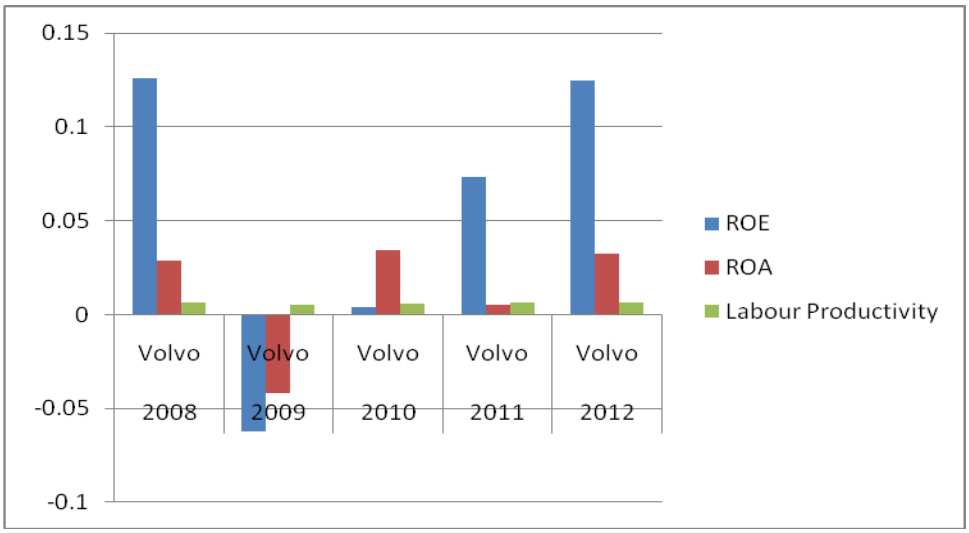


Figure 34: Volvo Group

It is clear from figure 34 that ROE and ROA has remained unstable throughout the 5-year period and labour productivity has remained constant for the same period.

The results for figure 27 to 34 are also presented in the table6.

	Years	BMW Group	Nissan	Toyota	Mercedeces	Volswagen_ Audi	Volvo	Evico	Ford_Mazda
ROE	2008	0.01570793	0.0762	0.145	0.039856809	3.283270346	0.126	0.153798	-0.25277754
	2009	0.00121409	0.0159	-0.04	-0.008191972	0.024352429	-0.062	-0.07634	-0.22807018
	2010	0.00889762	0.113	0.021	0.133963887	1.330428113	0.004	0.050899	-0.1832332
	2011	0.19230694	0.1122	0.039	0.152074663	0.281958846	0.073	0.026746	0.280296625
	2012	0.17814103	0.0995	0.027	0.014957339	0.030147611	0.125	0.046027	0.364777849
ROA	2008	0.00347	0.03962	0.05293	0.01058	0.72657	0.02886	0.02668	0.05935
	2009	0.00096	-0.02107	-0.01503	-0.02026	0.00053	-0.04168	-0.00121	0.01315
	2010	0.13659	0.03047	0.00690	0.00353	0.03040	0.03448	0.00107	0.00364
	2011	0.04201	0.03131	0.01369	0.04246	0.00697	0.00540	0.00061	0.01179
	2012	0.00401	0.02868	0.00925	0.00418	0.00777	0.03254	0.00091	0.03071
Labour Productivity	2008	0.03230	0.01991	0.00468	0.01581	0.03532	0.00624	0.02261	0.54108
	2009	0.03002	0.02124	0.00409	0.01643	0.03567	0.00504	0.02356	0.50684
	2010	0.03429	0.02354	0.00526	0.01978	0.03797	0.00610	0.02241	0.70173
	2011	0.03702	0.02596	0.00505	0.02107	0.03471	0.00659	0.06688	0.72345
	2012	0.03861	0.02552	0.00767	0.02099	0.03541	0.00641	0.06659	0.69055

Table 6: ROE, ROA and Labour Productivity values for all MNEs

5 CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

This chapter discusses the expected and actual results obtained from the research undertaken and is followed by a discussion of some key observations of the data in relation to the propositions.

5.2 Demographic profile of respondents

After a rigorous review of literature for 10 MNEs in the motor manufacturing sector, it was noted that there was one MNE, i.e. Evico that did not have the manufacturing plant in South Africa as yet. That MNE is currently in the process of establishing a plant in the Rosslyn area, east of Pretoria.

It was challenging to obtain the annual reports (ROE, ROA and Labour Productivity) for these MNEs operating in the South African markets, as the financial data from other countries was consolidated in one annual report. This compelled the researcher to use the consolidated annual financial report instead of the South African annual financial report only. It had been expected that MNEs operating in the South African territory would have their financial data reported individually in the annual report.

With regard to the questionnaire data, it was expected that MNEs had been implementing BPR as an innovation strategy for competitiveness in the market to show greater organizational performance in terms of ROE, ROA and Labour Productivity. The following findings regarding the review of BPR in MNEs were therefore obtained as follows :average respondents were involved in the process of re-engineering; that the average respondents were empowered in the process of re-engineering; the average respondents have work satisfaction as a result of process of re-engineering; the average respondents did not have the benefit of simple work load due to process of re-engineering; average respondents did have the utilisation of IT after the implementation

of re-engineering; average respondents did have compensation after the implementation of re-engineering; average respondents agree that they did observe improvement in the employees' behaviour and attitude; average respondents agree that they did observe change in skills and knowledge of employees; average respondents agree that they did observe improvement on team coordination and management; average respondents not sure that they did observe radical change; average respondents agree that the redesigned processes are working better than the previous ones; average respondents strongly disagree that the redesigned processes are working the same as the previous ones; average respondents strongly disagree that they did receive gain sharing incentives from the organizations ; average respondents agree that the organization's profit did increase; the average respondents agree that there are non-conformance costs derived from the redesigned processes; average respondents agree that there is less reworking of products; the average of the respondents not sure that the product return rate from the customer has reduced; average respondents strongly agree that their customer is happy with their product and services.

It is clear from figure 2 that 43% of the respondents implemented their BPR between 1 to 5 years, 28% implemented BPR less than a year ago, 22% implemented BPR 6 to 10 years ago, 8% of the respondents implemented their BPR more than 10 years ago and the remaining respondents of 2% are not sure of when BPR was implemented.

5.3 Results pertaining to Proposition 1a

Items a, b, c, d and e from the questionnaire measured the status of the BPR project implementation. It was expected that the status of BPR implementation is determined if respondents: have been in an organization for a year or more than 1 year, have implemented IT solution in less than a year, or more than this . The results were expected to show that if an MNE has implemented IT or single-functionally (re-engineering of the SCM process only) focused solutions as part of the re-engineering process, the ROA value should increase from the year 2008 to 2012 which indicates that the return on asset (i.e. BPR project) is yielding a profit. In terms of ROE, it was expected that this ratio would increase from the year 2008 to 2012, as it is a good measure of

profitability. Labour Productivity value is expected to increase as it is an indication that the efficiency and effectiveness of the staff members add in value generation to the respective MNE.

From Chapter 4 above, the respondents' results show that the MNE's performance is perceived to have a positive association with single-functionally focused BPR implementation project (i.e. re-engineering of IT or SCM or finance function only). These results from the respondents are supported by the findings of Ozcelik (2010); Altinkemer, Ozcelik and Ozdemir (2010) ; Huatuco, Burgess and Shaw (2009); Rodesovi, Pasula, Berber, Nebojsa and Nerandzic (2013), who looked deeper into the implementation of the BPR within a specific function(i.e.SCM or Engineering) and found that BPR projects that are functionally focused are more positively associated with performance on average than with cross-functionally (i.e.SCM and Engineering) focused scope BPR projects. Subsequently, Bellgran and Yamamoto (2013)'s study saw the need of focusing on a specific type of manufacturing process, using the MPI model, which will assist MPI implementers in knowing what to expect and prepare when conducting different kinds of MPI. Limited knowledge has been gathered on types of MPI in relation to radical innovation and further work can be conducted on the type of MPI in this regard. However, the results from the annual report, which is used in this research to validate the perceived performance of the MNE respondents, show an unstable performance of ROA, ROE and Labour Productivity. The instability could be due to a numbers of factors in the economy during the 5-year period chosen, especially the recession period that was experienced in 2009.

5.4 Results pertaining to Proposition 1b

Items a, b, r, s, t, u, v, w, x, y, and z from the questionnaire evaluate the perceived performance of the MNE since BPR implementation, in terms of the process turnaround time, cost and quality. The results are expected to show that the respondents' response will be positive if the BPR implemented is effective. Positive in this regard refers to an increase in cost reduction and less turnaround time of the re-engineered process. It is expected that if an MNE shows improved performance since BPR implementation in terms of the process turnaround time, cost and quality as part of the re-engineering

process, the ROA value should increase from the year 2008 to 2012, which indicates a return on asset, that the BPR project is yielding a profit. In terms of ROE, it is expected that this ratio will increase from the year 2008 to 2012, as it a good measure of profitability. In terms of Labour Productivity the value is expected to increase as the number of employees are retrenched or reduced from the re-engineered process, with the sales or revenue remaining at the same value or increasing. This will be an indication that re-engineered processes yield a better performance. From Chapter 4 above, the respondents' results show that the MNE's performance is perceived to have improved since the BPR implementation project. These results from the respondents are supported by the findings of Ciaghi et al.(2010), Bustamam et al.(2013), Al-Bekhit (2013) and Ringim et al.(2013) who, in an effort to evaluate the impact of BPR implementation on various organizations in terms of cost, discovered that BPR is an important activity for minimising costs (Ciaghi et al.,2010) and that putting suitable BPR methods in place will enhance business operations (Bustamam et al.,2013) and which will eventually reduce cost (Al-Bekhit,2013). Ringim et al.(2013) have shown that the most objective of BPR implementation is improvement in earnings, and customer service; either proactive or reactive for future or current challenges, due to globalization, or to minimise operational cost. However, the results from the annual report which are used in this research to validate the perceived performance of the MNE respondents show an unstable performance of ROA, ROE and Labour Productivity. The instability could be due to a numbers of factors in the economy, during the 5-year period chosen.

5.5 Results pertaining to Proposition 1c

Items f, g, h, I, j, k, l, m, n, o, p, q, u, v, w, x, y, and z evaluate the employees' fruitfulness after BPR project implementation. The results of these items were expected to show that the respondents respond negatively in terms of the employee's reward and incentive system after the implementation of the BPR project. The salaries and incentives of employees are expected not to increase, since a BPR was put in place to reduce cost. This is validated by the increased ROA value from the year 2008 to 2012, which indicates a return on asset, that a BPR project is yielding a profit. In terms of ROE, it is expected that this ratio increases from the year 2008 to 2012 as it a good measure of profitability. In terms of Labour Productivity the value is expected to increase, as the

number of employees are retrenched or reduced from the re-engineered process with the sales or revenue remaining at the same value or increasing. From Chapter 4 above, the respondents' results show that the employee's reward and incentive system is perceived to have not improved since the BPR implementation project. These results from the respondents are not supported by the findings of Ziad (2010), Ahmad (2012) and Setegn et al. (2013) who uncovered that the impact of BPR implementation in the chosen companies was pessimistic in most core human resource scope (i.e. promotion, work life, reward, etc.), except of course the career development and empowerment, with Kebede and Eshetu (2012) in agreement. Their findings indicated that BPR implementation improves employee empowerment. Omolayo (2011) also showed that there is no significant effect of re-engineering on the perception of job-uncertainty amongst bank employees. Puth and Walt (2012) also agrees with Omolayo (2011) and Ziad (2010) that employees will portray a positive behaviour towards BPR implementation if they realize or know the reasons for the necessary changes, or vice versa however, Haghighat and Mohammadi (2013) have found that the more employees perceive the advantages of process re-engineering, the more they will cooperate in implementing it. The results from the annual report which is used in this research to validate the perceived performance of the MNE respondents show an unstable performance of ROA, ROE and Labour Productivity. The instability could be due to a numbers of factors in the economy during the 5- year period chosen.

5.6 Conclusion

After assessing the results from Proposition 1a and 1b, it is clear that both proposition 1a and 1b are supported by the literature above, in Chapter 2 and Proposition 1c is not supported to a certain extend. It is obvious that not all techniques of analysing data generated perceptive results that supported the 3 propositions. This research has opened doors to further grow the academic research further in South Africa, within the manufacturing sector, as the MNEs affect the economy of the country. What was obvious is that all the MNEs have shown a considerable decline in their performance data in 2009, as the economy was facing recession around the globe.

6 CHAPTER 6: CONCLUSION

6.1 Introduction

This chapter delineates conclusions of the whole research and offers further suggestions for future research, based on the findings generated by this research.

6.2 Conclusion of the study

The findings for Proposition 1a show that the MNE's performance is perceived to have a positive association with a single-functionally focused BPR implementation project (i.e. re-engineering of IT or SCM or finance function only). However, the results from the annual report, which is used in this research to validate the perceived performance of the MNE respondents, shows an unstable performance of ROA, ROE and stable performance of Labour Productivity. The findings for Proposition 1b show- that the MNE's performance is perceived to have improved since the BPR implementation project. However the results from the annual report which is used in this research to validate the perceived performance of the MNE respondents, show an unstable performance of ROA, ROE and stable performance of Labour Productivity. The findings for Proposition 1c show that the employees' reward and incentive system is perceived to have not improved since the BPR implementation project .However, the results from the annual report which is used in this research to validate the perceived performance of the MNE respondents, shows an unstable performance of ROA, ROE and stable performance of Labour Productivity. The instability could be due to a number of factors in the economy during the 5-year period chosen, like the recession period which was experienced in 2009.

Analysing the findings of this study in relation to the context of this study, there is confusion with regard to the role BPR play in organizations. It is perceived by employees to contribute to job losses (Omolayo, 2011), not bearing in mind that where there are risks, there are opportunities for innovation. It is also perceived by employees that MNEs redesign or re-engineer their processes in order to remain innovative and competitive in the turbulent market. BPR also contributes with job opportunities, supplies goods and

services and also contributes to the formulation of Small Micro Medium Enterprises (SMME) and the Small Macro Enterprise (SME). This is elaborated and supported by the National Development Plan (NDP) of South Africa (2030), which states that the private sector of which MNEs forms a part of, is required to support small businesses by procuring goods and services from them. According to the National Growth Plan of South Africa (2030), 300 000 additional direct jobs must be created by 2020, of which 80 000 must be from the manufacturing sector.

6.3 Recommendations

This study will provide guidance and more specific insights about the BPR projects to BPR project managers, BPR specialists, process engineers, process managers, quality managers, and employees for manufacturing MNEs, in the context of South Africa. This information will also be beneficial to those MNEs that wish to undergo process redesign in South Africa, in order to remain ambidextrous in the market. This study has identified the following recommendations to BPR project managers, BPR specialists, process engineers, process managers, quality managers, and employees for manufacturing MNEs in the context of South Africa:

to revisit the employees' reward and incentive system with regards to BPR project implementation, and

to review the CSF or CFF of BPR project implementation in their field of expertise, prior to embarking on BPR implementation.

6.4 Suggestions for further research

This research has opened more doors in the field of re-engineering.

It will be worthwhile to expand the academic knowledge on the cross sectional research design using the primary and secondary data for BPR implementation, adding to what Paranjape and Guimaraes (2013) also suggested for future research.

It will also be worthwhile to further support Bellgran and Yamamoto (2013)'s future suggested study, which explores the different types of MPI. This can be associated with the single-functionally focused BPR implementation project (i.e. re-engineering of IT or SCM or finance function only) that was reviewed in this research.

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APPENDIX A

Table 7: Employees Questionnaire

Source: BPR Performance Evaluation (Setegn, Moorthy, & Ensermu, 2013)

For the following statements, please answer the general questions (**Section A**) about your company and make a cross (**Section A to F**) to the number that corresponds to your level of agreement with each statement. Note the following abbreviations: **N-Not Sure, SA-Strongly Agree, A-Agree, D-Disagree, SD-Strongly Disagree, Business Process Redesign or Reengineering-BPR,NI-Never Implemented**		
Company Name:	**Date:**	**Respondent Position:**
Status of the BPR project Implementation		
A) QUESTIONS		**Tick where appropriate**
a) How long have you been in your organization?		**Less than a year** ☐ **1 to 5 years** ☐ **6 to 10 years** ☐ **More than 10 years** ☐
b) When was BPR implemented in your organization?		**Less than a year** ☐ **1 to 5 years** ☐

	6 to 10 years ☐ **More than 10 years** ☐ **Not Sure** ☐
c) Did your organization implement any IT solutions (i.e. SAP, SYSPRO,IMPACT, Projectwise, Primevera, etc)	YES ☐ NO ☐
d) Did your organization redesign or reengineer all the business processes?	YES ☐ NO ☐
e) Did your organization only redesign processes for certain business units/ function (Production only / Procurement only, etc)?	YES ☐ NO ☐

Employee Fruitfulness after BPR implementation

B) QUESTIONS	**YES**	**NO**
f) Did you benefit with salary increment?		
g) Did you benefit in promotion?		
h) Did you have involvement in the process reengineer or redesign?		
i) Did you have empowerment?		
j) Did you have work satisfaction?		

k) Did you have benefit of simple work load?		
l) Did you have utilization of information technology?		
m) Did you have compensation?		

Respondents expectation on major improvements after BPR					
C) QUESTIONS	**SA**	**A**	**N**	**D**	**SD**
n) You did observe improvement on employee's behaviour and attitude.					
o) You did observe change in skill and knowledge of employees.					
p) You did observe improvement on team coordination and management system.					
q) You did observe radical change.					
Measurement put into place do evaluate performance in terms of turnaround time					
D) QUESTIONS	**SA**	**A**	**N**	**D**	**SD**
r) The redesigned processes are working better than the previous ones					
s) The redesigned processes are working slower than the previous ones					

t) The redesigned processes are working the same as the previous ones					
Measurement put into practice did evaluate your performance in terms of cost					
E) QUESTIONS	**SA**	**A**	**N**	**D**	**SD**
u) You did receive gain sharing(incentives or rewards) from your organization					
v) Your organization profit has increased					
w) There is less non-conformance costs derived from the redesigned processes					
Measurement put into practice did evaluate your performance in terms of quality					
F) QUESTIONS	**SA**	**A**	**N**	**D**	**SD**
x) There is less rework of products					
y) The product return rate from the customer has reduced					
z) Your customer is happy with your services or products					

APPENDIX B

Table 8: Consistency matrix

Research problem stated here: Evaluate the performance of the MNEs that implemented an effective BPR project.					
Sub-problem	**Literature Review**	**Propositions**	**Source of data**	**Type of data**	**Analysis**
The sub-problem is evaluating the perceived impact on MNEs performance (turnaround time, cost, quality, and employee's skills, knowledge, attitudes and behavior) since BPR project implementation by obtaining survey responses from employees. The perceived impact data will be validated by evaluating the financial data (ROE, Labour Productivity and ROA) of the MNEs since BPR project implementation (from the year 2008 and 2012).	Bellgran and Yamamoto (2013); Ozcelik(2010); Altinkemer,Ozcelik&and Ozdemir(2010); Huatuco, Burgess,and Shaw (2009); Rodesovi, Pasula, Berber, Nebojsa, and Nerandzic (2013), (Terziovski et al.,2003); (Heravizadeh et al., 2009; Satyanarayana & Kavitha, 2011);(Cheng &Chang,2003).	Proposition 1a): MNE performance is perceived to have a positive association with single-functionally focused BPR implementation project (i.e. re-engineering of IT or SCM or finance function only).	Refer to Appendix A for questions a, b, c, d and e ROE,ROA and Labour Productivity	Binary and ordinal data from the Completed questionnaire Interval/Ratio Data for information from the annual report	Descriptive Statistics (means, Standard Deviations of Variance), Cronbach's alpha to test the questionnaire instrument.

Research problem stated here: Evaluate the performance of the MNEs that implemented an effective BPR project.					
Sub-problem	**Literature Review**	**Propositions**	**Source of data**	**Type of data**	**Analysis**
	(Ringim et al.,2013); (Bustamam et al.,2013) and Al-Bekhit (2013);(Ciaghi et al.,2010)	Proposition 1b): MNE performance is perceived to have improved since the BPR implementation project.	Refer to Appendix A for a,b,r,s,t,u,v,w,x,y,z ROE,ROA and Labour Productivity	Binary and ordinal data from the Completed questionnaire Interval/Ratio Data for information from the annual report	Descriptive Statistics (means, Standard Deviations of Variance), Cronbach's alpha to test the questionnaire instrument.
	Ziad (2010), Ahmad (2012) and Setegn et al. (2013)	Proposition 1c): Employees' reward and incentive system is perceived to have not improved since BPR implementation project.	Refer to Appendix A for questions f, g, h, I, j, k, l, m, n, o, p, q, u, v, w, x, y, and z ROE,ROA and Labour Productivity	Binary and ordinal data from the Completed questionnaire Interval/Ratio Data for information from the annual report	Descriptive Statistics (means, Standard Deviations of Variance), Cronbach's alpha to test the questionnaire instrument.